

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXXXII. No. 2.
Whole Number 3434.

DETROIT, MICH., SATURDAY, JANUARY 9, 1909.

75 CENTS A YEAR
\$1.50 THREE YEARS

FARM NOTES.

Rape as a Forage Crop.

I have three and one-third acres of fairly rich land next my hog lot which I wish to plant to rape in the spring, running spring pigs on it later on. How old should pigs be that are farrowed the latter part of March and the first week in April, when they are turned into the rape. When should the rape be drilled and how much per acre, and vice versa. In what stage of growth should rape be when pigs are turned onto it. With an average growth of the forage, would forty spring pigs, fed a moderate quantity of grain with skim milk, be too many for the area? Also, a neighbor of mine tells me that I can seed to clover with the rape—says the rape will grow so rank the pigs will not injure the clover. Has the editor any record of this having been successfully done?

Tuscola Co.

J. P.

This question is one which should interest a great many Michigan farmers who have not tried rape as a forage crop. In the writer's opinion, it is one of the most useful forage crops available for use in our state. It is particularly valuable as a catch crop for summer forage and is also a valuable crop with which to seed clover, as is suggested by this inquirer. It is entirely practical to use rape in the hog lot, utilizing it as a green forage during the summer, and at the same time seeding the ground to clover for a clover pasture the following year. The writer has a small hog lot which was seeded in this way in the spring of 1907, and a fine seeding was secured. We make a practice also of seeding with rape in a field sown to supply a succulent variety for the sheep during the mid-summer months, and have rarely failed to get a fairly good seeding of clover with rape when so sown. There is no reason why the seeding would not succeed as well in the hog lot as in the sheep pasture. In fact, our experience with two or three trials has been that it will succeed.

To secure a maximum of available forage for the hogs, it would be better to have this area of pasture divided into two or three smaller lots by using a temporary fence; then it could be sown at different times, beginning in April and sowing a piece at intervals of two or three weeks until the first of June. Then as one piece was pastured down, the hogs could be turned into the next and the next, leaving the area first pastured to grow up again. Handled in this way the area which you plan to put into rape should furnish ample forage for the number of pigs mentioned. However, it is a question whether it would pay in dollars and cents, and where it is to be seeded to clover it would be preferable to sow the whole area at one time, say about the first of May. Upon this rich soil with a fairly well prepared seed bed, it should be ready to pasture in from six to eight weeks from date of sowing, and with favorable weather, will make good forage thruout the balance of the season. In especially dry weather it is apt to become lousy and does not make as good forage, of course, as when it attains a normal growth. The dwarf Essex variety should be sown, care being taken to secure the seed from a reliable source.

One difficulty which is experienced in the use of rape for hog pasture is that it seems to have an irritating effect upon

A FEW LEADING ARTICLES OF THE WEEK.

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the skin of the small pigs, especially white pigs, which are allowed to run in it while the dew is on, so that it is well to exercise a little care in turning the small pigs into the rape. However, the spring pigs farrowed at the time noted, should be large enough to avoid this trouble by the time the rape is ready to pasture. About 4 or 5 lbs. per acre sown broadcast and harrowed in lightly is sufficient seed. We prefer 4 lbs. rather than more where clover is sown with the crop. Where it is sown in drills and cultivated, 2 or 3 lbs. per acre is used, but where the land is seeded with the crop, it will be better to sow it broadcast

even though not quite so much forage can be grown.

Fertilizing New Land.

I am a beginner here and have new land that I am clearing. Would it be advisable to buy commercial fertilizer for such crops as potatoes, corn, oats and rye on this land? I want to raise a crop and would like the advice of someone with experience. I would like your opinion as soon as possible as I may get the fertilizer on before the land is plowed, provided it is advisable to use it.

Manistee Co. W. W. E.
It would not seem to the writer that new land should need fertilizing for the crops named, at least, not heavily. Of course, if the land is very light sand

and deficient in potash, it would probably pay to apply a moderate quantity of commercial fertilizer with from 4 to 10 per cent of potash for the potato crop. However, if the new land in that vicinity grows good crops of potatoes without the fertilizer, it would hardly seem necessary to use it the first year. In any event, you would not want to put it on before the ground is plowed, as suggested. The ground should be plowed and harrowed down and the fertilizer sown and worked into the soil previous to planting the crop.

Of course, it is not advisable to permit new land to become run down in fertility, and care should be taken on all light land particularly to seed to clover frequently, making the rotation a short one from the start so that plenty of humus and nitrogen may be provided for the growth of future crops. Then by the use of relatively small amounts of phosphorus and potash, in the form of commercial fertilizer, the fertility of the soil may be kept up at a minimum of expense and a maximum of crop yield be secured in the meantime. But in order to tell accurately just what kind of fertilizer or how much should be used on any soil for any given crop, it is necessary to put the question to the soil itself. For this reason, the writer would advise that you purchase a small quantity of commercial fertilizer and use it the first year in varying amount upon a part of the area to be put into these crops, noting the increased yield from the application of different quantities as a means of determining just how liberally to supply any needed fertility in future years.

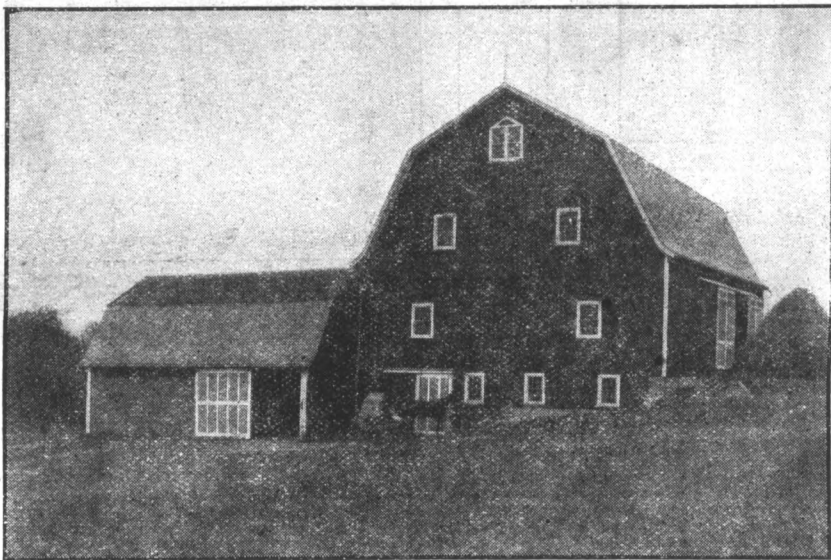
PLANNING FARM WORK.

Have we laid our plans for the campaign of 1909? This is a question we should ask ourselves as we sit by the comfortable fire on a stormy winter's day, and we should continue to ask it until all is settled in our own mind and talked over with our family until we are satisfied these plans cannot be bettered under the circumstances. Then we should know where everything is coming from to carry them out.

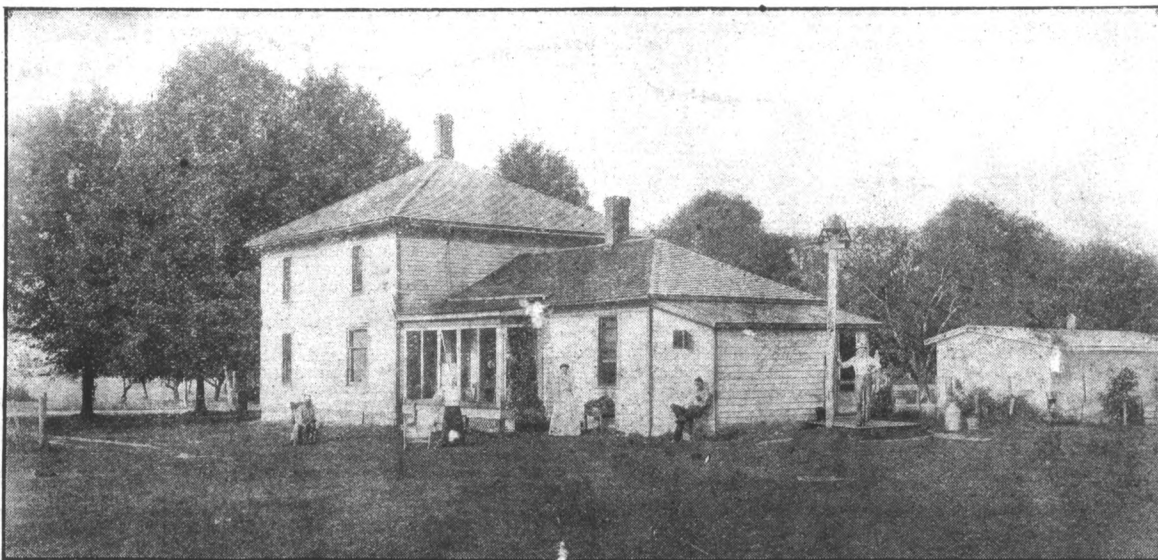
We may follow a regular rotation of crops and think a change unnecessary or undesirable and hence consider that our plans are laid, but even though we follow a general rotation there are so many crops we may substitute for any one in the rotation that there is almost infinite choice. Perhaps we can substitute a better paying crop for a poor paying one, or one which we need to feed on the

farm for one we do not, or one which takes less labor if our farm is large and help scarce, or one upon which we can put much labor and get better returns if our farm is small. We can keep more live stock or less live stock or a different kind of live stock, or perhaps we can plant more orchards and small fruit especially if our farm be small and a good market near and we have a large family to help pick it.

Then again there are many things to be done on most farms in the way of improvement, and we should lay our plans for these also. It is impossible to even state all of such things that



A New York Grain and Stock Barn (see description on page 26).



Well-kept Farm Home of W. Howe, Montcalm Co. A Closely Mown Lawn Makes an Ideal "Back Yard."

may need to be done; they will vary with the condition of the farm and buildings, but on every farm the following will need attention at some time:

Buildings will need repair and paint or perhaps another building will be needed this season or one enlarged. Now is the time to plan for such work if to be done next summer or even the next. If one has a wood lot he can get out much of the timber and have it seasoned before active operations begin. The stone can also be on the ground, cellars dug, etc. In keeping buildings in repair we can profitably remember that "A stitch in time saves nine." It is much easier to replace a stone in a wall and paint it up than to repair a tumble-down wall as it would soon be; it is easier to drive a timely nail in a board than to replace the whole board; to fix a loose hinge than to buy a new set of hinges and replace a broken down door; it is more economical to paint buildings one coat every four years than two coats every eight; and besides they will look much better.

Fences are another important object of winter planning. We should study

of the Michigan Farmer's offer to have catalogs and prices sent from leading advertisers before buying farm implements, seeds, trees or anything pertaining to the farm.

Another kind of work much of which we can now do as well as plan is the making of gates, stoneboats, log boats, markers, floors, stables, crates, manure scrapers, bins, boxes, cribs, wagon platforms and racks, or even boxes, feeding racks, wagon jacks, saw horses, sleds, hand carts, shelves in cellar, shed or kitchen, kitchen cabinets, etc., etc. Indeed, we can both work and plan these winter days and the two may go, and should go, hand in hand.

Calhoun Co.

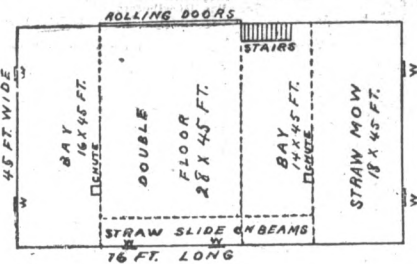
S. B. H.

A GOOD GRAIN AND STOCK BARN.

The barn shown in the first page cut, with plans of basement and main floor, was built by Stephen M. Becker, of Steuben Co., N. Y., on his 100-acre farm and is intended to have sufficient capacity above the basement for all the grain, hay, straw and other forage that the farm produces. The basement has room for six horses, and twenty cows, besides young stock, tools, vehicles, harness, grain, etc. It is customary in the east to run straw out of doors at threshing time, but this farm has sufficient width to raise the carrier inside, allowing the straw to drop on a slide where it is moved over to straw mow. The straw being directly over the horse stable, it is convenient to use for feeding or bedding in either the horse or cow stable.

The basement wall is ten feet high and

two feet thick, laid in sand and Portland cement. The frame from sills to rafters is sixteen feet high. It is sided with planed and matched pine, and is provided



with ample lighting. On its peak are four lightning rods with heavy conductors leading into the ground.

New York.

C. M. DRAKE.

SOME FORESTRY QUESTIONS.

My farm is located in Branch county, eight miles from the south state line. This was once a heavy timbered country, but the high land has nearly all been cleared, streams have been dredged, outlets to lakes opened and in some instances the lakes have been lowered, which has drawn the water away from much low ground timber, causing it to die. As on most farms the timber lot is located on low ground, if there should be any low ground on the farm, the rapid death of the timber and the flattering prices paid for all kinds of timber by the local factories and dealers, is robbing the country of what little timber there is left, and many farmers are beginning to sense the fact that we must raise timber or be without. I have 300 catalpa seedlings I wish to set next spring and expect to set them on damp soil that used to grow black ash, elm and swamp oak. Land is cleared so can be cultivated. Does cottonwood grow from cuttings? If so when should they be cut and how managed. I would like to get some timber started in the thin places in my woodlot. Cottonwoods are not very plentiful here, but where one can be found they make a rapid growth. Does Carolina poplar grow from cuttings? If so, how managed, and for what use is the timber valuable? I have some catalpa seeds I wish to plant next spring. Will you tell how to manage them?

Branch Co.

WM. WALBRIDGE.

It is a most significant fact, as expressed by the inquirer, that the "flattering price" paid for all kinds of timber by local factories and dealers is robbing the country of what little timber there is left, and many farmers are beginning to sense the fact that we must raise timber, or go without.

In Branch county the Catalpa may do fairly well, but in general it is not advisable to use the Hardy Catalpa for Michigan planting. It is a tree belonging

properly to Indiana, Ohio, Illinois, Iowa and the south. The experience with it in Michigan, save in very protected localities, is one of disappointment. A yearly freezing back of the season's growth is the rule, and usually this damage is severe, amounting to one-half to three-fourths of the year's growth. Such work ruins the form of the tree for timber or posts and sets back the "much promised" rapid growth.

Large quantities of this tree have been sold thruout the state to farmers during the past two or three years at most exorbitant prices, usually ranging from \$15.00 to \$30.00 per thousand. This same stock should not cost more than \$5.00 per thousand, and may be procured of the Forestry Department of the Agricultural College at \$3.00 per thousand.

Soil such as has grown black ash, elm and syamp oak will grow catalpa, which requires the best soil of the farm. For this state, such land, if fitted for farm crops, might better be planted to Carolina poplar, which grows readily from cuttings, and which costs \$1.50 per thousand, or trees one year old from cuttings at \$5.00 per thousand.

Catalpa seed is sown in drills or rows and swamp oak will grow catalpa, which is firmed. The proper time for sowing is the last of April. The rows should be far enough apart to enable a horse cultivation. After the seed comes up, thin to one seedling per inch. Keep cultivated during the season. Stock is more economically planted at one year old.

There is considerable confusion in the use of the names cottonwood and Carolina poplar. If by "Cottonwood" is meant populus deltoides, or the large leaved aspen, then the Carolina poplar is a horticultural variety of it, and for woodlot use there is practically no difference as to rate of growth or timber value.

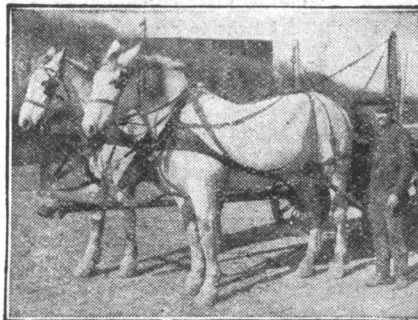
This tree is best suited to rather low, alluvial river flats, but readily adapts itself to lighter soils, which contain a plentiful supply of under moisture.

Cottonwood has yielded twelve inch logs in fifteen to twenty years. First grade lumber sells for about \$20.00 per M. board feet.

Agricultural College.

J. F. BAKER.

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KEEPING A FARM ACCOUNT.

With the beginning of the new year it is quite generally known that merchants take an inventory of their stock. This is done that they may ascertain what their profits have been for the past year and on what line of goods they have made the most profit. If after taking an inventory he finds that a certain line of goods have not sold well or that he has been making no profit on them he will usually use his efforts to making that particular line more profitable or else he will gradually drop it for some more profitable line.

If all farmers were as particular in keeping an account of their farming operations and in taking an inventory of their property as merchants are there would be a revolution in the farming operations of a large portion of the farmers. But they go on from year to year without knowing whether they are making any money or not, or if so they do not know what particular branch of their farming operations is bringing them the profit or which is being pursued at a loss.

If merchants would pursue this course they would soon be forced "to the wall," but farming permits of more laxity along these lines than almost any other business for the reason that the farmer's living comes from the farm and he usually gets that much without much effort, but if the same care was exercised in finding out just what branch of our farming was netting us the most profit, as the business man exercises in trying to find out the most profitable line in his business, and we then would bend our efforts to making this particular branch still more profitable, we would hear less often that "farming don't pay."

It may at first seem like a large undertaking to keep an accurate account of our farming operations, but, after one has become accustomed to it, it becomes a part of the day's work to sit down at night and make a note in our books of our receipts and expenses for the day, how much time has been expended on the various crops during the day, the value of fertilizers used on the crop, etc. There are several advantages to be derived from keeping an accurate account of our farming operations which will present themselves nearly every day in the year. For instance, if any money has been expended during the day it is entered on the expense account and should any question arise as to whether it has been paid or not all one has to do is to turn to his expense account and find it. It acts as a sort of a receipt for all debts paid and all money received. Then many times one is in doubt as to just what date a certain transaction was made, or perhaps it may be the cost of some article purchased some time ago; then all one has to do is to turn to his books and he has the facts before him.

While one can be as elaborate in his methods of book-keeping as may suit his fancy, yet it is usually better to make it as simple as possible. The taking of an inventory may seem like a large undertaking if one has never taken one but after one gets started it actually becomes a pleasure, and while we may err somewhat in our judgment as to the value of certain articles, yet we can at least reach approximate estimates and after having once taken an inventory the task will not be so difficult next time. While it makes no difference at what time of the year the inventory is taken, so long as it is taken the same time each year, yet the writer has always followed the plan of taking it at the beginning of the year for the reason that there is usually more time and it is not as apt to be neglected as when left until later, altho there are some advantages in not taking it until, say about the first of April. Then, usually all grain has been marketed, stock sold and there is not so much hay and grain left so that it is somewhat easier to take it at this time. But with the rush of spring work it is quite apt to be neglected at this time, so it is safer to take it at the beginning of the year, even tho one cannot get quite so close an estimate of things. In taking an inventory it is always best to have some method about it so that it can be followed year by year. First, the value of the farm can be estimated; then the farming implements; then the stock, hay, grain, furniture, etc. After it has been taken once it is not so difficult to take it again as one has the old inventory to go by somewhat. Knowing the value placed on the farm or any other property last year, all one has to do is to note whether any improvements have been made or whether it has deteriorated

in value, owing to usage, etc. If more farmers would keep an accurate book account it would be a step in the right direction towards increased profits in their farming operations.
Livingston Co. C. C. O.

TREATMENT OF HARD, HEAVY CLAY FOR SUGAR BEETS.

What is lacking in clay (meaning hard clay), that sugar beets need? The plant won't do well even when clay is well manured.
Tuscola Co. J. McCracken.

It is a very difficult matter for a man to tell another man what to do with any kind of soil on his farm where the one trying to give the information has never had the opportunity of making a personal investigation. It is a good deal like a physician trying to prescribe for some ailment where he has not the opportunity of making a diagnosis of the case or of a veterinarian prescribing under similar circumstances. In all cases it is unsatisfactory and many times dangerous to give advice because a personal examination might make an entirely different case out of it. Of course a physician might be warranted in prescribing for the headache in a general way because it is well known that headache is usually produced by improper eating, poor digestion, or something of that sort. And so, too, a veterinarian might be warranted in telling a man a remedy for a ringbone, or for colic in horses, because the same remedy would be almost universal in these cases. But this can only be warranted in well known diseases and where a general treatment is applicable, and so it is in trying to tell what is the matter with Mr. McCracken's clay soil. He says if it is well manured it doesn't respond to sugar beets. Sugar beets don't do well, and of course he wants to know the reason why. Now it might be the season. If the season is a little too dry on clay, nothing will do well. It may be that this clay soil lacks humus and yet if it is well manured with stable manure, this would correct it. If the clay is inclined to puddle, if it is worked a little too wet, it is a pretty good sign that it needs some lime. Lime has a wonderful effect upon hard, tenacious clay to make it more pliable and I am inclined to think from his description that a good dressing of lime, say at the rate of 20 to 40 bushels per acre, would improve the mechanical condition of this hard clay so that beets would do well. I would also recommend the application of 500 to 1,000 pounds of good commercial fertilizer per acre, sown broadcast before sowing the beets.
COLON C. LILLIE.

THE ENGLISH SPARROW.

Some time ago the writer noticed several articles in a Detroit paper in defence of the English sparrow on account of their usefulness in protecting trees against the onslaught of injurious insects. It is well known by farmers that the English sparrows are mainly grain eating birds. They eat whole or parts of grain, some grass, and in the spring the tender parts of fruit buds. They do for a short time during the early stages of their young, feed them on soft bodied insects, such as garden worms and the like, but the writer has never seen them making use of insects of any kind at any other time. This is the only thing to their credit. Aside from this their general characteristics condemn them. The most injury they do is by taking forcible possession of the nests of some of our most useful birds, such as swallows, blue birds, and wrens and driving them away. The writer has often seen them while in the act of taking possession of the nests of those birds. Remembering in particular of one instance when he observed a couple of sparrows and a pair of blue birds engaged in a desperate battle to gain the possession of the blue birds' nest, after they had subdued the bluebirds and driven them away, they took possession of their nest, threw out four newly hatched blue birds and one of the sparrows immediately began to get more material to remodel the nest for their own use, while the other stood on guard to repel the occasional return of the blue birds. It is a deplorable fact that, just in proportion as the sparrows increase in numbers, those most useful birds decrease.

The English sparrow is a bad citizen and the other birds are finding it out. Here is a case clearly showing that the survival of the fittest are not always the best.

Livingston Co.

C. F. GRIEB.



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And it is all played as loud and clear and true to life as the Victor only can play it.

There is no other instrument like the Victor—it is the only perfect talking-machine. It is besides the greatest musical instrument in the world.

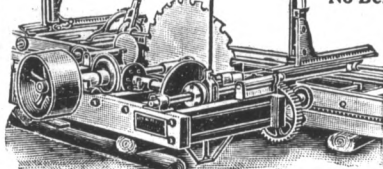
Look for the Dog on every Victor and Victor Record



A complete list of new Victor Records for January will be found in the January number of Munsey's, Scribner's, McClure's, Century, Everybody's, Current Literature and February Cosmopolitan.

Get This Money Making American

We have a size to suit your power and requirements. Get one of these guaranteed outfits now. Lumber is high. The mill will soon pay for itself. No experience needed. No Belts, Springs or complicated parts to get out of order or cause trouble. The sawer has complete control of Variable Friction Feed with one hand; slight motion of lever changes speed. Other time and labor saving devices enable this mill to saw more lumber with less power and less help than any other. Free Mill Book explains and lists our complete line of wood working machinery. Write for it today.



128 Hope St., Hackettstown, N. J. 1569 Terminal Bldgs., New York

SAW MILL

THE FROST WIRE FENCE

is the biggest fence value ever offered. It is the original Coiled Spring Wire fence. Made from High Carbon Steel and guaranteed to withstand wind, storm, rain and ice. Lasts a lifetime, always stays tight. Most durable and economical fence to buy and safest for high bred stock. Woven at factory or erected on your farm. Frost Steel Gates add materially to the beauty of your farm. Write for Free Catalog describing Fences and Gates.

THE FROST WIRE FENCE CO.
DEPT. C, CLEVELAND, OHIO

"Jubilee Year" of Page Woven Wire Fence

Page Fence is now in its Quarter-Centennial or "Jubilee Year." It is the Pioneer Woven Wire Fence, having had 10 years the start of all competitors. It leads today in sales and in satisfaction. Admitted by all to have double the strength, life and elasticity of any other fence. Used as the Government standard of highest quality and by many foreign Governments. Supreme throughout the world. "Jubilee Edition" of the Page Catalog has just been issued. A copy FREE to you if you write promptly. PAGE WOVEN WIRE FENCE CO., BOX 15D, ADRIAN, MICH

BROWN FENCE

We make an extra heavy fence in which every wire—both strand and stay—are No. 9 gauge. These fences are made of the best fence material in the world—Hard, High Carbon "Double Strength" Coiled Spring Steel Wire, thickly galvanized. A more substantial and durable fence was never stapled to posts. 15 to 35c per Rod delivered—We pay freight. Send for our free sample and catalog showing 150 styles of fences. Send today.

THE BROWN FENCE & WIRE CO., Dept. 49 CLEVELAND, OHIO.

SAMPLE FREE

LIVE STOCK

PORK FROM A BUSHEL OF CORN.

For a long period of time there has been a general inquiry as to whether it is possible to ascertain the amount of pork that can be made from a bushel of corn. I have often been surprised that men of ordinary intelligence do not see farther than the query would indicate that they seem to. There are so many varying conditions surrounding the hogs, and the capabilities of the different hogs vary to such an extent, that to undertake to answer the query, in exact numbers, must of necessity be an impossibility.

The Condition of the Corn.

In the first place, the intrinsic feed value of corn varies greatly according to the condition, whether partially, or fully matured. It certainly ought not to be expected that whole corn will produce as much meat as that which has been ground. Notwithstanding the fact that hogs relish whole corn, the inability of mature hogs, at least, to thoroly masticate it and put it in such a condition that all the nutrient elements can be extracted from it by the process of digestion, makes it certain that there must be a difference as to whether corn is fed whole or is ground finely so that the gastric juices of the stomach and the intestinal juices can act upon it, and gather all the nutrients that it contains.

And then again, corn meal fed alone is liable to adhere together so closely that the gastric juices cannot penetrate the mass and get hold of all the particles to extract the nutriment. If it is mixed with something that will increase its bulk, and separate the particles, more can be expected and received from it than if fed alone. Then we must conclude that the amount of meat which it is possible for a hog to make from a bushel of corn depends not only on the quality of the corn, but as well on the manner in which it is fed.

A Difference in Hogs.

It must also be conceded that there is a wide difference in hogs. The long, narrow, razor backed, light hammed, long legged, and long snouted hog, can not be expected to make as much meat from the feed which he eats as the compact, short faced, short necked, broad backed, heavy hammed hog, that has short legs and a quiet disposition. There is such difference between the capabilities to lay on fat by the nervous, restless animal, and the quiet, contented one, that those things should be given due consideration.

Then the age of a hog has something to do with what he is capable of doing in the way of laying on flesh. The digestive organs are in better condition with a pig than with an old hog, hence he is able to get more from a given amount of feed than the old animal that requires so much feed to sustain life that his digestive organs can not make as much from the feed and lay it up in the body. And farther, it is nature's plan for the young animal to grow and to make muscle and vital organs while growing, hence they accumulate weight faster from the amount of feed than the older animal that is simply laying on fat.

If one should undertake to answer the question as to how much pork a hog can make from a bushel of corn, he could well answer as did an Irishman when asked how many rails he could make from a rail cut, "It makes a difference. Things vary."

There seems to be a general impression among those who raise hogs on a large scale that the average store hog, if well fed, will gain about seven pounds in the winter time on a bushel of corn alone, and from ten to twelve pounds in summer, if allowed some clover or grass. The range of possibilities is wide, as conditions and individual animals vary so much. It is safe to say that it requires good management, favorable conditions and a good class of stock, to make much profit by feeding hogs at the present prices for grain and pork meats on foot, or by the carcass.

Mingling Corn with Other Feeds.

It is a mistake if one wishes to get the most from their corn to feed it as the sole source of support. When fed alone it is not a perfect or well balanced feed; it does not carry enough of the bone, muscle and vital organ forming elements to keep up a harmonious development of the animal system, consequently, as the system cannot utilize all the carbohydrates in the corn feed, there is a waste

in that direction and a lack in the other.

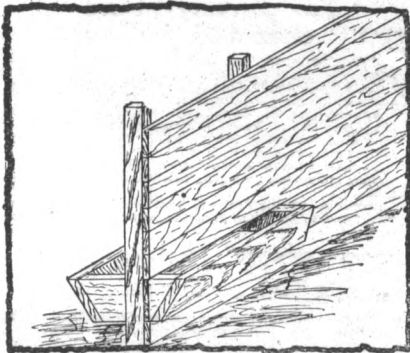
It has been found by experience and experiments, that when corn meal is mixed with an equal amount of wheat middlings that the increase from a hundred pounds of the mixture is increased, nearly doubled, and consequently the cost is diminished. It is safe to calculate that if a variety of feeds are used the cost of the increase in weight is diminished, and the amount of pork that can be produced from a bushel of corn can be greatly increased. If from 7 to 10 pounds can be realized on a bushel of corn alone, by the mixture of cheaper feeds, such as middlings, June clover, and alfalfa, we can expect to produce from 15 to 20 pounds of pork, live weight, from a bushel of corn.

Wayne Co.

Doc. JOHNSON.

A HANDY HOG TROF.

On many farms, the wife, daughter or son is left to carry the kitchen slop to the hogs. Three or four large hogs will usually make a man spill more or less slop, if fed in the ordinary open trof, also say things that he would not care to hear the boy say. By constructing the trof as shown in the illustration, this trouble will be avoided. As shown one side of the trof extends thru the fence for about three inches, and the space above is boarded up tight, that is, all cracks are made so small the hogs can



not get their feet or noses thru, the attendant can then pour the slop in and the hogs can not get to the pail to push it around and possibly spoil his Sunday trousers. By boring a one inch hole in one end and fitting a wooden plug in, the trof may be easily washed and cleaned. This trof is inexpensive and easy to construct, and will save the attendant much trouble.

Missouri.

A READER.

THE HORSE IS KING.

Let no one imagine that the horse is soon to become an object of curiosity. Bicycles, and tricycles have come and gone, and the automobile has been making considerable noise the past few years and cutting up capers and people, while the horse has been quietly sawing wood, or rather eating oats, until now the farmer with a pasture full of the right kind of horses can sell them and buy a bank. Horses have been steadily going up, which is much better than blowing up, as the automobile has been doing.

Automobiles will come and go, may puff in and speed out, but his majesty, "The Horse," remains monarch of the road against all competition. No machine ever built or still uninvented will successfully dispute his reign. He has withstood the locomotive, merely permitting him to do the heavy work, and give him an easier life. Inventions will crop up from time to time, but none will dispute his place in people's hearts for always. Excepting the human race, the horse is the most beautiful thing made of flesh and blood; and perhaps the human animal scarcely deserves to be excepted, when we consider how many men and women deform their beauty by foolish habits. Horses we may have as nature made them, only improved and refined by scientific breeding. You may depend on it, good horses, especially good carriage, draft and saddle horses will always be in demand. Buyers are today searching the country for good horses of all kinds, and are offering thirty per cent better prices than were offered a few months' ago. Very recently the opinion prevailed that the horse industry was on the high road to extinguishment from neglect, but this has been abated by the revival of common sense, which proves to us that while human beings inhabit the globe, the love of God's noblest animal, the horse, will continue to demonstrate itself for his improvement.

Fashionable horse shows are frequent

all over the country, extraordinary inducements being offered for fine animals, and I see in this and other facts, signs of increasing interest in the horse beautiful, with an attendant interest in breeding.

Another important factor to be considered is the foreign demand for American horses, which is increasing at a phenomenal rate, ship loads of horses being exported weekly. England, Germany, France, Scotland, and in fact, all Europe concedes that America and Canada can raise better horses for less money than any other country in the world, and Europe may be depended upon to take all the surplus stock in the country at fair prices. Haphazard breeding has been the order of the day among breeders. They have been careless and bred without a purpose. These days have now passed, the numerous stock and horse shows have enlightened the breeders of the country to take forethought enough to control by proper breeding, the quality of the stock required by the horse markets of the world.

I will say that I am not afraid that the horseless days are upon us, the automobile flying thru the country notwithstanding; and not while the automobile remains blind to your actions of kindness and dumb to the sound of your voice, nor while the horse is the delightful company he is, whether in the stables, under the saddle or in the harness; certain it is that as far back into the ages as we can trace his association with human beings, the horse appears as the friend and intimate companion of man.

He steps down the ages decked with the flowers and wreaths of love, poetry, romance and chivalry, no less than with the stern trapping of heroism and war. Illinois.

J. W. GRAND.

SORTING THE FLOCK.

The prevailing price of both grain and roughage this year is causing a large number of flock owners to sort their flocks very closely thinking perhaps they can dispose of their farm grown products at a greater profit than thru feeding them out to their sheep. It is of course always advisable to get rid of unprofitable animals but it is not a prudent move to sell desirable live stock off the farm simply because there appear an immediate margin of profit between feeding it on the farm and selling the feed upon the market. While it may seem at first consideration that sorting the flock down to a few animals is an advisable move and an easy way to make money, in reality it is a short-sighted venture and one that in the course of a few years will not only result unprofitably but further deplete the productiveness of the land upon which the sheep should be maintained.

It is quite a common practice among flock owners to delay sorting the flock until late in the season. This is an excellent practice, because after the fall work is out of the way and crops generally secured one is in a better position to accurately estimate the amount of roughage and grain on hand and the amount that will be required to winter the stock on hand.

When the roughage and grain grown upon the farm is fed out to sheep during the winter a large amount of very valuable manure can be made and returned to the land. As a general rule flock owners do not pay enough attention to this part of sheep raising on the farm. They simply figure what it will cost to maintain the flock and the profits returned in the way of dollars and cents. The financial side of sheep raising should of course receive the first consideration, but the relation of maintaining sheep upon the farm to soil fertility should also be considered. If the roughage and grain produced upon the farm can be converted into wool and mutton at market price, the manure produced and returned to the soil will add to the producing power of the land that will be noted in the first crop grown upon the soil where the manure is spread.

It requires about as much labor to care for a few sheep as it does a large flock, consequently if the flock is sorted down too closely the profit is much less for the amount of labor involved. Where suitable arrangements are properly made for handling sheep I know that a flock of fifty or sixty ewes can be cared for practically as cheaply in so far as the labor is concerned as a flock of twenty. Therefore the sheep owner who is endeavoring to eliminate the work of caring for a flock of sheep could better afford to dispose of his entire flock than to sort down to a few head.

Shiawasse Co.

LEO C. REYNOLDS.



Afraid of Ghosts

Many people are afraid of ghosts. Few people are afraid of germs. Yet the ghost is a fancy and the germ is a fact. If the germ could be magnified to a size equal to its terrors it would appear more terrible than any fire-breathing dragon. Germs can't be avoided. They are in the air we breathe, the water we drink.

The germ can only prosper when the condition of the system gives it free scope to establish itself and develop. When there is a deficiency of vital force, languor, restlessness, a sallow cheek, a hollow eye, when the appetite is poor and the sleep is broken, it is time to guard against the germ. You can fortify the body against all germs by the use of Dr. Pierce's Golden Medical Discovery. It increases the vital power, cleanses the system of clogging impurities, enriches the blood, puts the stomach and organs of digestion and nutrition in working condition, so that the germ finds no weak or tainted spot in which to breed. "Golden Medical Discovery" contains no alcohol, whisky or habit-forming drugs. All its ingredients printed on its outside wrapper. It is not a secret nostrum but a medicine OF KNOWN COMPOSITION and with a record of 40 YEARS OF CURES. Accept no substitute—there is nothing "just as good." Ask your neighbors.



GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

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.

Bony Growths

ruin horse values. You can remove all abnormal growths, leaving no scar or blemish, with the old reliable

Kendall's SPAVIN CURE

Horsemen using it 10 to 40 years say it has no equal as a cure for Spavin, Ringbone, Curb, Splint, Lameness.

"I have used Kendall's Spavin Cure for fifteen years and it never fails." C. D. Forshee, Billingsley, Ala.

\$1 a Bottle; 6 for \$5. At all druggists. Get it and be ready for emergencies. Book, "Treatise on the Horse," free at drug stores or from Dr. B. J. Kendall Co., Enosburg Falls, Vt.



WAGON SENSE

Don't break your back and kill your horses with a high wheel wagon. For comfort's sake get an

Electric Handy Wagon.

It will save you time and money. A set of Electric Steel Wheels will make your old wagon new at small cost. Write for catalogue. It is free.

ELECTRIC WHEEL CO., Box 58, Quincy, Ill.

ICE WATER FOR STOCK.

All stock at all time should be supplied with a plenty of good, pure water where they can help themselves to it. Water is something that is essential to the system, and animals must have it. All foods contain some water, but not enough, and the amount of water that is needed depends upon the food eaten, and various other things. The rule should be to have a plenty of water where the stock can help themselves and they will take the correct amount.

Stock needs to have water in winter as well as in summer. Of course not as much is needed, but water they must have. There is a certain amount of water which goes into the system and is demanded by it every day in the year.

The best water that we can have for stock at all seasons is fresh well or spring water. This is fresh and the right temperature. It is cold enough in summer, for ice water is not good even then for anyone and the fresh water is warm enough in winter. There is nothing like fresh, pure water for man or beast.

To have to go to the pond and chop the ice is not a very good way to water the stock on cold days. Taking ice water into the system in zero weather is not comfortable afterwards. I remembered this when one night last winter I rode over to see a neighbor, and before starting home I took a drink of water, and it seemed to chill me thru all the way home, and I thot of the way much stock in our country had to drink ice water and suffer for the whole day.

I like to water stock with fresh water from the well, and so do not pump the water until the stock will drink it, and then do not figure on pumping any more than the stock will drink, but be sure to give them all they want to drink. I believe this gives them water in the most humane way in winter that we can give. This is the kind of water I like to drink in summer and winter.

I doubt if there is much in heating water in winter for stock except as it is necessary to take the chill off. We know that hot drinks are good for us on some cold days, and notice that some report gains in milk production when the water was warmed. I think warmed water for stock far better than ice water, but I like to drink fresh well water any day of the year, and there is something in water being palatable for stock.

If stock are supplied with ice water in cold weather they will not drink near as much as they should. The system has not its required amount of water, and yet the stock is freezing from what they drink. Stock need comfort all around and need to have comfortable water to drink.

Missouri. E. J. WATERSTRIFE.

MEAT CONSUMPTION IN LEADING COUNTRIES.

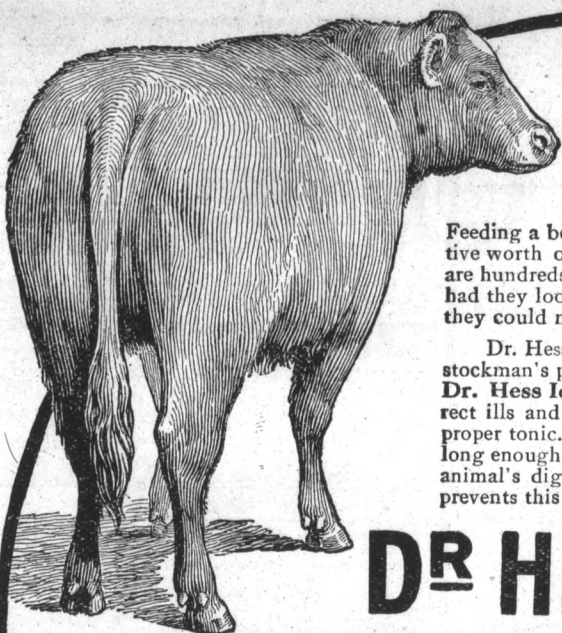
Statistics with regard to the consumption of meat in foreign countries as compared with the United States show the following comparisons: The per capita consumption of meat in Germany in the calendar year 1904 was 108.5 pounds, the statement undoubtedly being confined to the dressed weight. The average declined to 101.1 pounds in 1905, and to 98.7 pounds in 1906, horse and goat meat in each of the three years being together about 2 pounds. The pounds of meat consumed in Germany declined from 6,445,000,000 in 1904 to 6,028,000,000 in 1906, and in the meantime the net imports increased from 367,000,000 to 499,000,000 pounds. The per capita consumption of meat in the United Kingdom is 121.3 pounds; in France, 79 pounds; in Italy, 46.5 pounds; in Australia, 263 pounds; New Zealand, 212 pounds; Cuba, 124 pounds; Sweden, 62 pounds; Belgium 70 pounds; Denmark, 76 pounds. The foregoing figures stand for the weight of dressed meat, and the United States compares with the countries mentioned in having a per capita consumption of 185.8 pounds of meat in terms of dressed weight.

A GOOD PIG RECORD.

As I am much interested in hogs and have seen several pig records in the Michigan Farmer I thot I would send in one. This pig was farrowed March 28, 1908, and was killed Dec. 15, 1908, making her 262½ days' old. She weighed 355 pounds, live weight, and dressed 305 pounds without the heart and liver, and I got 10 gals. of lard from her. How is that for a spring pig?

Kalamazoo Co.

A SUBSCRIBER.



Get the Good Of Your Feed

Feeding a beef animal is one thing—getting the whole nutritive worth of your grain and hay is another. Many feeders are hundreds of dollars poorer to-day than they would have been had they looked to it that their stall-fed steers got only what ration they could most fully digest and completely assimilate.

Dr. Hess (M. D., D. V. S.) is a practical stockman. Increasing the stockman's profit by increasing digestion has become known as "The Dr. Hess Idea." Dr. Hess believes that nature can be assisted to correct ills and to work out best results in every instance, by the use of a proper tonic. Every man of experience knows that heavy feeding, continued long enough to "fit" a steer, often defeats its own purpose by upsetting the animal's digestion. "The Dr. Hess Idea" worked out in daily practice prevents this and relieves all the minor stock ailments.

DR HESS STOCK FOOD

given in small regular doses in the grain rations, twice a day, strengthens animal digestion, so that the largest proportion possible of food is taken into the blood and sent to maintain and upbuild bodily tissues. It contains not only bitter tonic principles for the digestion, but also iron for the blood, and nitrates necessary to cleanse the system. It makes a milch cow increase milk production, a fattening steer or hog fit rapidly and economically, and puts a horse in the pink of condition.

Dr. Hess Stock Food by improving the appetite increases the consumption of roughage and by increasing digestion lessens the amount of nutrition wasted in the manure. Sold on a written guarantee.

The dose of Dr. Hess Stock Food is small and fed but twice a day.

100 lbs. \$5.00
25 lb. pail \$1.60

Except in Canada and extreme West and South.
Smaller quantities at a slight advance.

DR. HESS & CLARK,
Ashland, Ohio.

Also Manufacturers of Dr. Hess Poultry Pan-a-ce-a and Instant Louse Killer.

Free from the 1st to the 10th of each month—Dr. Hess (M.D., D.V.S.) will prescribe for your ailing animals. You can have his 96-page Veterinary Book free any time. Send 2c stamp and mention this paper.

DR. HESS POULTRY PAN-A-CE-A

Poultry keeping is good business if you know the secret. You can't confine a hen, feed her heavily and get your money back, unless you keep her digestive apparatus in good running order. The one way to do that is to give regular small portions of Dr. Hess Poultry Pan-a-ce-a once a day in soft feed. Dr. Hess Poultry Pan-a-ce-a is a guaranteed egg producer. It is a tonic—not a ration. It contains elements which aid digestion, make good blood, and free the system of poisonous dead matter. It is "The Dr. Hess Idea" that poultry can be kept healthy, active and prolific, even under the unnatural conditions resulting from confinement, and his Poultry Pan-a-ce-a proves his theory true. Poultry Pan-a-ce-a is endorsed by poultry associations and is sold on a written guarantee. A penny's worth feeds thirty hens one day.

1½ lbs. 25c, mail or express, 40c; 5 lbs. 60c; 12 lbs. \$1.25; 25 lb. pail \$2.50. Except in Canada and extreme West and South. Send 2c for Dr. Hess 48 page poultry book, free.

INSTANT LOUSE KILLER KILLS LICE

ALWAYS GOES THE WHOLE ROUTE

In buying an automobile consider first cost, but hesitate longest to investigate upkeep and economy of fuel consumption. Buy a car where you can hold the maker to this guarantee. Insist on records of durability and the evidence of thousands of users' endorsements. We invite comparison of our catalogs—books—testimonials—which you can have for the asking. Write for them. But above all compare our factory facilities—expert workmanship—experience and the highest quality of every part of

The Invincible Auto-Runabout SCHACHT

with all others of this style car. Write us and investigate the meaning to you as an owner of a car like the Schacht. Full 18-20-horse-power—gearless—clutchless—Timken roller bearings throughout—easy riding long "Concord" springs—high, solid cushions, Goodrich rubber tires for economy of upkeep on all roads—Schebler carburetors, etc.—Full high class equipment found only on high priced cars. The Schacht is the easiest to run, simplest, most practical, most economical car you can buy—Let us show you all the reasons why. Write for literature. If interested as an agent—let us make you our Special Proposition.

We will exhibit at the Chicago Show February 6 to 18.
THE SCHACHT MANUFACTURING CO., 2718 Spring Grove Ave., Cincinnati, O.



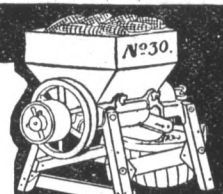
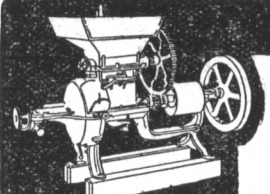
SCIENTIFIC POWER MILLS

GRIND EAR CORN, SHELLED CORN, WHEAT, OATS, BARLEY AND RYE INTO MEAL, FLOUR, OR FEED. THEY ARE SIMPLE, STRONG, EFFICIENT AND OF UNEQUALED QUALITY AND CAPACITY

SUITABLE FOR ENGINES OF ALL SIZES. SOLD BY DEALERS EVERYWHERE

Catalogue Free

THE FOOS MFG. CO., Box 137, SPRINGFIELD, OHIO



Get My Price The Lowest Ever Made

On a First-Class Manure Spreader

Yours to Try Free
30 Days—Freight
Prepaid

Let me tell you something. I'm making a quotation on the Galloway Wagon Box Spreader so low that farmers all over the country are taking notice, and sending in their orders while they can get them at this figure. The name—

GALLOWAY

is a guarantee of manure spreader excellence all over the United States—and every one of my Spreaders is backed by my \$25,000 Gold Bond.

Here are four things to remember in connection with the Galloway: 1. It's the only successful wagon box spreader in the U.S. 2. It has 7 distinct, separate, original patents. Nothing else like it—or as good. They alone make it worth \$25 to \$30 more than any other. 3. My own Factory turns 'em out—capacity, Seventy Complete Spreaders a day. 4. I make you a price that sells them. That price is the lowest ever made on a first-class Manure Spreader. But before you risk one cent on my Spreader I send it to you to try 30 days free.

The Galloway Wagon Box Spreader fits any truck

The Wm. Galloway Co., 649 Jefferson St., Waterloo, Ia.

My NEW Roller Feed Spreader.
Greatest thing in the spreader line today



\$25,000 Guarantee

or high-wheel wagon, and is made in 4 sizes, up to 70 bushels. My big, Free Spreader Catalog and my Special Red Hot Proposition are waiting for you—Spend a cent for a postal today and get your name to me at once. I'll make you the lowest price ever offered on a first-class Spreader—Freight all paid—and show you how to clean up \$50.00 clear cash profits. Write me personally—TODAY.

Wm. Galloway, President

60 CENTS postpaid
with Nose & Ear Blades

Never Root and Ear Marker
Stops all hogs rooting; gauges back of adjustable blades insure good job, Ear Marks and numbers all stock.

SAVES PIGS and LAMBS.
Easy to use. Holds any hog with two fingers.
PIG FORCEPS

75 CENTS postpaid
HOG HOLDER

W. L. SHORT, BOX 110, QUINCY, ILL.

Both articles guaranteed

6 Days' Treatment Free

If you have never used



Dr. Fair's New
Cough & Heave
Remedy

Let me send you six days' treatment on approval. I want to convince you that my new remedy always relieves a cough and seldom fails to cure heaves. If the results are perfectly satisfactory I know you will be glad to send 25 cents.

W. C. FAIR, V. S., Proprietor,
DR. FAIR VETERINARY REMEDY CO.,
571-5714 Carnegie Avenue, Cleveland, Ohio.

Shoe Boils, Capped
Hock, Bursitis
are hard to cure, yet

ABSORBINE

will remove them and leave no blemish. Does not blister or remove the hair. Cures any puff or swelling. Horse can be worked, \$2.00 per bottle, delivered. Book 6 D free. ABSORBINE, JR., (mankind, \$1.00 bottle.) For Boils, Bruises, Old Sores, Swellings, Gout, Varicose Veins, Verrucae, Itch, Allays Pain. W. F. YOUNG, P.O.F., 63 Monmouth St., Springfield, Mass.

THE LIVE STOCK MEETING.

As announced in the Live Stock Department of our issue for Dec. 26th, the eighteenth annual meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association will be held at the Michigan Agricultural College on Jan. 12 and 13, 1909. The official program for this meeting is now out and should be in the hands of every interested live stock breeder and feeder in the state. Simply drop a postal card to A. C. Anderson, East Lansing, Mich., Secretary of the Association, and get a copy of the program.

In addition to the features of the general meeting which were mentioned in the published notice above referred to, there should be a large general interest in the several breed meetings to be held at the same time and place. These include the Michigan Horse Breeders' Association, at which those interested in the breeding of good horses will be organized for the future benefit of the industry, the Michigan Shorthorn Breeders' Association, the Holstein Friesian Association of Michigan, the Michigan Jersey Cattle Club, the Michigan Guernsey Cattle Club, the Michigan Red Polled Breeders' Association, the Michigan Merino Sheep Breeders' Association, the Michigan Oxford Down Sheep Breeders' Association, the Michigan Berkshire Association, the Michigan Duroc-Jersey Breeders' Association, and the Michigan Poland China Breeders' Association. All of these several associations will hold meetings at practically the same hour, on the afternoon of Tuesday, January 12, in the places assigned to them in the different buildings about the campus, as noted in the printed program.

Following this there will be a union meeting of all Sections, which will convene at 5 o'clock in the College Armory, for a general conference on two very important and much dreaded diseases among farm live stock, namely, "The Present Status of Hog Cholera Prevention," the discussion of which will be led by Dr. C. E. Marshall, of M. A. C., and "Contagious Abortion Among Cattle," the discussion of which will be led by Director R. S. Shaw, of the Michigan Experiment Station.

Following this the State Board of Agriculture and the Faculty of the Agricultural College will serve a luncheon to the visiting live stock men on Tuesday evening, January 12th, at 7:30 p. m., in the dining hall of the Women's Building. Those who expect to attend so as to participate in this luncheon are asked to notify Secretary A. C. Anderson, East Lansing, Mich., of their intention to be present, on or before January 8th, if possible, so that adequate preparations may be made for the event.

The live stock men of the state should have a general interest in this series of meetings, as well as in the general meeting which was outlined in the notice above referred to, and should, by their attendance, make it the best ever held during the eighteen years in which the Stock Breeders of the state have been organized.

One of the leading live stock commission firms doing business in the Chicago stockyards has been receiving a great many answers to inquiries regarding the numbers of cattle on feed, and it says that the tenor of the replies leads them to believe that there will be enough cattle to supply the beef demand. They say there are more cattle on feed in many sections than they had been led to believe at first, and they add that a good many more are being started or will be started shortly. As the greater part of these are and will be short fed, it will not be very long before these cattle will be ready to be marketed as fat beefs. The firm adds: "It is obvious that a good many short feeds will send in as many cattle to market as would come if a larger number were put on feed in the fall and winter months and given a long feed."

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Has four times the strength and double the durability of ordinary windmills. Defies the worst storms, and even a cyclone won't damage the sturdy Samson.

Double Gears and Center Lift

Is the secret of the Samson's superiority—they lessen the wear and tear and prevent racking side strain.

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THE MICHIGAN FARMER.

JAN. 9, 1909.

Johnston

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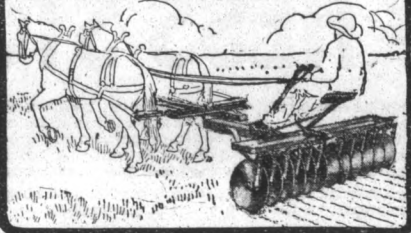
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With this disk harrow the farmer can do the work of a plow, and finish work a plow cannot do. Made in eight widths from 4 ft. 4 in. to 13 ft. and every size tills the entire width of cut, cutting and pulverizing thoroughly all soil.

Works up the soil into a perfect seed bed. Cutting angle always under driver's control.

Special convex center bumpers take care of end pressure, and make this the lightest draft disk harrow manufactured. Disks are hard to nick, being made of highest quality of tough steel. Write today for our 1909 Library describing all the Johnston farm tools.

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has cured thousands of cases and will cure yours if you will give it a trial. Try it now. Don't delay. Send me one dollar and I will mail you at once the treatment, and if after giving it a fair trial, you are not satisfied with the results, your money will be cheerfully refunded.

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Going Blind. Barry Co. Iowa City, Ia. Can Cure.

Owl Brand Pure Cotton Seed Meal

49 Percent Protein and Fat. Richest cattle feed on No. 11 and prices. F. W. BRODE & CO., Memphis, Tenn.

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BLACK PERCHERON STALLIONS for sale. Imported and home-bred. From one to five yrs. old. Registered in the Percheron Society of America. J. C. TEDROW, Forest Hill, Mich.

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ABERDEEN ANGUS bulls, cows and heifers. Polled Durham and Shorthorn bulls, milking strain. Bargain prices and freight paid to first buyers. Purchasers of \$500 get their expenses. Clover Blossom Farm, Fort Austin, Mich.

Ayrshire Calves for Sale. A choice lot of few yearling bulls, bred with greatest care. Berkshire Pigs—stock from Lovejoy & Son and C. S. Bartlett. Write for prices. Inspection solicited. MICHIGAN SCHOOL FOR THE DEAF, Flint, Mich.

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

HOLSTEIN FRIESIANS—A few fine bull calves sire Canary Merceides Royal King. W. B. JONES, Oak Grove, R. No. 3, Mich.

I Hope To Sell Before Christmas, 25 Registered Holstein Cows, 2 to 6 years old, due to freshen soon, 9 Bulls from A. R. O. dams. Ready for service. Don't wait, but write or come quick. L. E. CONNELL, Fayette, Ohio.

TOP NOTCH HOLSTEINS

We have "Top Notch" young Holstein Bulls that combine in themselves the blood of cows that now hold, and in the past have held, world's records for milk and butter fat.

One of them could impart the rare qualities of these great ancestors to all their offspring in your herd. Cost nominal considering benefit secured. Why not "build up" "The Best" is cheapest. McPHERSON FARMS CO., Howell, Mich.

HOLSTEIN-FRIESIAN BULLS (registered) of the best breeding. Both calves and yearlings. I. M. SHORMAN, R. D. & Phone, Fowlerville, Mich.

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

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

JERSEY BULL CALF, born March 10, '08. Dam's average yearly milk record 5 years 8526 lbs.; test 5 4-10 g. Sire's Dams rec. 10062 lbs. as 2-year-old test 5 2-10 g. Murray-Waterman Co., Ann Arbor, Mich. R. 6.

JERSEY BULL CALVES I am sold short on cows and heifers but have a few choice bull calves from producing dams, good ones. Price \$35 to \$50 each. I will guarantee to please you. Colon C. Lillie, Coopersville, Mich.

Northern Grown Jerseys.

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

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Red Polled Cattle. Bulls & Heifers 10 to 14 months. Cows all ages, prices low. E. BRACKETT, Allegan, Michigan.

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Three choice, dark red, richly bred, young bulls, from 3 to 16 mos. old. They are good enough to head pure bred herds and are priced worth the money. P. P. POPE, Mt. Pleasant, Michigan.

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PORTLAND, MICH., breeder of SHORT-HORN CATTLE. Have all ages, both sexes. Color—reds and roans. Quality and prices right.

3 Shorthorn Bull Calves,

pure bred, about one year old. ALFRED ALLEN, Mason, Mich.

Reg. Shorthorn Bull Calves for sale.

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If you now have a common flock it will pay you to get into better stock. GOOD SHEEP are sure money makers for you, besides their wool and lambs the fertilizing and weed destroying benefit to farm is worth all it costs to keep them. For over twenty years I have been improving my flocks until today "Parsons sheep" are known to be among the best in the country, being the largest owner and breeder east of the Mississippi in position to offer for sale in any numbers, choice dark faced $\frac{3}{4}$ to full blood golden fleeced shropshire ewe lambs at \$9.00 each. Choice full blood ram lambs fit for service \$12.50 each. All are well woolled, good size and of uniform appearance; will accept orders for one or more sheep or car lots, (cash must accompany order for ten sheep or less). You run no risk for if I was not reliable and responsible this paper would not print this notice—order today and you will get a flock you can be proud of. I started with 10 sheep 22 years ago, what I have done you can do. ROMEYN C. PARSONS, Grand Ledge, Mich.

Lincoln Sheep—Chester Swine.

Either sex. A. H. WARREN, Ovid, Mich.

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Choice yearling rams, and ram lambs, also yearling ewes, and ewe lambs, type and quality our aim, nothing finer this side of the water. Also choicely bred Berkshires. L. S. DUNHAM & SON, Concord, Michigan.

SHROP. BREEDING Ewes bred to high class rams very cheap now. Also Beef-Milk Shorthorns, and P. C. Swine. M. B. TURKEYS. Write today for price list F. Maplewood Stock Farm, Allegan, Mich.

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LARGE English Berkshire Boars ready for service, also choice gilts at farmers' prices. Levi J. Winn, Eaton Rapids, Mich., R. R. 3, Bell phone 268 6H.

Berkshires—A few good boars by King Premier 12th. Extra fine individuals. A. A. PATTULLO, Deckerville, Mich.

BERKSHIRE SOWS bred to a great son of MASTERPIECE for spring farrow. Also a few extra choice young boars of equally rich breeding. C. D. WOODBURY, Lansing, Mich.

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Have fine lot of spring pigs. Most of them sired by Premier Victor 95290, grandson of Lord Premier 50001, the breeding so much sought after. Pigs not overfed, just the kind to do the farmer most good. F. A. BYWATER, Memphis, Mich.

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Chester Whites. I have 4 boars farrowed in Feb'y. Also long bedded, growthy fellows. Also March and April farrow, either sex. Also a choice yearling boar. W. O. WILSON, Okemos, Mich.

ADAMS BROS. IMPROVED CHESTER WHITES—Won more premiums in '08 than any other herd in Michigan. 10 choice boars ready for service. Gilts open or bred to Junior Champion boar of Michigan. ADAMS BROS., Litchfield, Mich.

IMPROVED CHESTER WHITES.

Boars ready for December service, price \$15 each. Gilts bred for April farrow, price \$20 each. Satisfaction guaranteed or money back. COLON C. LILLIE, Coopersville, Mich.

O. I. C. Sows bred to Farrow in April, kept until sure in pig for \$20. Choice lot. E. E. BEACH & SON, Brighton, Mich.

O. I. C. from premium stock all sold except a few October pigs. Hood's Stone House Stock Farm, H. N. Hood, C. Phone 761-3r, Adrian, Mich.

O. I. C. "PREMIUM STOCK." Choice boars ready for service. 4 off next 30 days. Glenwood Stock Farm—OPHOLT BROS., Zeeland, Michigan, R. 6. Phone 94.

O. I. C. Spring boars all sold have a few choice gilts left to be bred for spring farrow. Satisfaction guaranteed or your money back. A. NEWMAN, R. No. 1, Mariette, Mich.

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

DUROC JERSEYS—Boars ready for service. Sows open or bred. Pigs at weaning shipped C. O. D. L. R. KUNEY, Bell Phone 131, Adrian, Mich.

BARGAINS IN POLAND-CHINAS

either sex, big bone, lots of size, with best of breeding, one male pig by Spelbinder a prospect. Buff Rock poultry, everything priced to sell. WM. WAFFLE, JR., Coldwater, Mich.

POLAND CHINAS—Big boned, prolific; boars and sows. Ship immediately. A. R. GRAHAM, Flint, Mich.

FRANCISCO FARM POLAND-CHINAS.

Three choice spring boars still on hand. They are priced to sell. P. P. POPE, Mt. Pleasant, Mich.

GOOD POLAND CHINA GILTS, bred or open. Sired by such leading boars as L. & W. Sunshine Perf. No. 71503, Second Spill No. 114791, All Right No. 144323 and Conqueror. Weight about 200 lbs. Smooth, silky black coats, and shipped on approval. Write if you are wanting something good. No cheap stuff offered. JOHN RIENSTRA, Parkville, Mich.

MICHIGAN HEADQUARTERS FOR BIG POLANDS Two herd boars bred by Peter Mour, for sale. Bred sows, pigs not akin. J. C. BUTLER, Portland, Mich.

P. C. BOARS and SOWS with size, bone, and quality. WOOD & SONS, Salline, Mich.

SPECIAL SALE of large, good style, prolific, young and mature Poland China Sows bred to extra heavy boned boars. Robert Neve, Pierson, Mich.

POLAND-CHINA Gilts, bred. Light Brahma, B. P. Rock and White Wyandotte cockerels for sale. E. D. BISHOP, Route 38, Lake Odessa, Mich.

LARGE ENGLISH YORKSHIRES.

Very prolific, large boned, vigorous April boar pigs ready for fall service \$15 each. April Gilts bred to farrow next spring \$20 each. Your money back if you are not satisfied. COLON C. LILLIE, Coopersville, Mich.

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POULTRY AND BEES

TO GET FERTILE EGGS.

Another hatching season is upon us, and it is well to consider the conditions governing the production of eggs that will produce strong healthy chicks. This is the kind we are all after, rather than the weak, puny ones that do not live two weeks after birth, leaving the owner wondering what is the matter.

I wish that every reader of this paper who has heretofore bred poultry in a haphazard way, would turn over a new leaf this year and select one or two breeding pens. Have each pen consist of 12 of the best hens or pullets in the flock, and mate them with two or three vigorous cocks or cockerels. The use of such breeding stock should bring a marked improvement in the quality, and also in the quantity, of the coming year's poultry crop.

When we speak of fertile hatchable eggs there are many things to be considered. The foundation of this year's breeding stock should have been laid at this time last year. Before artificial incubation and brooding came into general use eggs were never set until late spring or early summer. Then, if the stock was healthy, there was very little trouble about fertile eggs for at the time these eggs were laid the hens were out picking their living where grass and insects were plenty. But since the incubator has come into general use eggs are set during the cold winter months. At the time the eggs are produced the hens are shut in, the supply of green and animal food is limited, and as a result poor hatches are the rule.

Our markets demand early broilers so we must supply them, but we must have fertile eggs to incubate or our profit will show on the wrong side of the ledger, as at this time eggs bring a long price in the markets.

Feeding the Breeding Stock.

The breeding pen should be mated two weeks before commencing to save the eggs to incubate, and these eggs should be turned every day until they are put into the machine. The supply of mash food should be lessened and more cracked grain fed in the litter where the fowls will be compelled to work for it. Some form of green and animal food must be furnished to help make the ration similar to that of summer. Clover, cabbage and beets are good for the green food and beef scrap or cut bone will supply the needed animal matter.

It is a question among poultrymen whether winter laying has any effect on the fertility of the eggs. I do not think it does as long as the hens are fed a ration that is properly balanced, or nearly so, and no condiments are fed to force egg production. Poultrymen who have given a life-time to the business feed a ration so compounded that the total food nutrients served each day have, approximately, a nutritive ratio of 1 to 4. That is, the carbohydrates and fats in the food are four times the weight of the protein. In feeding such a ration the hen is furnished the raw material and is as a machine, turning out the finished product in the shape of fertile eggs. Under these conditions the hen is not under any great strain, and her having laid all winter will not affect the fertility of her eggs.

A hen cannot produce eggs when fed on one thing alone, any more than a carpenter can build a house with nails only; she must have the raw material in the right proportions. Hens that have made big egg records have been fed balanced rations, and have been bred for egg production. These hens are the result of some breeder's work for years. They are not large egg producers thru chance but thru breeding.

As soon as the weather will permit the hens should be encouraged to get out of doors and hustle, instead of sitting on the roost waiting for the food bucket. The more exercise they get the better the prospect for a high per cent of fertility of their eggs.

Caring for the Eggs.

When eggs are being laid in cold weather they should be gathered several times a day, as chilling will have a marked effect on their hatchability. If they are to be kept any length of time they must be turned at least every other day. I find a handy way to turn them is to make a case by getting some egg fillers from the grocer. These are simply pasteboard squares holding three dozen eggs. Make a box from half-inch lumber that will hold one of these fillers and fit

a cover that will just fit inside the box. Put a latch on each side of the top to hold the cover on and you have a very convenient way to turn three dozen eggs. Put a few thicknesses of newspaper on the bottom and top to cushion the eggs when the box is turned. I have made some high enough to hold two or three layers, but they are more clumsy to handle than the box containing one layer. The eggs should be kept in a cool place, but not cool enough to chill them, or warm enough to start the germ.

Even with the best of care in selecting breeding stock we will have some eggs that are off in color, shape and shell. Do not use these eggs for hens or incubator, but pick out eggs that are as nearly perfect as possible. Eggs from year-old hens will produce stronger and more robust chicks from early hatches than will eggs from pullets, because the pullet is not fully developed until a year old.

The beginner will find at testing time that there will be some eggs that show a start at the first test but the germ will be dead at the next test, not being strong enough to develop. Here, I think, is one reason of chicks dying in the shell. Eggs containing weak germs are not tested out as they should be and then it becomes necessary to help the chicks out of the shell. Don't do this; if they are not strong enough to get out themselves they will not live after you help them out, and you are running a chance of chilling other eggs.

There will sometimes be found eggs from certain hens that will all be infertile, especially if only one male has been used. I generally have an extra male or two and change the males, in all but my best breeding pens, every night, keeping the extra ones in light airy coops and feeding them well. The extra fertility will more than pay for the feed and care of the extra cockerels.

Kalamazoo Co. W. R. FARMER.

GUARD AGAINST EGG EATING.

This is one of the most costly and troublesome of the acquired habits of poultry. I find that it generally begins by the accidental breaking of an egg in the nest, and spreads rapidly among the flock until many of the eggs are purposely broken and eaten by the hens. Heavy fowls are more likely to contract the habit because they are more likely to break their eggs by stepping on them. When a hen breaks an egg she not only eats its contents in the nest, but often carries large pieces of the shell about the house or yard and fighting with other fowls all eager to get a share. In this way the knowledge of how appetizing eggs and egg shells are is spread, and one fowl becomes the teacher of another.

Thin shells break easily, and it is therefore obvious that a deficiency in the shell-making constituents of the feed is a factor. However, an egg may be broken for the want of enough straw or nesting material to protect it from contact with wood or stone. Supply the nest with sufficient straw and use some kind of artificial nest egg. The straw in the nest should be of a dark color so that a broken egg may not so readily attract the hen's attention. However, if the habit is acquired it is best to have the nests re-constructed so that the eggs will roll beyond the reach of the hen when laid. Also by the use of artificial nest eggs and permitting the hens to pick at them they will get the idea that they are unable to break the shell. Sometimes, however, they will become confirmed egg eaters. In such case I find it best to remove them from the flock and either kill them for table use or sell them.

Illinois. R. B. RUSHING.

BUYING GRAIN FOR LAYERS.

A Grand Traverse county reader writes that he has plenty of corn for his laying hens but realizes that this grain alone does not make a good ration. He can vary the ration a little with boiled potatoes but wants to know whether it would be profitable to sell some of the corn and buy other grain to take its place. In the first place, we would call attention to several good systems of feeding described in recent issues of The Farmer. To get eggs in paying quantities it is absolutely necessary to feed some grain other than corn. For the morning feed a mash made of crushed corn, wheat and oats, slightly moistened with milk, is good. At noon whole or cracked wheat should be scattered in the litter. A little corn might be given with this but it should be cracked or coarsely ground, which will prevent them from satisfying

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Instant Relief, Permanent Cure—Trial Package Mailed Free to All in Plain Wrapper.

Piles is a fearful disease, but easy to cure if you go at it right.

An operation with the knife is dangerous, cruel, humiliating and unnecessary.

There is just one other sure way to be cured—painless, safe and in the privacy of your own home—it is Pyramid Pile Cure.

We mail a trial package free to all who write.

It will give you instant relief, show you the harmless, painless nature of this great remedy and start you well on the way toward a perfect cure.

Then you can get a full-sized box from any druggist for 50 cents, and often one box cures.

Insist on having what you call for.

If the druggist tries to sell you something just as good, it is because he makes more money on the substitute.

The cure begins at once and continues rapidly until it is complete and permanent.

You can go right ahead with your work and be easy and comfortable all the time.

It is well worth trying.

Just send your name and address to Pyramid Drug Co., 92 Pyramid Building, Marshall, Mich., and receive free by return mail the trial package in a plain wrapper.

Thousands have been cured in this easy, painless and inexpensive way, in the privacy of the home.

No knife and its torture.

No doctor and his bills.

All druggists, 50 cents. Write today for a free package.



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WOOD SAWS**

SAW your own wood and save time, coal and money; or saw your neighbors' wood and

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Hundreds are doing it with an Appleton Wood Saw. Why not you? We make six styles—steel or wooden frames—and if desired will mount the saw frame on a substantial 4-wheel truck on which you can also mount your gasoline engine and thus have a

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We make the celebrated Hero Friction Feed Drag Saw also, and complete lines of feed grinders, corn shellers, corn huskers, fodder cutters, manure spreaders, horse powers, windmills, etc. Ask for our Free Catalogue.

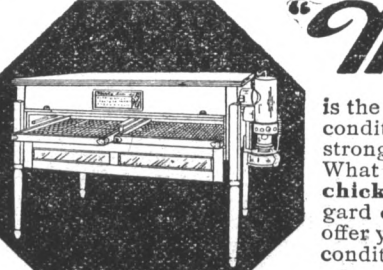
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Engine Complete

Assembled complete ready to run. Fitted with our patented "Fuel Feeding Device" for use of naphtha, gasoline, kerosene or alcohol without change of equipment. Runs all farm implements, such as pumps, cream separators, grist mills, lathes, sawing machinery, etc. 2 1/2 to 3 H.P. at proportionate prices. All sizes in stock ready to ship. Write today for agents' special proposition.

Detroit Engine Works
149 Bellevue Av., Detroit, Mich.



Read This

"I was to buy 100 incubators every one of them would be a Mandy Lee. My average percent of hatches with your machines for the last three years has been better than 90 per cent."

(Signed) T. R. BLAKE, Hadley, Minn. Nov. 12, 1908

320 Acres of Wheat Land in WESTERN CANADA Will Make You Rich



**160 ACRES
FARMS IN
WESTERN CANADA
FREE**

Fifty Bushels per Acre have been grown. General average greater than in any other part of the Continent. Under New Regulations it is possible to secure a Homestead of 160 acres free and an additional 160 acres at \$3.00 per acre.

The development of the country has made marvelous strides. It is a revelation, a record of conquest by settlement that is remarkable. Extract from correspondence of a Missouri Editor, who visited Canada in August last.

The grain crop of 1908 will net many farmers \$20 to \$25 per acre. Grain-raising, Mixed Farming and Dairying are the principal industries. Climate is excellent; Social Conditions the best; Railway Advantages unequalled; Schools, Churches and Markets close at hand.

Lands may also be purchased from Railway and Land Companies. For "Last Best West" pamphlets, maps and information as to how to secure lowest Railway Rates, apply to Sup't of Immigration, Ottawa, Can., or to the authorized Canadian Government Agent.

M. V. McInnes, 6 Ave. Theatre Block, Detroit, Mich.; O. A. Laurier, Marquette, Mich.

CHICK SAVING COOP



Keep chicks warm and dry and save them from Rats, Weasels, Lice and Mites in the all metal Sanitary Brood Coop. Exclusive pattern, made only by us. Adds 100% to profits. Knocks off 50% from cost of poultry raising. Easily taken apart and stored. Send for Free Circular and prices.

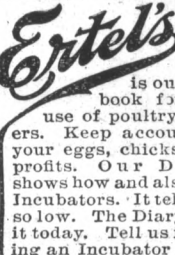
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125 Egg Incubator \$10 and Brooder Both For

If ordered together we send both for \$10 and pay freight. Well made, hot water, copper tanks, double walls, double glass doors. Free catalog describes them.

Wisconsin Incubator Co., Box 89, Racine, Wis.



Ertel's POULTRY DIARY

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Single Comb Black Minorca Cockerels for sale. A few choice pullets also. **R. W. MILLS, Saline, Mich.**

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is the only incubator on the market in which conditions can always be made which insure a strong, healthy chick from each fertile egg. What is needed at hatching time is a strong chick and a weak shell. We absolutely disregard outside conditions of climate or altitude—offer you an incubator where favorable hatching conditions can always be made at the eggs.

Letters like this herewith prove our machines to be the best continuous hatching—same results all the time—and it's a part of our guaranty. We offer you a certainty; others a possibility. Which do you prefer? Catalog free on request; also booklet, "Incubator Hygrometry."

GEO. H. LEE CO., 1158 Harvey St., Omaha, Neb.

their hunger before they have secured the adequate amount of exercise. Then warmed whole corn or wheat may be given at night. It is not necessary that the wheat be a high grade article so long as it is not moldy or spoiled. If the corn can be exchanged for a cheap grade of wheat, such as screenings containing a large proportion of cracked kernels and perhaps some weed seed, the exchange should prove very profitable. Clover leaves or the chaff from clover hay would also make a valuable addition to the ration. Being rich in protein it would take the place of some of the grain, thus obviating the necessity of feeding so much corn. Corn is very starchy, and therefore fattening. Where it seems necessary to feed it pretty liberally the hens should be watched closely and the moment they show a tendency to become fat and lazy the allowance must be reduced. As in the human family, more or less variety is essential to continued activity and keenness of appetite, and with this fact in mind the value of fresh table scraps containing vegetable and animal matter should not be overlooked. They will also relish all the fresh bones that you find it possible to crush or chop up for them, and the results from thus utilizing them will pay well for the labor involved.

MICHIGAN STATE POULTRY SHOW, JAN. 9-14.

The 15th annual show of the Michigan State Poultry Association will be held in the Light Infantry Armory, Detroit, beginning Jan. 9 and closing Jan. 14. This promises to be the banner show of the organization since the interest of Detroit business men has been more generally enlisted than ever before. Last year's splendid efforts in getting up a superb premium list have been outdone and exhibitors this year will compete for more large and valuable prizes than at any preceding show. Classes have been provided for about everything that wears feathers and the competition is open to the world. The Association furnishes uniform cooping and bars its own officers from competing for cash or special prizes. All varieties will be judged by the score card with the exception of S. C. Rhode Island Reds, which will be judged by comparison. The Detroit Pigeon Club will co-operate with the Association in conducting a pigeon department which will probably surpass anything in that line ever seen at a Detroit show. Further details may be had by addressing Secretary John F. Tomlinson, Detroit.

APICULTURAL NOTES.

Adulterated beeswax may be detected by chewing a small piece for a few minutes. If the wax becomes pasty and adheres to the teeth it is adulterated. Pure beeswax is very brittle and should crumble to pieces while chewing. This is a good and quick test to use when buying wax.

A comb that contains a pound of honey will, when rendered into wax, weigh about one-half ounce; in other words, it will require the combs of about 30 one-pound boxes of honey to make a pound of beeswax. It is quite evident then that very little wax is consumed by the individual when eating comb honey, and, its nature being brittle, very much unlike pastry, it is not at all unwholesome when eaten.

Some people are of the opinion that if we have a cold, steady winter, during which the bees remain confined to their hives for several months, the danger of winter losses is not great, because less of the bees wander away and get lost. There would be a point to this if it were not for the danger of their overloading their bowels with fecal matter which they cannot discharge in the hive without greatly endangering the life, or health, of the colony. Even when the snow is on the ground, and it looks as if it would be a pity for so many bees to fly and drop on this white sheet, it is found that it is the colony which takes the lively flight that winters best. Be the weather ever so cold for two, three, or four weeks at a time, if the bees can have a good flight about once a month, and if their honey is of a fair quality, there is no need to fear the result. A few winter flights also have the advantage of inducing the bees to breed early, and, although this is sometimes dangerous, yet in most cases the early breeding is a favorable sign, for the possible spring losses are partly made up by the young hatching bees.

It is a well known fact that candies and other sweets which are made of ordinary sugar of commerce, if taken habitually, will in time prove very injurious to digestion. This is due to the fact that ordinary sugar must be converted in the digestive tract to "grape sugar" before it can be assimilated. It has been stated by some excellent authorities that the continued draught on the secretive forces of the system in converting large quantities of sugar is a fruitful cause of Bright's disease and other kidney troubles. No such danger is attendant upon the eating of honey, as it is partially digested in the honey-sac of the bee, and enters the digestive system of the human body in proper form for immediate assimilation. A more general acquaintance with this simple truth would prove a boon to many parents who are troubled with the candy problem. And what is very much to the point in this connection is the fact that the price of honey is not more, and in some cases not as much, as that of the cheapest pure candy.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

RELATION OF ONE CREAMERY COMMUNITY TO ANOTHER.

In my travels over this state in the interests of a business proposition connected with creameries, I am making a close study of the dairy business and I find many pleasant sides to it, and also many ups and downs. I think it a good deal like I once heard a minister say in a sermon, that each man made his own "hell" on earth here below, and I think it is true. I believe that many of our creamerymen are doing the very same thing today. Our creameries are far between. We are not crowded in any place at all for territory to support, and support properly, a good-sized creamery. But we hear from all sides of the territory that this man or that man is coming into the territory soliciting cream and offering higher prices for it. In fact, they are offering as much as a cent above Elgin quotations for butter-fat and paying part of the shipping or transportation charges besides.

The question is, is that sort of thing necessary, and can such a man make any money. If a man has an unlimited amount of money perhaps he can do it, but if he has not, and is handling cream a week or more old, and selling all on consignment, he will sooner or later learn that he has a proposition before him which he cannot honestly come out on without making a heavy cut some place. Now, who is to be cut? Is it the commission man? Emphatically, no. If there is any cutting he has the first chance himself, and he many times does it, and does it up properly, when he makes a cut and leaves the creameryman between the farmer and the deep sea, for he has been paying more than he could afford without any cut from the commission man, and so he will have to get after the tests with a broadaxe and shape them right, or he will be advertising his business for sale.

In communities where we have farms and cows of a sufficient number to support a creamery or cheese factory is where these institutions should be located. Then each man should keep within his territory and, instead of increasing his territory by encroaching upon his neighbor, he should go out to each farm, study the general conditions and educate that farmer to improve his live stock and his dairy cows by making tests and by proper feeding. Tell him about the cost of keeping and the weeding out of unprofitable cows and replacing them with good cows, and about increasing his business by getting more of the right kind of cows on his farm and the farmers will begin to realize there is some money in the dairy business, and will become more and more interested in it. At the same time there can be special stress laid upon the care of the milk and cream from the time of milking until it is delivered to the factory. If he would do this kind of work he would soon become a working missionary among the farmers and would have a number of warm friends.

Today we find them driving thru the country and soliciting patrons, agreeing to do more than they know they can afford to do, and the other fellow is getting it in the neck all the time. There is no fair man in the business but himself and in a day or two the other creamery manager, or his representative, comes along, and he has his story well committed. He is the only fair fellow and, after he leaves, perhaps the third comes along with another story. The farmer in question is at a loss to know who to believe. He thinks he has read so and so, Mr. A says so and so, Mr. B has a different story, and Mr. C says something else. He begins to doubt them all and finally decides that the most profitable way is to select Herefords and cross them with Galloways, letting the calves churn the butter, because there is no money in the dairy business.

I have these things repeated many times to me just as I have given them. Last spring when we were selecting Holstein sires to head two breeders' associations a man sent me word that he knew where I could get such an animal as was wanted for one of the associations; that it was a calf from a Hereford dam and a Galloway sire. It was a new one on me for the dairy business. I did not take the advice and spend time and money and experience to find out whether the other fellow knew or not. I have found in my

territory there was plenty of work for me along this line without going into the other fellow's field. I want to double the product of the cows that we have today, and that should be done before we can say that we have accomplished much. I hope this coming season I shall be able to do more work in the field than heretofore. I hope to have an experienced man who can make the butter up for me and that I can find time to take the farmers or producers by the hand from time to time and assist them in overcoming their present difficulties and in making two blades of grass grow where there had only been one growing before.

If each creamery or cheese factory or condensary would work along these lines it would only be a matter of a few years when we could come close to the lead in dairy products as well as in producing sugar beets, potatoes, fruit or anything else, and we can grow all of these. I don't think there is a state in the union that is better adapted to a general line of farming than Michigan. The farmer who practices dairying can arrange his work so that he has a good income every day in the year, can have land second to none, and have the labor problem solved by being able to employ a man for twelve months of the year instead of for only eight.

The first secret of our success is to double our product in the present territory, improve its quality, and then market it to the best advantage.

Oceana Co.

EDWIN K. SMITH.

A VERY GOOD RATION FOR COWS.

As I am a young farmer I would like your valuable advice in regard to feeding dairy cows. I have 10 cows and sell milk in the city. My mode of feeding is as follows: Each cow gets all the shredded cornstalks she can eat twice a day, and a good feed of clover hay at noon. As I have no silo, I feed stock beets. Each cow gets 1 pk. of sliced beets, 2 qts. corn-and-cob meal, 2 qts. of wheat bran and 1 pt. of cottonseed meal twice a day. I also give one tablespoonful of stock food. I would like to know whether the ratio is right or whether I can improve on it. I have the beets, corn, cornstalks and clover hay. Would it pay me to build a silo for 10 cows. I have a small farm of 68 acres, 65 acres plow land and three acres wood lot, which I use for pasture. Oakland Co. M. M. SMITH.

There is very little to criticize about this ration. Cornstalks and hay make a good roughage and, as he has no silo, the feed of beets is a splendid thing as a succulent food in the ration. Nothing could be better. Corn-and-cob meal, wheat bran and cottonseed meal make an excellent grain ration, and I should judge that he is feeding them in about the right proportion to get the best results. I suggest that he weigh his feed instead of measuring it. One could get little information out of 2 qts. of corn-and-cob meal, 2 qts. of wheat bran, 1 pt. of cottonseed meal. The 2 qts. of corn-and-cob meal will probably weigh about 1½ lbs. The quart of bran will probably weigh about 1 lb. This is fed twice daily, as I understand it, making about 5 lbs. A pint of cottonseed meal would be about 1 lb., making about 2 lbs. of this a day, which would make a total of 7 lbs. of grain ration, which is a good liberal grain ration for the average cow. You might have some cows that it would pay to feed a little more. I think if Mr. Smith would drop out the stock food he would get just as good results, and save this extra expense, as I do not think it necessary with the ration which he is feeding. Otherwise, I do not think I could make any suggestion which would better his ration.

I certainly believe it would pay to build a silo for the 10 cows. After he builds his silo he will find out that he can keep more cows on his farm than he does now. I would build the silo about 12 feet in diameter and 30 feet high. Then he will probably have some ensilage left for feeding during dry weather in summer.

A Poet Once Asked:

"What's in a name?" A great deal, we answer. For example, the Reliance Incubator is all that its name implies. You can depend on it. It will hatch every hatchable egg, and it turns out strong, lively chicks that begin to rustle for themselves as vigorously as any hatched by the old hen herself. Moreover, it is offered at very low prices and guaranteed by the maker. When perplexed, or better still, before you get in that state of mind, write to the Reliance Incubator Co., 563 Freeport, Ill., for their very complete catalogue and get their prices. Their advertisement appears elsewhere in this issue. Please mention this paper in writing them.

Does Advertising Pay?

J. S. Flint, Cement City, writes: "Please discontinue my advertisement. I am selling 23 head from my herd, and it is all I can spare."



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It's a new story of a new cream separator; a 1909 cream separator; the new Tubular "A." It's worth reading about because it is the standard by which other cream separators are measured, and represents just what a satisfactory separator should be.

Our new catalogue tells the story of the new Tubular "A" in a way that will interest you. Just send us a post card for Catalogue No. 152 and we will send it by first mail.

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Guaranteed to skim closer than any separator in the world. Sold direct from the factory. We are the oldest exclusive manufacturers of hand separators in America. You save all agents' dealers' and even mail order house profits. We have the most liberal 30 DAYS' TRIAL, freight prepaid offer. Write for it today. Our new low down, waist high separator is the finest, highest quality machine on the market; no other separator compares with it in close skimming, ease of cleaning, easy running, simplicity, strength or quality. Our own (the manufacturer's) guarantee protects you on every AMERICAN machine. We can ship immediately. Write for our great offer and handsome free catalogue on our new waist high model. Address, Box 1061, AMERICAN SEPARATOR CO., Bainbridge, N. Y.

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Will grind everything that can be ground—all kinds of feed, corn cobs, oats, rye, cornmeal, etc.—anything suited to live stock feeding. They are simply and easily operated, and every mill sold is fully warranted. Write for large illustrated catalogue, mentioning kind and amount of power you have for operating a mill. SPROUT, WALDRON & CO., P. O. Box 257, Muncy, Pa.

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BOWSER SWEEP MILLS

Different from all others. 4 or 2 horses. Grind 16 to 1 or 7 to 1. Grind Corn with shucks or without. And all small grains including Oats and Wheat. (Also make 7 sizes bolt mills). D.N.P. Bowser Co., South Bend, Ind.

HOW AND WHY THE FAT CONTENT OF MILK VARIES.

The variations in the tests of milk of single cows from milking to milking or from day to day are greater than many cow-owners suspect. There seems to be no uniformity in this variation, except that the quality of the milk produced generally improves with the progress of the period of lactation; even this may not be noticeable, however, except when the averages on a number of tests made at different stages during the lactation period are compared with each other.

By testing separately every milking of a number of cows thru their whole period of lactation, the results obtained have seemed to warrant the following conclusions in regard to the variations in the test of the milk from single cows, and it is believed that these conclusions allow of generalization.

1. Some cows' milk tests about the same at every milking. Such cows generally give a uniform quantity of milk from day to day.

2. Other cows give milk that varies in an unexplainable way from one milking to another. Neither the morning nor the evening milking is always the richer, and even if the interval between the two milkings is exactly the same, the quality as well as the quantity of milk produced will vary considerably. Such cows are mostly of a nervous, excitable temperament, and are easily affected by changes in feed, drink, or surrounding conditions.

3. The milk of a sick cow, or of a cow in heat, as a rule tests higher than when the cow is in a normal condition; the milk yield generally decreases under such conditions; marked exceptions to this rule have been observed, however.

4. Starved or underfed cows may give a small yield of milk testing higher than when the cows are properly nourished, probably on account of the accompanying feverish condition of the animal. The milk is, however, more generally of an abnormally low fat content, which may be readily increased to the normal per cent of fat by liberal feeding.

5. Fat is the most variable constituent of milk, while the solids not fat vary within comparatively narrow limits. The summary of the analyses of more than 2,400 samples of milk, calculated by Cooke, shows that while the fat content varies from 3.07 to 6 per cent, that of casein and albumen varies only from 2.92 to 4.30 per cent, or less than 1.5 per cent, and the milk sugar and ash content increases but little (about 0.69 per cent) within the range given.

6. A test of only one milking may give a very erroneous impression of the quality of a certain cow's milk. A composite sample taken from four or more successive milkings will more nearly represent the quality of the milk which a cow produces at the time of sampling.

The variations that may occur in testing the milk of single cows are illustrated by figures obtained in an experiment made at the Illinois station, in which the milk of each of six cows was weighed and analysed daily during the whole period of lactation. Among the cows were pure-bred Jerseys, Shorthorns, and Holsteins, the cows being from 3 to 8 years of age and varying in weight from 850 to 1,350 lbs. During a period of two months of the year, the cows were fed a heavy grain ration consisting of 12 lbs. of corn and cob meal, 6 lbs. of wheat bran, and 6 lbs. of linseed meal per day per head. This system of feeding was tried for the purpose of increasing, if possible, the richness of the milk. The influence of this heavy grain feed, as well as that of the first pasture grass feed, on the quality and the quantity of the milk produced, is shown in the following table, which gives the complete average data for one of the cows. The records of the other cows were similar to the one given, in so far as variations in quality are concerned:

Month.	Live weight, lbs.	Daily milk yield.			Tests of one day's milk.			Yield of fat per day.		
		Average lbs.	Highest lbs.	Lowest lbs.	Average per ct.	Highest per ct.	Lowest per ct.	Average lbs.	Highest lbs.	Lowest lbs.
December	920	12.1	16.0	10.0	3.8	4.9	3.0	.46	.60	.34
January	927	16.0	17.7	14.0	3.7	4.6	2.7	.59	.76	.44
February	1035	16.1	17.7	13.5	3.6	5.8	3.2	.58	.84	.51
March	1047	14.3	16.0	12.5	3.8	4.7	3.4	.54	.61	.50
April	1054	13.8	16.5	11.5	4.0	5.8	3.0	.55	.72	.46
May	1079	14.5	17.2	10.0	3.8	4.6	3.4	.55	.70	.44
June	1105	12.1	14.0	9.2	3.9	4.6	3.2	.47	.57	.35
July	1180	9.3	12.2	6.0	4.2	6.2	2.8	.39	.60	.27
August	1130	6.4	9.3	3.5	4.7	7.9	2.9	.30	.50	.16

The average test of this cow's milk for her whole period of lactation was 3.8 per cent of fat. Twice during this time her milk tested as high as 5.8 per cent and once as low as 2.7 per cent, while tests of 3.0 and 4.6 per cent were obtained a number of times. The average weight of milk produced per day by the cow was 14 lbs.; this multiplied by her average test, 3.8, shows that she produced on the average .53 lb., or about $\frac{1}{2}$ lb. of butter-fat per day during her lactation period. If, however, her butter-producing capacity had been judged by the test of her milk for one day only, this test might have been made either on the day when her milk tested 5.8 per cent or when it was as low as 2.7 per cent. Both of these tests were made in mid-winter when the cow gave about 16 lbs. of milk a day.

A sufficient number and variety of tests of the milk of many cows have been made to prove that there is no definite regularity in the daily variations in the richness of the milk of single cows. The only change in the quality of milk common to all cows is, as stated, the natural increase in fat content as the cows are drying off, and even in this case the improvement in the quality of the milk sometimes does not occur until the milk yield has dwindled down very materially.

SIZE OF SILO FOR 100 HEAD OF STOCK.

I would like to know how large a silo I would have to build to hold enough ensilage to feed 100 head of cattle for seven or eight months. One half of them are milch cows and the others range from calves to three-year-olds. I want to know all the ensilage that would be required, with other grain rations and roots at least once a day. I want to use all the clover hay possible.

Also about how many acres of corn would it take to fill the silo with an average crop, and how would you advise planting this corn? Would you advise using a common grain drill so as to have rows $3\frac{1}{2}$ feet apart, or would you advise drilling 28 inches apart? About how much would it cost to build such a silo?

Alcona Co. A. FARMER.
One hundred head of stock, half of them milch cows and the rest ranging from calves to two or three-year-olds, would probably consume about as much silage as 75 cows; that is, we might estimate it in this way. This stock would eat, on an average, about 35 lbs. of ensilage per day. For seven months it would take about 300 tons of ensilage to last them. Now for a silo to hold 300 tons it would have to be about 24 ft. in diameter on the inside and 32 ft. deep. I would prefer, however, to make it 40 ft. deep and something like 20 ft. in diameter. I think this would be a better proportion.

I should judge that a silo of this sort would cost you in the neighborhood of \$300 or \$350. It is very difficult to make an estimate because I do not know what you intend to build the silo of, nor the cost of material, and can only make an average guess.

It would take, of the average corn crop, about 30 acres for a 300-ton silo. If you had an extra good crop it wouldn't take so much, and if you had less than an average crop it would take more acreage. I should prefer to plant this corn with a grain drill, putting rows $3\frac{1}{2}$ ft. apart. Drill the corn so that you will get about 10 or 12 qts. to the acre. That is thick enough. This would be better, I think, than to put it in 28-inch rows because you could do so much better job of cultivating. I would use the largest variety of corn that would, in an ordinary season, mature sufficiently for silage in your vicinity. I would not plant the large, late-maturing, Virginia, or southern kind of corn. This does not make good ensilage and you can afford to plant more acres to corn and have a better quality of silage by planting some northern-grown variety which is large and produces lots of foliage, and which will, under ordinary conditions, properly mature.

DE LAVAL CREAM SCORES HIGHEST AT GREAT DAIRY SHOW

At the great National Dairy Show, held recently in Chicago, cream skimmed with DE LAVAL separators won all highest honors. The cream exhibits were made in two classes and the winners in each were as follows, all being users of DE LAVAL hand separators:

MARKET CREAM

1st Prize, Gold Medal, G. C. Repp, Ohio . . . Score 98
2nd Prize, Silver Medal, W. R. Newberry, Ohio . . . Score 94

CERTIFIED CREAM

1st Prize, Gold Medal, Tully Farms, New York . . . Score 94

The contest was under the direction of the Dairy Division of the United States Department of Agriculture, Washington, and Mr. Repp's winning exhibit in the Market class was pronounced practically perfect, and given the highest score ever awarded by the Dairy Division.

For the past twenty years butter made from DE LAVAL cream has won all highest honors in every important contest. Sixteen of the largest 1908 State Fairs awarded their first prize to DE LAVAL butter and now comes this sweeping victory for DE LAVAL cream in the big Dairy Show contest, which only goes further to prove that DE LAVAL machines are head and shoulders above every other skimming device in every feature of separator use.

A DE LAVAL catalog tells why DE LAVAL cream is always superior. Ask for it today, or, better still, let us demonstrate the merits of a DE LAVAL separator in your own dairy.

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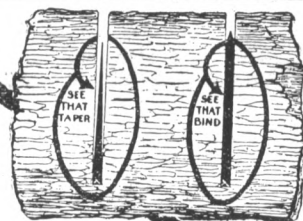
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Rich in Protein, Fat and Carbohydrates, in just the right proportion for vim, vigor and vitality as well as condition building. Read what C. G. Comstock, Milwaukee, writes: "Your Badger Feed is fine. Enclosed is another order for more. That proves it satisfies us completely. Our horses do better on Badger than anything we have ever fed." Our new Free Feed Book will interest you. Write for it today. Gives experiences on feeding, breeding, etc.

Chas. A. Krause Milling Co., Dept. 106, Milwaukee, Wis.

Why the "Segment-Ground" Process Makes Sawing Easy

The Atkins "segment-ground" saws taper from tooth edge to the center of the back and from the ends to the middle. Hence the blade makes room for itself so that it is almost impossible for it to "get stuck" in the wood. This patented feature can be had only in



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DETROIT, JANUARY 9, 1909.

CURRENT COMMENT.

As usual at this season of the year three is a great deal of speculation on the part of both holders and dealers touching the probable trend of the potato market during the future winter months. Also, as usual, there is a very noticeable tendency on the part of dealers to "bear" the market. Frequent reference is made to the large importations of foreign stock as a bearish factor, yet there has been a steady and comparatively free movement of the late crop since the season opened at gradually hardening prices and with only the occasional weakening of the market which is to be expected in any season. One factor which has undoubtedly operated to hold up the market is the fact that the producers, rather than the dealers have been the holders for better prices. Of course there are always a good many potatoes in the hands of country dealers, but the stocks so held are not as large as common this season, according to the most reliable advices. This may properly be considered as an encouraging factor in the situation, as reserve stocks will not be unloaded upon the market as rapidly in case of a sharp advance as would be the case if a large percentage of the reserve stocks were in the hands of dealers who simply waited an opportunity to move them at a good profit. Growers are always good holders on a rising market, and so long as there is no large accumulations of domestic stock on the big markets there would seem to be no danger of a general slump in prices, it being more reasonable to expect a shading in values in such centers as get an over supply at any time, while values hold comparatively steady on the whole.

But in a season like the present, when there is a shortage of home grown potatoes and a big foreign crop, the importation of foreign stock is a factor in the market which should not be ignored by the market student, hence the wisdom of undertaking a thorough analysis of this factor at the present time. Without doubt there have been unusually heavy importations of foreign stock for the season of the year, aggregating as much as 400,000 bushels in a single week. Recent advices from New York, however, indicate that the operations in foreign stocks have not proven profitable in a majority

of cases. It is stated upon good authority that the average cost of the foreign stock laid down in New York has ranged from \$1.90 to \$2.05 per 168 lb. bag, while the average price received for the stock is said to range from \$1.75 to \$2 per bag, with occasional sales up to \$2.15 and a good many as low as \$1.50. This variation in price is said to be due to the poor quality of the stock in many consignments, the tubers being damp and spotted, showing evidence of having been dug and stored in wet weather and having in some cases deteriorated in transit. The arrivals for last week were small in comparison with previous weeks, aggregating only about 30,000 bags, and arrivals for the next fortnight are very uncertain on account of unfavorable weather in England, Scotland and Ireland, which countries a large part of the stock arriving in New York come and where severe blizzards and storms were prevalent last week, seriously interfering with traffic in some sections. The best stock is said to come from England, and at the close of last week these were selling at \$1.90 per 168 lb. bag, in comparison with 80 cents per bushel for choice Maine stock. At Baltimore, on the other hand, the best German potatoes are reported as selling at \$2.25 per bag, or about 15 cents more than the average run of domestic stock. Another factor which will have some effect upon the trade in foreign potatoes is an advance in freight rates which was put into effect by the steamship companies on importations from England, Scotland and Ireland, which went into effect on January 1. Heretofore the rate on potatoes from these countries has ranged from 25 to 30 cents per bag, the advance announced being from 5 to 7 cents per bag. This advance, together with the previous trend of the business would seem likely to curtail receipts to some extent for the immediate future.

But any attempt to analyze the situation would be incomplete without a study of the statistics of imports for other years. Such a study shows that only twice since 1850 have the imports of foreign potatoes exceeded 8,000,000 bushels, and that only twice during the last twenty years have they exceeded 5,000,000 bushels, the last year of heavy imports being 1901, when they aggregated 7,656,162 bushels. In that year, however, our crop was approximately 80,000,000 bushels short of this year's crop and the average price was nearly or quite 40 per cent higher. But the report of Secretary Wilson for the current year places the country's crop at 275,000,000 bushels at 5 per cent below the five-year average, which means that the importations for the current year would have to be practically double the aggregate for 1901 to bring the offerings up to the five-year average, while importations would have to average as large as the maximum for previous weeks to bring them up to the aggregate for 1901. Thus it will be seen that the importations in any previous year have after all been but a mere bagatelle as compared with domestic offerings, and unless the present year breaks all records, they will but serve to prevent a shortage and a consequent uneven market at the ports where they are unloaded.

In the meantime the market for domestic stock is improving in many centers of consumption, and values are not being marked down to any degree at points where stocks are accumulating. In New York there was a better demand last week and considerable stock moved at slightly firmer prices, Michigan potatoes selling up to 80 cents. Maine stock has, as usual, been the favorite in that market. It is, however, estimated that half the Aroostook county crop, which was estimated at 15,000,000 bushels has been marketed, and that the bulk of those left are in the hands of growers who are generally holding for an advance. In Chicago a better tone is also reported in the market with arrivals no larger than needed for immediate use. A good many potatoes from Colorado and other western states having a good crop have been shipped to Chicago, but receipts from that source cannot continue to supply the market. On the other hand, the market was easy at Cincinnati and some other southern centers, but an improvement is expected when the season for handling seed stock arrives.

So, taking the situation as a whole, with an undoubted shortage, and with the bulk of the holdings in first hands, with an even market which shows a gradual improvement, with other foodstuffs generally so high as to prevent their substitution for potatoes, with the cold and stormy weather of winter with its unfavorable conditions for heavy movements all ahead, and with a general revival of

business which will increase transportation in all lines, there would seem to be no occasion to fear a heavy shrinkage in values. In fact, conditions would seem to favor the holder for a moderate advance over present values, but present prices are attractive and may be expected to bring out sufficient offerings to supply immediate demands, which will not favor any immediate sharp advance. In fact, all conditions would seem to point to a fairly even and satisfactory market, more than usually devoid of the speculative element, and consequently insuring the producers of the country a larger proportion of the money paid for the product by the consumers than they usually receive.

A Farmers' Co-Operative Movement.

The farmers of Long Island are planning a co-operative association based on original and different plans from any that has yet been organized. It is planned to call a general convention of the farmers of Long Island together with bankers and business men under the auspices of the Long Island League. Commenting upon the plan, the President of this League outlined the scheme, which is in brief as follows:

Capital will be solicited from well-to-do farmers and business men to build a big cold storage warehouse, to be managed by an office force selected by the association. The plan is to issue warehouse receipts for all products delivered to same at about 50 per cent of the value of the products, as shown by current quotations on the New York market, these receipts to be negotiated by the banks and affording the producer an immediate price which would approximate that received from commission men under present conditions. The warehouse association would then sell at wholesale and to peddlers the products brot by members of the association, and at stated periods the profits derived over and above the purchase price would be divided among those to whom the warehouse certificates were issued in proportion to their amount. The originator of this scheme explains that in outlining the plan he has followed as closely as he could the plan pursued by the meat packers in handling their warehouse and refrigerator plants.

Already there is in operation on Long Island an organization of farmers known as the Long Island Potato Exchange, which was started as an experiment, and the workings of which it is said have been exceedingly satisfactory. Membership in this Exchange is purchased by buying stock. The potatoes are turned over to the Exchange, which pays a uniform price for them, holding and disposing of them to the best advantage. It is authoritatively stated that upwards of 1,000,000 bushels of potatoes have been handled by this Exchange this season, the first of its existence. The profits of the business accrue to its stockholders as in the other plan.

The result of these organizations will be watched with much interest by farmers all over the country. The organization of potato growers is right along the line which we have advocated in the Michigan Farmer as best to follow in forming co-operative associations in Michigan. This special industry has proven the best unit for co-operation in Denmark and other European countries, where co-operation has reached its highest development. It has succeeded very admirably in our co-operative creameries and cheese factories; it is developing along this same line in the cow testing associations which are now becoming numerous in Michigan, and is free from the complications and disadvantages which are certain to be encountered in a general co-operative business.

The larger plan outlined as being contemplated by the farmers of Long Island is a novel and ingenious one, and may be more successful than others of its kind have been, but the less the complications in a co-operative undertaking the more certain is its success, and there is plenty of room for the farmers of Michigan to co-operate along the line of special industries with a minimum of risk and a maximum of profit.

A bill is now pending before Congress which provides for "preventing the manufacture, sale or transportation of adulterated or misbranded fungicides, Paris greens, lead arsenate, and other insecticides and for regulating traffic therein." This bill is of particular interest to practically every farmer, as all use insecticides or fungicides in some form.

Inasmuch as practically all of these preparations are manufactured in a few

states it is a better way to control them by national rather than state laws, as the great bulk of the product enters into interstate commerce, so that the national laws would apply in its control. In recent practice the number of insecticides and fungicides have greatly increased, and analysis has shown different brands of same to vary materially as to strength and purity. It is obviously important that these products be standardized so that the user may know just what he is getting when he purchases them, and thus know what strength he should use for a given effect in their application. Without question, inspection and analysis which would show the exact contents of these goods would tend to their standardization and would be of distinct value to the users.

At a conference of manufacturers, entomologists and agricultural chemists held in New York last June, the original bill, which was introduced at the last session of Congress, was carefully discussed and with the recommendation of numerous amendments it was endorsed by the conference. While there was naturally a difference of opinion with regard to some of the provisions of the bill, its endorsement by a body of manufacturers and scientists, who might be considered as the official representatives of the consumers, should insure its early passage and thus dispose of a vexed question which has been a subject of frequent discussion among horticulturists and others who are large users of such goods. In the meantime it would not be amiss to advise your congressman of your wishes and opinions in the matter.

HAPPENINGS OF THE WEEK.

Foreign.

Now that communication has been restored between the civilized world and Southern Italy, the former disconnected reports of the terrible calamity resulting from the earthquake there, are being corrected, but only to show the tragedy to be one of the worst of history. The estimated number of killed is far above the 100,000 mark and is generally placed around 200,000. Whole towns and cities were left complete wrecks by the shocks. Messina and Reggio, of Sicily, appear to be the scenes of the greatest damage and the most suffering. Last Sunday another strong shock occurred in the southern part of the island and a number of buildings collapsed but the extent of the fatalities are believed not to be large; however, the people are terrified and refuse to enter their homes for fear that another shock will topple them, and instead are camping in the streets and fields. From all over the world, food, medicine, clothing and funds are being rushed to help the unfortunate people. The American auxiliary cruiser was ordered to the scene of the disaster and was expected to arrive the early part of this week with relief. Last Sunday was a day for general mourning the world over and meetings were held in cities throughout this country for the purpose of raising funds to alleviate the sufferings as much as possible.

The American battleship fleet arrived at the Suez Canal on the morning of January 3. Since leaving Colombo the fleet has gained two days over its schedule time. Arrangements had been made to make a short stay at the Canal but the proposed plan of sending the ships to the scene of the disaster in Italy has caused all haste in coaling the vessels and hurrying them on to the scene should their assistance there be needed to relieve suffering and prevent pillaging.

The prohibition by the police of the sacrifice of cows, one of the rites of the Mohammedan religion, caused a riot when the worshippers met in a small suburb of the city of Calcutta in deference to the order. Troops were called out to quell the riot and it became necessary to fire into the crowd, which resulted in killing several and wounding about 60 persons.

The grand councillor and commander-in-chief of the forces of China was recently removed and a successor chosen. The removal is not generally well received among the foreign diplomats at Peking who have been in session twice since but have made no representation to the government. They believe the foreign trade will suffer from the change.

A number of arrests were recently made at Tsarkoe Selo, Russia, in connection with an explosion which revealed a plot against the imperial family.

Ex-President Castro, of Venezuela, was suddenly stricken worse a few days ago and taken to a sanitarium in Berlin, Germany, where an operation will be performed.

Because there had been no reorganization of the naval department of the Russian government the committee on defense of the Duma refused to allow the appropriation asked by the government for the construction of four new battleships.

At the last session of the English parliament a motion was passed for pensioning persons over 70 years of age. On the first of January there were 700,000 applicants for the benefit offered by the statute. Postmasters are made agents of the government to pay out moneys to persons meeting the requirements of the law.

Light earthquake shocks were felt in the city of Algiers, Algeria, last Friday. No damage is reported.

The major part of the Chinese section of Cebu, Philippines, was destroyed by

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fire last week. Damage amounted to about \$250,000.

National.

A conference will be held in Washington, January 25 and 26 for discussing problems connected with the dependent children of the country. The conference was called upon the initiative of President Roosevelt.

The new battleship Delaware will be launched at Newport News, Va., the early part of February. This vessel is the first of the Dreadnaught type and with her sister ship, the North Dakota, which is now under construction will be the largest in the United States Navy.

Official reports of the first season's cultivation of the Burbank thornless cactus show the experiments to be successful and there is great faith that the plant will prove a boon to much of the western desert country.

In anticipation of a large increase in the demand for carrying freight and passengers, railroad companies are rushing orders for new equipment and for repairing rolling stock and roads.

A movement is started for the erection of a large central wool storage house in Chicago. The parties interested in the enterprise will soon have the work under way. Already about 25,000,000 pounds of wool are pledged by growers located in western states.

Abraham Lincoln's 100th anniversary will be celebrated in Chicago throughout the week beginning February 7.

The by-law to reduce the number of hotel and saloon licenses in the city of Toronto from 150 to 110 was carried at the recent election.

The United States supreme court decided Monday that the Chicago & Alton railroad was guilty of paying rebates to a packing concern. A \$40,000 fine was imposed.

On Monday a bill appropriating \$400,000 for the erection of an embassy building in Paris, France, was passed by the U. S. Senate.

Congress voted to send the Italian sufferers \$500,000 in money besides \$300,000 worth of provisions.

The total annual fatality of wage earning men in the United States is about 35,000. It is estimated that this number could be reduced by one-third if rational methods of factory inspection were universally adopted throughout the country.

The first division of the American fleet now located at the Suez Canal has been ordered to Naples where it will sail immediately and offer the service of the ships and the men to the rescue of the earthquake sufferers.

CROP AND MARKET NOTES.

Grand Traverse Co., Jan. 4.—We are having fine weather; winter grain is well protected with about eight inches of snow. Stock of all kinds looking good; about all the farmers have to do now is the chores, and get up the next year's wood supply. Potatoes are moving very slow at fifty cents per bushel, in fact, there isn't many to sell as they were a light crop in this county. The markets are: Wheat per bu., 95c; oats, per bu., 52c; buckwheat, per bu., 75c to 80c; apples loose, per bbl., \$1 to \$1.50; butter, dairy, 25c to 26c; eggs, per doz., 27c to 28c; hogs, choice, 5c.

Gratiot Co., Dec. 28.—Since Dec. 24th, about six inches of snow has been spread evenly over Gratiot county, held down by a light sleet. The sleighing, which has been good for a week, is getting thin. Wheat has a splendid cover. Some farmers are taking time by the fore-lock and putting in tile. Only in a few places is the ground frozen so that the crust cannot be spaded. Shipments of stock are light. Hogs less than 150 lbs. are not on the market. Butter and eggs are high. Poultry is in good demand.

CATALOGS RECEIVED.

"Sloman's Encyclopedia of Fur Facts and Things Worth Knowing," is a vest pocket pamphlet containing 132 pages, published by M. Sloman & Co., importers of and dealers in raw furs, 118-120 Congress Street West, Detroit, Mich. As the title indicates, it contains a large quantity of useful information on a great variety of subjects aside from concise information with regard to all kinds of furs.

The Johnston Harvester Co., of Batavia, N. Y., are sending out a handsome catalogue with two-color illustrations showing in detail every working part of their line of binders, reapers, mowers, tedders, discs, etc. In the construction of their machines is made so plain by the illustrations that little explanatory matter is required.

Spray pumps and appliances, manufactured by the Deming Co., Salem, Ohio, are fully described and illustrated in a 32-page catalogue, issued by that company, for 1909. Their full line of hand and power spray pumps, nozzles and appliances for all uses are illustrated in detail and indexed in accordance with the several uses to which they are adapted.

Studebaker Bros. Mfg. Co., South Bend, Ind., are mailing a Farmers' Almanac and Weather Forecast for 1909, containing a large amount of useful information upon a great variety of subjects, and incidentally referring to their complete line of vehicles, harnesses, bolster springs, etc.

Burpee's Farm Annual for 1909, published by W. Atlee Burpee & Co., Philadelphia, Pa., is "The Plain Truth about the Best Seeds that Grow," as they refer to their large line of farm, garden and flower seeds, listed in this 175-page catalogue.

The Farmer's Almanac and Encyclopedia for 1909, published by the International Harvester Co., of America, Chicago, U. S. A., is replete with scientific facts and useful information of wide range and, incidentally, it describes the line of goods manufactured by this company for farm and home use, such as harvesting machinery, tools, motors, etc.

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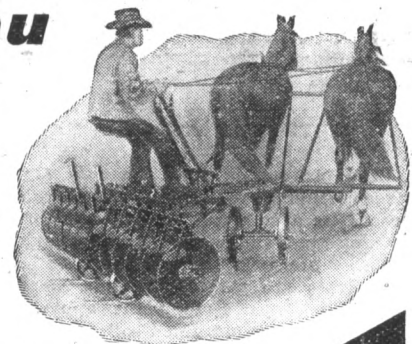
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HORTICULTURE

SOD MULCHED TREES.

The apple orchard that was set last spring, partly in sod and partly cultivated, a catch crop of potatoes being grown, has made a good growth the past summer, and as yet there is little difference between the trees in sod and those in cultivated ground. The sod trees were mulched as soon as set, with coarse manure and have been given another supply of trash from the strawberry beds during the summer. The grass and clover was cut for hay in June, and the after growth now stands on the ground and will make a good trap for the snow. Most of this ground is a side hill and there is little danger of washing under this system, but if the mulching is neglected after a time and the grass is continually removed the results may be unsatisfactory. The ease with which trees handled in this manner may be neglected is a strong argument for cultivation.

The cultivated portion grew a crop of potatoes this season, and will be set to strawberries in the spring. The trees are mulched with straw and a coat of fine manure has been applied between them with the spreader. Another application will be given late in winter or in the spring, and the ground disked for strawberries.

The trees set some three years ago, some on cultivated ground and some on sod land are both doing quite well except for one variety, which did not do so well from the start, and many had to be replaced, but I think the cultivated trees as a whole have the lead in size and vigor. In this case the varieties are different, so it is difficult to compare the results. The mulched Stark trees are as large and thrifty as the Grimes and Wealthy on the cultivated soil, but the Wagners on sod ground are not doing as well and are much behind Wagners set on cultivated ground the year before. I believe it will be possible to obtain good results with either system if followed up thoroughly and intelligently, also to fail with either if neglected.

Calhoun Co. S. B. HARTMAN.

STARTING AN APPLE ORHARD.

The old saying that the hole for the tree should be the same size as the orchard, is a safe rule to follow and really means that the whole ground should be thoroughly prepared at least one year before the trees are planted. It is a waste of time and money to plant apple trees upon a wet or undrained soil. Unless the natural drainage is excellent the orchard site should be tile drained and the soil put in a good physical condition.

In setting out fruit trees we must bear in mind the fact that we are not setting out a crop for a single year, but that the trees will remain for many years to come and that errors that are made cannot be readily corrected—hence an orchard should never be planted in a hurry. Spring and fall planting both have their advocates and each has a special advantage over the other; and with proper surroundings and under proper conditions and with proper precautions either may be successful. For fall planting trees should be set early in October; later planting has been successful in many cases, but sometimes an early freeze may do permanent injury, as the trees do not have the same protection that they do in the nursery rows.

One strong argument in favor of fall planting is that we have the time to perform the work in a better and more thorough manner. As a general rule better trees can be selected from the nursery rows early during the fall before they have been culled. More time may be spent in preparing the soil and in many localities where the ground does not freeze deeply the new root fibers and feeding hairs will be ready to start at the first approach of spring.

During recent years there seems to be a marked tendency to buy one-year-old trees for planting. There are numerous advantages in planting one-year-old trees. They are easy to handle. They are fully as vigorous and in many sections where low and medium heading is being practiced, they are easier to train in the desired way.

Trees should be taken up carefully from the nursery rows, but the old idea that we should take up the tiny rootlets and hair roots is generally ignored during recent years. When the trees are

being prepared for planting, all broken and bruised roots should be cut off cleanly with a sharp knife, for the new fibers will start quicker from the roots when they are properly pruned before the tree is planted.

We must keep in mind the fact that these young trees as they come from the nursery have been grown in the very richest soil and usually with a nitrogenous manure or fertilizer, and that to use stable manure near the roots, would only be increasing the difficulty. What these young trees need is a fertilizer that will promote a good growth of strong wood, fruit buds and seeds. These elements are potash and phosphoric acid. The potash will promote the growth of strong wood, having a tendency to make the fruit set thickly, help to increase the starch in the fruit, and to a degree at least, heighten the color of the fruit. The phosphoric acid will perfect the seed, without which no tree can bear choice fruit, and also improve the quality.

We have made a practice of using one part muriate of potash and two parts of fine raw bone when setting out grape vines and apple trees. This we work into the soil around the trees at the rate of about two quarts to a tree. When the orchards are older and have exhausted a large proportion of the available plant food in the soil many successful orchardists practice sowing about 400 or 500 pounds of this mixture annually. When these minerals are used as a fertilizer, stable manure or legume cover crops can be used with safety, but to apply stable manure or cover crops that would supply the trees with too much nitrogen would encourage a growth of inferior wood that would winter kill. Always broadcast stable manure when applying it to an orchard soil.

If we plant small crops like potatoes, tomatoes and other truck crop in the young orchard and fertilize liberally they will prove very beneficial to the young trees and the land can be made to pay a very fair income. However, we must keep in mind that we are growing two crops on the same soil and fertilize accordingly. Some orchard authorities claim that we should cultivate the trees but not grow any crops in the interspaces but that method is not true economy. When a cultivated crop is grown it serves every function of a cover crop and what fertilizer is not utilized by the crop may go to fertilize the young trees. When a cultivated crop is grown between the trees it should be harvested early in the fall and the ground seeded with a winter cover crop. About every four years a crop of clover should be grown and plowed under, not only as a source of plant food but to give the soil the desired porosity. There are numerous crops that may be utilized as cover crops according to the soil, climate and the particular season of the year that it is desired to be sown. When we grow a cultivated crop among the small trees cultivation should cease about the last week in July, for as a rule late cultivation has a tendency to promote a late growth of wood that will not mature by the time cold weather comes.

Any rational system of cultivation is better than allowing a sod to form around the young trees to afford a lodging place for the larva of numerous insects, however, for a mature orchard that may be turned into a pasture for sheep and swine, sod culture is many times to be preferred. They fertilize the soil and eat the fruit as fast as it falls and destroy the apple magot. Of course, there can be no gain in fertility unless they are fed grain or forage in addition to what grazing the orchard affords.

Pruning should be done yearly from the time the trees are set and it should only be necessary to remove small branches of superfluous wood, and an occasional dead or broken limb. It is all wrong to allow a tree to grow a large limb and then cut it off, because it is in the wrong place. The removing of such large limbs is a detriment to the tree. In too many instances pruning takes place about every five or ten years and at that time it is performed by a tree butcher. There is no best time to prune. First take out all the water sprouts and dead branches, then the smaller limbs and those that are mixed up or entangled with the other parts of the tree. Always cut a limb close to the body of the tree and never cut them in a manner that will split the trunk or limb that they are attached to when they are removed. I have always found it an excellent plan to paint the wound with some good waterproof paint soon after pruning. Another matter, it is not a judicious plan to have

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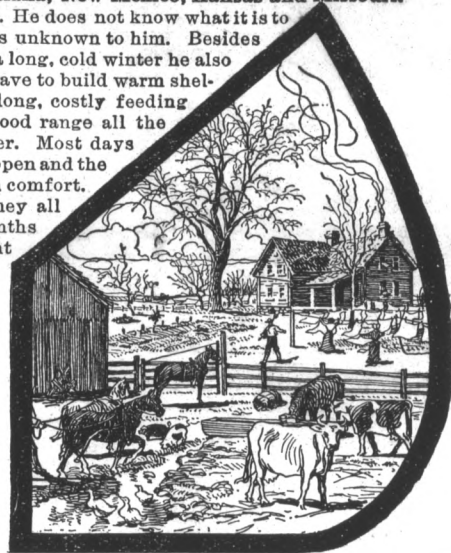
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all of the fruit buds at the ends of the limbs. Prune so that the fruit bearing surface will be evenly distributed over the whole of the tree. Trees seldom bear heavy enough crops of apples to break them down if the fruit is evenly distributed over the whole surface of the tree.

Spraying is essential to successful apple growing and to keep the young trees free from disease and insect pests they must be thoroly sprayed. Spraying is not a cure-all for bad management but simply one of the essentials of successful apple growing. When we find an orchard that has been well managed we usually find a very profitable investment.
New York. W. MILTON KELLEY.

ASPARAGUS CULTURE.

The prime essentials for a profitable handling of this plant are location, a light, sandy soil, and a system of thoro drainage. In selecting a location it is well to understand that this edible differs considerably from its associates in the vegetable garden, in various and important particulars. One commendable feature is its place of first rank, as the earliest heraldry of spring from the open garden products for the table, while its refreshing delicacy and ready marketable value at this season are of inestimable assistance to the grower, in providing as it does, available money on hand to meet expenses incurred by employment of extra help during seed and planting time. If proper precautions are given to insure success at the planting there is no reason why it should not become the staple article of supply in all market gardens of the country, for its simplicity of culture and staying powers of supply in either wet or dry seasons entitles it to the highest standard of merit in the vegetable kingdom, par excellence.

If given the proper "right of way," with dry feet from the first year of its journey it will remain in undisputed possession of its staying qualities in delicacy and money value thru the long period of 30 years, by which time the crown roots will have become so tightly interwoven that they will have either to be replaced, or lifted and thinned out. The location, therefore, should be where there is the least likelihood of interference with the conveniences of adjacent cultivation, especially to be avoided is contact with undersurface roots, such as fruit trees, shade or shrubbery, as they are liable to impede the straight or direct upward growth of the tender undeveloped shoots, while it is likewise imperative for the same reason to remove all obstructions, such as wood chips, stones, etc., from the surface over the plant row.

Where choice of soil is optional it is always best to favor a light sandy soil, as this is easiest thru which the tender shoots make the most rapid growth, and by reason of this quick maturity they are the choicest in point of delicacy in flavor and command higher prices. For obvious reasons, therefore, a preference is always to be given to ground possessing the nearest approach to natural drainage, such as is presented by the angle on a gentle slope or slightly undulating surface so as to permit of an easy roll away of heavy rain falls, but while occasional washings, and even submersions, are not strictly injurious, such visitations are neither beneficial nor desirable, in as much as other seeds and weeds may find a footing where they should not.

But all farms are not alike in natural resources, hence on level or stiff land less favorably adapted to our subject experience has shown, that with a little assistance given to dame nature, in the form of artificial drainage, excellent results may be obtained at a trifling cost of time and labor. With this object in view I beg to submit a synopsis of my own form of procedure and fully attested experience as the fruits of observation in other countries and climatic conditions. I do this the more readily for the reason that a local resident—an ex-senator, and others in Wayne and Oakland counties claim that it is extremely uphill work or next to the impossible, to get the grade of quality or quantity as found in the vague land of "Milk and Honey"—way down east. The secret (if secret be the word to convey the sense), of success in asparagus culture lies among the stones and tile in the ditch, of thoro drainage. The trench or ditch formation may be any desired length, 18 inches wide, and from 30 to 40 inches deep, according to the necessities of local conditions, viz., on light sandy soil or on slope land 30 inches deep, on stiff or level ground, 36 inches, and if with an inclination to the soggy, 40 inches. The planter

determines the length by the number of plants by allowing nine inches from centre to centre of the crown between the plants, thus 95 foot rows will give 7½ inches at each end of the row, with 125 plants placed nine inches apart between the ends. Having determined the length, run the plow to its utmost depth two or three times and finish up by squaring trench with hand shovel. Then from the rough cobble stones available on most lands, fill in for a 30 inch drain, 18 inches of these, placing the larger in the bottom of trench and use the smaller (base ball size), to fill up crevices. For a 36 inch depth allow two feet of stone, in a 40 inch depth, especially if inclining to the soggy, insert a two inch tile and connect by trap to main surface drain, then fill in on top with 28 to 30 inches of stone. Over the stone a layer of rough stable manure is firmly tramped under foot to the depth of six inches, and for the six inches of space left in the depth of trench soil is thoroly mixed with well rotted barnyard manure and then shoveled in to the depth of three inches, with the centre slightly elevated to receive the plants, astride the elevation, with roots spread out, as if designed to the process of weather drying. Having set the plants to a straight line in the centre, cover over gently with the remaining soil of three inches already mixed, and scatter one quart of wood ashes over each nine feet of surface and finish up by carefully raking in the ashes, so as to leave a smooth and even surface. Nothing further is required the first year beyond loosening of the soil from time to time, either with a 10 inch rake or barn fork, and keeping a lookout for weeds until November, at which time the seeds are collected for future use in spring and may be sown in rich pulverized ground in rows 12 inches apart by two inches deep, and when large enough to handle are then thinned out to one inch apart. Having secured the seeds the brush is cut down and burned and the plants are then covered up for the winter under four inches of rough stable manure. In spring the very rough is raked off and the balance, after a sowing broadcast of one quart of wood ashes (hardwood is best), per nine feet run, as when planting, is then carefully forked into the ground. This operation is followed a week later with one quart of salt per nine feet as top dressing, which, by its gradual process of assimilation with the potash contained in the wood ashes, forms a chemical compound unsurpassed in nutritive elements for the furtherance of development of this particular source of revenue in the market garden.

Time of planting in spring is from April 1st to June 15th, or in fall from Oct. 15th to Nov. 25th. It is customary in spring to plant two-year-old plants, or three-year-olds in fall, but never cutting from two-year-olds the first year, while in the second and third year cutting is done only up to the time of gathering the early pea crop in order that full strength may be centralized in development of crown roots, thus insuring for the fourth year an approximate yield of 1,000 bunches. Bleaching asparagus is done by throwing (by means of plow or hoe), a 5-6 inch ridge of soil against the plants without covering the top of the plants, and kept thus for a week or so. The Palmetto is the leader in the market at present.
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Some of the early symptoms of weak kidneys and bladder are lumbago, rheumatism, catarrh of the bladder, pain or dull ache in the back, joints or muscles, at times have headache or indigestion, dizziness, you may have a sallow complexion, puffy or dark circles under the eyes, sometimes feel as tho you had heart trouble, may have plenty of ambition but no strength, get weak and waste away.

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MARKETS

DETROIT WHOLESALE MARKETS.

Jan. 6, 1909.

Grains and Seeds.
Wheat.—Prices are ruling on last week's basis. The news for the week was largely bullish—receipts are lighter than a year ago, the demand for flour is good, Liverpool continues a rather firm market and steady prices. Argentine conditions may be a little improved for the bears but the crop there is several million bushels short of last year's, and the cold wave that is now upon this country is finding winter wheat fully exposed to the changes of the weather. Despite this bullish situation on Tuesday there was a decline in values of about 1/2c caused by heavy holders in the Chicago market selling. On the Detroit market one year ago No. 3 red wheat was valued at \$1.03 1/2. Quotations for the week are:

	No. 2	No. 1	No. 3	Red	White	Red	May	July
Fri.	1.05 1/2	1.04 1/2	1.02 1/2	1.09	1.01 1/2			
Sat.	1.05 1/2	1.04 1/2	1.02 1/2	1.09 1/2	1.01 1/2			
Mon.	1.05 1/2	1.04 1/2	1.02 1/2	1.09 1/2	1.01 1/2			
Tues.	1.05 1/2	1.04 1/2	1.02 1/2	1.09 1/2	1.01 1/2			
Wed.	1.05 1/2	1.04 1/2	1.02 1/2	1.09 1/2	1.01 1/2			

Corn.—Prices have held at the closing price reported in last week's issue which was the highest of a week ago. There is a moderate amount of activity in the trade here. At Chicago cash corn has been selling well. The export demand is easy. Last year at this date the market here quoted No. 3 corn at 59 1/2c. Quotations for the week are:

	No. 3	Yellow
Thursday	60 1/2	61 1/2
Friday	60 1/2	61 1/2
Saturday	60 1/2	61 1/2
Monday	60 1/2	61 1/2
Tuesday	60 1/2	61 1/2
Wednesday	60 1/2	61 1/2

Oats.—Values are higher than a week ago. The market is firm. The demand for cash oats is constant. The visible supply was increased but a few thousand bushels for the week. The receipts at elevators are small. A year ago the Detroit price for No. 3 white oats was 53c. Quotations for the past week are:

	No. 3	White
Thursday	53	
Friday	53	
Saturday	53	
Monday	53	
Tuesday	53	
Wednesday	53	

Beans.—Nothing has occurred in the bean deal to alter the dull conditions of the market that have characterized it for these many weeks past. Many farmers are holding their surplus bushels with the belief that prices will advance later as they figure that the crop was smaller last season than normal and they can expect more than is now offered. One year ago cash beans were nominally quoted at \$2.00 per bushel. The nominal values placed on the product the past week are:

	Cash	May
Thursday	\$2.15	\$2.20
Friday	2.15	2.20
Saturday	2.15	2.20
Monday	2.15	2.20
Tuesday	2.15	2.20
Wednesday	2.15	2.20

Cloverseed.—There was a slight improvement in values the past week and the demand which has been good all along during December until now continues active. The fact that the extremely high prices of last year cleaned up all the old seed improved the demand for the new crop. Quotations for the week are:

	Prime	Spot	Mar.	Alsike
Thursday	\$5.55	\$5.65	\$7.50	
Friday	5.55	5.65	7.50	
Saturday	5.55	5.65	7.50	
Monday	5.55	5.65	7.50	
Tuesday	5.55	5.65	7.50	
Wednesday	5.55	5.65	7.50	

Rye.—Market continues dull and inactive with the price fixed at last week's value. Quotation for cash No. 2 is 77 1/2c.

	This week	Last week
Wheat	51,759,000	51,676,000
Corn	7,165,000	6,994,000
Oats	10,629,000	10,248,000
Rye	1,022,000	1,080,000
Barley	5,082,000	5,396,000

Flour, Feed, Provisions, Etc.

Flour.—Unchanged. Demand is good. Receipts of flour on Tuesday were 400 bbls., and shipments 400 bbls. Quotations are as follows:

Clear	\$5.00
Straight	5.15
Patent Michigan	5.75
Ordinary Patent	5.25

Hay and Straw.—Prices unchanged. Carlot prices on track are: No. 1 timothy, new, \$10.50@11; No. 2 timothy, \$9.50@10; clover, mixed, \$9@10; rye straw, \$7.50; wheat and oat straw, \$6.50 per ton.

Feed.—No change in prices. Bran, \$24 per ton; coarse middlings, \$25; fine middlings, \$28; corn and oat chop, \$25.50; cracked corn and coarse cornmeal, \$28.50.

Potatoes.—Taking the country as a whole there has been a stronger feeling in the potato trade and as compared with last week prices are a little higher. Locally the business is a little slow and values are the same as a week ago. Good stock is selling at 70c.

Oils.—Lard in barrels, 52c per gal; lard oil, extra winter strained, 80c; extra No. 1, 66c; No. 1, 50c; No. 2, 45c; stove gasoline, 13c; headlight kerosene, 9 1/2c; perfection, 10c; turpentine by the bbl., 45c per gal.

Provisions.—Family pork, \$17@17.50; mess pork, \$16; light short clear, \$18.25; heavy short clear, \$18.75; pure lard in tierces, 10 1/2c; kettle rendered lard, 11 1/2c; bacon, 11 1/2c; shoulders, 7 1/2c; smoked hams, 10 1/2c; picnic hams, 7c.

Hides.—No. 1 green, 9 1/2c; No. 2 green,

8 1/2c; No. 1 cured, 11 1/2c; No. 2 cured, 10 1/2c; No. 1 green kip, 11c; No. 2 green kip, 9 1/2c; No. 1 cured calf, 15c; No. 2 cured calf, 13 1/2c; No. 1 horsehides, \$3.25; No. 2, \$2.40; sheepskins, as to wool, lambs, 50c@51.

Dairy and Food Products.

Butter.—This market continues steady at last week's range of prices except for dairy goods, where an advance of one cent was made. The demand is good considering the high values. Quotations: Extra creamery, 32c; firsts, 30c; packing stock, 19c; dairy, 23c.

Eggs.—Market is steady at last week's values. Storage eggs were apparently not secured in large quantities last season. Fresh stock is quoted at 29c per dozen; refrigerator extra, 25c.

Poultry.—This trade continues in good shape with quotations showing a tendency upward. Advances are made in most kinds of live poultry. Quotations: Dressed chickens, 14c; fowls, 13c; ducks, 14@15c; geese, 12@13c; turkeys, 18@20c per lb. Live—Spring chickens, 13@14c; fowls, 12@13c; ducks, 13@14c; geese, 13@14c; turkeys, 17@18c per lb.

Fruits and Vegetables.

Apples.—Market steady. Best grades are quoted at \$3.25@4.50 per bbl. Western apples in bushel boxes, \$2.75@3.

Grapes.—Market is small. Catawba, 20c per pony basket.

Onions.—Spanish, \$1.65 per bu; home-grown at 60@65c per bu.

Cabbage.—Home-grown selling at \$6@7 per 100 heads.

Vegetables.—Green onions, 15c per doz; radishes, 30c per doz; cucumbers, \$1.90 @2 per bu; lettuce, 13c per lb; head lettuce, \$1.20 per doz; beets, 40c; turnips, 40c; carrots, 40c; watercress, 40c per doz; celery, 20@35c; spinach, \$1 per bu; parsnips, 55c per bu.

OTHER MARKETS.

Grand Rapids.

With the exception of a little lower quotation on dressed hogs, the market in most lines is steady this week. Eggs are holding their own, even tho the supply of fresh laid is increasing. The supply of storage eggs is exhausted. Wheat remains unchanged at 99c. Hay is bringing \$10 to \$11. Potatoes are worth 60c to 65c here, and around 55c at outside loading stations.

Quotations follow:
 Grains.—Wheat, 99c; corn, 60c; oats, 51c; buckwheat, 80c per bu; rye, 70c.

Beans.—Handpicked, \$1.90 per bu.

Butter.—Buying prices: Dairy, No. 1, 24c; No. 2, 17c; creamery in tubs, 31 1/2c.

Cheese.—Michigan full cream is selling at 13@14c per lb; brick, 15c; Swiss, 16c; limburger, 15c.

Eggs.—Case count, 27@28c; candied, 30@31c.

Apples.—75c@1.25.

Potatoes.—60@65c per bu.

Cattle.—Cows, \$2.50@3 per cwt; steers and heifers, best quality, \$3@4; dressed mutton 6c; dressed veal, 6 1/2@7 1/2c; dressed beef, cows, 4 1/2@5 1/2c; steers and heifers, 5 1/2@7c.

Hogs.—Dressed, 7c.

Live Poultry.—Fowls, 9@10c; spring chickens, 10@11c; roosters, 7@8c; turkeys, 16@18c; young ducks, 10@11c; geese, 9@10c.

Cincinnati.

Potatoes.—Market lower. Bulk on track, 73@75c per bu.

Butter.—Creamery prints, 34 1/2c per lb; extra, 34c; firsts, 31 1/2@32c.

Eggs.—Extra, 31c per doz; firsts, 30c.

Apples.—King, \$4.50 per bbl; snow, \$3.50; Baldwins, \$3.75; Spy, \$3.75; Greenings, \$3.50@3.75.

Poultry.—Live—springers, 13c per lb; hens, 11 1/2c; cocks, 6 1/2c; ducks, 10@11c; turkeys, 18c.

New York.

Grain.—Wheat, No. 2 red, 1.06 1/2@1.08 1/2; corn No. 2, 66 1/2c; oats, mixed, 54@54 1/2c.

Eggs.—Easier. Western firsts, 32c; seconds, 30@31c.

Butter.—Firm. Creamery specials, 33@33 1/2c; western factory firsts, 21 1/2@22c.

Potatoes.—Firm. Western, in bulk per 180 lbs., \$2.25@2.37; per bu, 80c.

Poultry.—Dressed, firm; western spring chickens, 16@20c; spring turkeys, 19@23c; fowls, 10@14 1/2c.

Hay.—Choice timothy, \$17; No. 1, \$16@16.50; No. 2, \$15@16.50; No. 3, \$13@14; shipping, \$13; little clover, mixed, \$15@16; No. 1 clover, \$14; No. 2, \$12; No. 1 rye straw, \$18.50@19; No. 2 do, \$17; No. 1 tangled rye, \$12; oat straw, \$8@9; wheat, \$9.

Pittsburg.

Butter.—Creameries, 34 1/2@35c per lb; firsts, 32@33c; prints, 35@35 1/2c.

Eggs.—Higher. Fresh candied, 37@38c; current receipts, 35@36c.

Potatoes.—Prices higher. Michigan, 80@85c per bu.

Apples.—King, \$4.50 per bbl; spy, \$3.75@4.25; Spitzenburg, \$3.75@4.25.

Poultry.—Dressed. Turkeys, 27@28c; spring chickens, 17@18c; hens, 16@17c; ducks, 15@18c.

Boston.

Wool.—The supplies of the more staple kinds of wools are pretty well cleaned up and the mills at the present time are well provided with raw material to run for some days. This makes the trading dull and brokers are waiting till the demand improves. The trade is firm, however, and there is no feeling of a weakening of values for the supply is surely to be used before another clip will be ready for the consumers. The following are the leading quotations for domestic kinds: Ohio and Pennsylvania fleeces—XX, 34@35c; X, 31@32c; No. 1 washed, 38@39c; No. 2 washed, 36@39c; fine washed, 23@24c; half blood combing, 30c; three-eighths blood combing, 29@30 1/2c; quarter blood combing, 28c; delaine washed, 36@37c; delaine unwashed, 29@30c. Michigan, Wisconsin and New York

fleeces—Fine unwashed, 21@22c; delaine unwashed, 27@29c; half blood unwashed, 27@28c; three-eighths blood unwashed, 27@28c; quarter blood, 26@27c. Kentucky, Indiana and Missouri—Three-eighths blood, 28@29c; quarter blood, 26@27c.

Chicago.

Wheat.—No. 2 red, \$1.05 1/2@1.07; May, \$1.07 1/2; July, 99 1/2.

Corn.—No. 2, 58 1/2@58 3/4c; No. 2 yellow, 58 1/2@59; May, 61 1/2c; July, 61 1/2c.

Oats.—No. 3 white, 49@51 1/2c; May, 51 1/2c; July, 46c.

Barley.—Good feeding, 60@61c; fair to choice malting, 62@65c.

Butter.—Steady; creameries, 22@32c; dairies, 21 1/2@27c.

Eggs.—Steady. At mark, cases included, 25@28c; firsts, 29c; prime firsts, 30c.

Potatoes.—Car lots in bulk. Fancy, 74@76c per bu; ordinary, to good, 62@70c.

Elgin.

Butter.—Market firm at 32c, which is last week's quotation. Sales for last week amounted to 598,300 lbs., compared with 611,200 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Chicago.

January 4, 1909.

Received today 38,000 48,000 26,000
 Same day last year 32,003 65,591 21,678
 Received last week 51,810 175,577 68,416
 Same week last year 52,597 189,577 61,571

Cattle were not in anywhere near as large demand last week as in most weeks, for it was a time when poultry rather than beef was popular everywhere, but as country shippers held down the receipts to moderate proportions, the market developed a strong undertone much of the time. It was not the best cattle that were most wanted, however, and despite the fact that very few of these were offered, they usually failed to sell higher. When rallies in prices did take place it was usually in the rather ordinary and good cattle rather than in prime beefs of the shipping class. Beef steers sold largely at \$4.75@6.75, with the poorer light-weight steers selling at \$3.60@4.60 and the better class of shipping steers at \$6.50@7.50. Light cuts of beef have been the most popular recently, and this naturally is a great help to the trade in butcher stock, cows and heifers selling at \$2.75@6 and canners and cutters at \$1.50@2.70. Bulls have been good sellers at \$2.50@4.50, and calves went at \$4@9.50 per 100 lbs., prices being the highest seen in a year, owing to the meager offerings. Milkers and springers had a fair sale at \$25@50 per head, only moderate numbers being offered. Stockers and feeders were in excellent demand at \$2.60@5, with the best call for choice feeders, which were apt to be very scarce and tending upward in price, as they were also wanted by killers. Prospects look bright for the cattle feeding industry, and no good reason can be seen for sacrificing half-fat cattle, but the prevailing opinion is that short feeding is the road to success for the average stockman, altho some make long feeding pay.

Cattle were largely 25@40c higher last week, but today's unusually large receipts caused a decline of 10@15c. The best steers offered went at \$7.35.

Hogs have been in excellent demand for another week, and the offerings were well taken, all classes of buyers taking hold freely. There has been marked improvement in the eastern shipping demand, the better class of hogs being wanted, and this exerted a decidedly bullish influence, forcing the local packers to pay higher figures much of the time. Gradual improvement is seen in the quality of the hogs coming to market, but the lighter weights are forming an unusually large percentage of the receipts, the average weight recently being but 205 lbs., compared with 209 lbs. a year ago and 223 lbs. two years ago. The heavier hogs continue to sell the highest and the medium weight butcher hogs the slowest and weakest. The great decline that has taken place in prices for corn should encourage farmers to make their cattle and hogs fat. Later in the winter smaller supplies of hogs and higher prices are expected. The market was active today, and the liberal receipts failed to force a decline in prices. Hogs sold at \$5.40@6.25.

Sheep and lambs were marketed extremely moderately for another week, and prices underwent some lively advances under the influence of active general buying, there being too few choice muttons to go around. As usual, lambs showed the most animation, with the better class selling at \$7@7.85, and inferior lots going as low as \$4@5.50. Ewes sold at \$2.25@5, according to quality, wethers at \$4.50@5.50, yearlings at \$5.75@7, and rams at \$3@3.75. Buyers in search of feeders could not do much, as most of the offerings were needed by killers. Next to fat lambs, the prime favorites with buyers were fat little yearling wethers on the lamb order. With decidedly fewer flocks feeding than a year ago, there is no lack of encouragement for careful feeders.

The market today was active, but 15@25c lower under larger offerings, the best lambs going at \$7.65 and the best yearlings at \$6.75.

Horses have had a slow market during the Christmas and New Year holidays, and it was no easy matter for sellers to maintain prices for the commoner kinds. Southern chunks were slowest of all at \$60@120 per head, while drafters had a restricted sale at \$165@215, a few finished drafters selling at \$225@275. Light drivers had a moderate sale at \$150@350, and feeders sold pretty freely at times at \$165@215 for shipment to Ohio and Pennsylvania. Sales at private sale were the most satisfactory, as several buyers were in the market for particular classes.

LIVE STOCK NOTES.

For several weeks past there has been a strong demand in the Chicago market for a high-class grade of cattle feeders of heavy weights to be shipped to cattle feeding districts for short feeding. As corn is still selling at high prices, stockmen are disposed to pass by light-weight stock cattle that will require a long feed, and they show a marked preference for cattle that can be returned to market as finished beefs of a superior grade in the course of from two to three months. Unfortunately for the intending purchasers, it is a difficult matter to get hold of such cattle, as they are wanted also for butchering, and this competition makes high prices, the best feeders having sold recently as high as \$5.10 per 100 pounds. In many instances, buyers, finding prices somewhat above their views, take the next best feeders instead.

Cattle exports from the United States for the first eleven months of the calendar year 1908 were but 236,000 head, against 332,000 for the same period the previous year, the valuation for 1908 being but \$21,713,000, compared with \$30,154,000 the previous year. The quarantine caused by the outbreaks of foot and mouth disease in several states was a great drawback, as was the greatly increased competition in Argentine shipments to the British markets. Within a short time the London County Council has been asked that hereafter all British grown beef be so stamped that the purchaser may know what he is buying, it being a well-known fact that many Britains cherish the old idea that home-grown beef is better than any imported beef. Of course, this is far from the truth, and everyone knows that American beef has been sold for British beef for many years, the English beef-eaters failing to discover that they were not eating the "roast beef of old England." It has been the common practice for British retail butchers to claim that they sold nothing but British-grown beef, while selling little else than the imported article.

As the season advances it is noticed that larger numbers of stockmen owning droves of hogs following cattle are being converted to the practice of fattening their swine to a good finish. It is true that feed is still dear everywhere, but there has been a great break in prices of corn through the corn belt, and this is largely responsible for the great change in sentiment on the feeding question. There is a very noticeable improvement in the average grade of the hogs coming to market, but there is great room for improvement in the average weight of the hogs marketed, the average being much less than in most former years. It seems highly probable that later in the winter packing season fewer hogs will be marketed and prices will show sufficient advances to pay farmers for the extra amounts of corn used in the fattening process. It is the heavy lard hogs that are sadly lacking in every market of the country. Marketing pigs and short-weight hogs is bad business policy.

The quarantine against Michigan sheep and lambs has been an extremely important factor in the Chicago market recently, and it has been a serious blow to the Michigan sheep industry for several weeks. The Michigan quarantine has been kept effective so far as Illinois is concerned, and Governor Deneen has manifested a disposition to maintain it, realizing that raising the embargo would cause responsibility to be placed on him if any outbreak of foot and mouth disease occurred anywhere in the state of Illinois. Naturally, the Michigan feeders have been extremely anxious to secure a route to the Chicago stockyards, as there is no prospect of getting thru Canada. Few feeder lambs have been offered on the Chicago market lately, but a consignment of Mexican feeder lambs direct from the range failed to attract Michigan buyers, altho they were good feeders. Lambs of that class are always very popular with butchers when fat, but they sell better in the west than in the east.

The foreign demand for sheep from this country has been falling off this year, despite the cheapness of fat flocks on this side of the Atlantic much of the time. During the first eleven months of the calendar year 1908 only 91,000 head, valued at \$535,000, were exported from this country, as compared with 99,900 head, valued at \$579,000, for the same time in 1907.

Sheepmen have good reason to feel well pleased with the good showing in the wool trade. There is a strong undertone, and prospects are bright for further advances, for it has been many years since such small stocks were seen in the great markets of the United States as those now held. For once, at least, buyers are likely to get the worst of it, and higher prices are reported in the Boston market, where Michigan wool has sold up to 28 cents a pound.

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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.

January 7, 1909.

Cattle.

Receipts, 1,208. Market active at last week's prices.

We quote: Extra dry-fed steers and heifers, \$5.50; steers and heifers, 1,000 to 1,200, \$4.50; steers and heifers, 800 to 1,000, \$4.40; steers and heifers that are fat, 500 to 700, \$3.50; choice fat cows, \$3.75; good fat cows, \$3.50; common cows, \$2.50; canners, \$1.50; choice heavy bulls, \$4; fair to good bolognas, bulls, \$3.25; light bulls, \$3.

Hally sold Jones 14 butchers av 620 at \$3.40.

Aninch sold Rattkowsky 7 butchers av 657 at \$3.

Johnson sold Michigan B. Co. 13 steers av 781 at \$4.25, 3 cows av 800 at \$3.40.

Haley sold same 6 butchers av 616 at \$3.40, 20 do av 705 at \$3.85.

Johnson sold same 30 butchers av 812 at \$3.65, 14 steers av 780 at \$4.50.

Wagner & Co. sold Starrs 2 cows av 1,050 at \$3, 1 do weighing 1,000 at \$2.75.

Wagner & Co. sold Marx 2 steers av 760 at \$4.10, 2 do av 990 at \$3.50.

Downey sold Lingeman 2 steers av 770 at \$4.10, 2 do av 675 at \$3.25, 1 bull weighing 950 at \$3.50.

Heaney sold same 2 bulls av 925 at \$3.25.

Haley sold same 2 oxen av 1,430 at \$3.75.

Graff sold same 4 cows av 820 at \$3, 3 butchers av 760 at \$4.

Clark sold Kamman B. Co. 5 cows av 1,064 at \$3.75, 2 do av 1,085 at \$3.25.

Waterman sold Bresnahan 10 butchers av 737 at \$4, 3 cows av 1,066 at \$3.

Adams sold Sullivan P. Co. 2 bulls av 1,150 at \$3.50, 3 cows av 1,230 at \$3.50, 10 steers av 862 at \$4.60.

Wagner & Co. sold same 1 steer weighing 950 at \$5, 3 butchers av 600 at \$3.

Bishop B. & H. sold Schuman 10 butchers av 586 at \$3.40, 12 steers av 762 at \$4.40.

Bishop, B. & H. sold Kamman B. Co. 2 cows av 965 at \$3.25, 2 bulls av 715 at \$3.25; to Sullivan P. Co. 2 canners av 865 at \$1.75, 6 butchers av 966 at \$3, 1 bull weighing 1,280 at \$3.50, 2 cows av 1,015 at \$3.25, 2 butchers av 1,120 at \$3.25, 6 do av 931 at \$4.50, 1 heifer weighing 730 at \$3.50; to Mich. B. Co. 30 butchers av 724 at \$3.75, 3 do av 746 at \$3, 1 cow weighing 1,070 at \$2, 1 steer weighing 1,020 at \$3, 14 do av 910 at \$4.35; to Kamman B. Co. 8 butchers av 862 at \$3.75, 1 cow weighing 1,050 at \$3; to Caplis 7 butchers av 630 at \$3.60, 8 do av 855 at \$3.50, 3 cows av 976 at \$2.50, 3 do av 1,076 at \$3.50, 2 steers av 1,180 at \$5, 10 do av 974 at \$4.65; to Sullivan P. Co. 10 butchers av 786 at \$4.25, 4 do av 650 at \$3.50.

Spicer, M. & B. sold Kamman 2 cows av 935 at \$2.75, 5 do av 966 at \$3, 10 butchers av 707 at \$4; to Caplis 3 cows av 866 at \$2, 18 butchers av 934 at \$3.90, 2 do av 740 at \$3.50, 1 cow weighing 1,140 at \$3.50, 3 do av 866 at \$3, 2 steers av 670 at \$4, 21 butchers av 691 at \$3.35, 10 do av 1,065 at \$3.50, 3 cows av 800 at \$2.50; to Rattkowsky 2 cows av 990 at \$3.25; to Bresnahan 2 butchers av 565 at \$3, 5 do av 728 at \$4; to Sullivan P. Co. 2 bulls av 1,325 at \$3.50, 1 do weighing 1,570 at \$3.75, 1 do weighing 930 at \$3.

Reason & M. sold Sullivan P. Co. 5 steers av 1,080 at \$5.25, 5 do av 1,000 at \$4.75, 13 do av 846 at \$4.65, 1 bull weighing 1,450 at \$3.75; to Mich. B. Co. 6 steers av 1,083 at \$4, 3 do av 1,033 at \$3.40, 1 cow weighing 710 at \$1.50, 13 steers av 958 at \$4.75, 2 do av 965 at \$5.15, 1 bull weighing 960 at \$3.25; to Sullivan P. Co. 3 steers av 1,246 at \$5.50.

Roe Com. Co. sold Bresnahan 5 butchers av 752 at \$3.75, 4 do av 767 at \$3.50, 9 do av 666 at \$3.40; to Rattner 8 do av 1,035 at \$3; to Rattkowsky 1 cow weighing 860 at \$3.75; to Jones 2 bulls av 1,000 at \$3.50, 2 do av 800 at \$3.50, 5 cows av 1,080 at \$4; to Sullivan P. Co. 4 cows av 1,062 at \$3.25, 1 do weighing 800 at \$2.75, 4 steers av 985 at \$4.20, 3 do av 1,013 at \$3, 13 butchers av 713 at \$3.65.

Veal Calves.

Receipts, 237. Market \$1@1.50 higher than last week. Best, \$7@8; others, \$4@6.50. Milch cows and springers quarantined.

Wagner sold Sullivan P. Co. 2 av 115 at \$5.75.

Long sold Burnstine 27 av 160 at \$7.25.

Graff sold Fitzpatrick 11 av 120 at \$7.

Spicer, M. & B. sold Hammond S. & Co. 1 weighing 140 at \$7.50, 2 av 185 at \$7.50, 4 av 130 at \$6.50, 5 av 150 at \$6.25; to Sullivan P. Co. 6 av 150 at \$6; to Rattkowsky 1 weighing 160 at \$8; to Robinson B. Co. 1 weighing 270 at \$5.50, 21 av 165 at \$7.50.

Roe Com. Co. sold Hammond S. & Co. 4 av 155 at \$7.50; to Newton B. Co. 4 av 120 at \$6.50, 1 weighing 130 at \$6, 4 av 150 at \$7.50, 1 weighing 200 at \$6.

Reason & M. sold McGuire 10 av 166 at \$6.75.

Bishop, B. & H. sold Hammond S. & Co. 2 av 110 at \$6.50, 3 av 140 at \$7, 1 weighing 120 at \$6.50; to Mich. B. Co. 5 av 155 at \$5; to Hammond S. & Co. 5 av 130 at \$7, 2 av 135 at \$7; to Sullivan P. Co. 1 weighing 200 at \$7; to Mich. B. Co. 4 av 220 at \$4.50, 21 av 130 at \$7.25, 8 av 150 at \$7.75; to Fitzpatrick Bros. 5 av 140 at \$7.50; to Hammond S. & Co. 1 weighing 120 at \$7.50, 1 weighing 80 at \$5, 10 av 139 at \$7.50, 11 av 140 at \$7.

Sheep and Lambs.

Receipts, 1,104. Market 25c higher than last week and active.

Best lambs, \$6.50@6.65; fair to good lambs, \$5.50@6; light to common lambs, \$4.50@5; fair to good butcher sheep, \$3.50@4; culls and common, \$2@3.

Heaney sold Sullivan P. Co. 22 lambs av 70 at \$6.

Buetner sold same 72 sheep av 85 at \$3.

Torrey sold same 36 lambs av 85 at \$6.25, 5 sheep av 120 at \$3.50, 1 buck weighing 150 at \$3.

Wagner sold Hammond S. & Co. 12 lambs av 80 at \$5.50, 15 sheep av 70 at \$3.50.

Vickery sold Fitzpatrick Bros. 13 lambs av 65 at \$5.75, 1 sheep weighing 120 at \$3.

Graff sold same 90 lambs av 80 at \$6.25.

Spicer, M. & B. sold Mich. B. Co. 15 sheep av 105 at \$3.50; to Hammond S. & Co. 10 do av 70 at \$3.25, 52 lambs av 75 at \$6.25; to Sullivan P. Co. 10 do av 58 at \$5, 2 sheep av 170 at \$3, 15 do av 110 at \$3.50, 110 lambs av 75 at \$6; to Mich. B. Co. 28 do av 60 at \$5.80.

Roe Com. Co. sold Newton B. Co. 11 lambs av 70 at \$6; to Mich. B. Co. 46 do av 90 at \$6.50.

Bishop, B. & H. sold Hammond S. & Co. 19 lambs av 65 at \$6.15, 9 do av 100 at \$6.50, 61 do av 75 at \$6.15, 7 mixed av 70 at \$4, 35 do av 80 at \$4; to Fitzpatrick Bros. 17 sheep av 85 at \$3.75; to Mich. B. Co. 35 lambs av 80 at \$4; to Young 20 sheep av 110 at \$3.50; to Fitzpatrick Bros. 42 do av 90 at \$2.60, 12 do av 110 at \$4; to Newton B. Co. 14 mixed av 78 at \$4.50, 2 sheep av 140 at \$3, 9 lambs av 60 at \$5.75; to Hammond S. & Co. 70 do av 80 at \$6.30, 38 do av 75 at \$5.50, 9 sheep av 130 at \$4; to Goose 9 do av 115 at \$3.25.

Hogs.

Receipts, 4,890. Market 50@60c higher than last week and very active.

Range of prices: Light to good butchers, \$5.65@6; pigs, \$4.50@4.75; light, yorkers, \$5.40; stags, 1/2 off.

Sundry shippers sold Sullivan P. Co. 207 av 192 at \$5.75, 46 av 178 at \$5.85.

Roe Com. Co. sold same 13 av 197 at \$6.

Bishop, B. & H. sold Hammond S. & Co. 335 av 170 at \$5.80, 153 av 180 at \$5.90, 177 av 170 at \$5.75, 119 av 165 at \$5.70, 36 av 180 at \$5.85, 41 av 140 at \$5.50, 31 av 155 at \$5.60, 145 av 200 at \$6, 13 av 170 at \$5.

Sundry shippers sold same 50 av 203 at \$5.80, 20 av 142 at \$5, 18 av 160 at \$5.50.

Sundry shippers sold Parker, W. & Co. 114 av 171 at \$5.75, 71 av 201 at \$5.85.

Spicer, M. & B. sold same 430 av 180 at \$5.85.

Reason & M. sold same 47 av 160 at \$5.75, 120 av 203 at \$5.85, 33 av 129 at \$5.

BUFFALO.

Cattle.—Receipts, two cars; steady.

Hogs.—Receipts, 40 cars; steady; heavy, \$6.40@6.45; yorkers, \$6.25@6.40; pigs, 6.25.

Sheep and lambs.—Receipts, 30 cars; strong; best lambs, \$7.65@7.75; yearlings, \$6.25@6.50; wethers, \$5@5.50; ewes, \$4.50@4.75. Calves, \$5@9.75.

VETERINARY

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

Eczema.—I have a horse twenty years old that is troubled with a skin eruption accompanied with itching. The hair is inclined to drop out. M. H. Q. Weston, Mich.—Give 2 drs. Fowler's solution, 1/2 oz. fluid extract sarsaparilla and 1/2 oz. ground gentian at a dose in feed three times a day.

Shoulder Lameness.—I have a heifer that has been lame since last spring; the whole trouble appears to be in the shoulder. The shoulder muscles are shrunken. What had I better apply. D. B. Munising, Mich.—Apply equal parts tincture cantharides, aqua ammonia, turpentine and raw linseed oil once every day or two.

Acute Indigestion—Renal Colic.—I have a 5-year-old mare that has recently had some sick spells. I am inclined to believe that her kidneys are affected, but our Vet. that she had indigestion. H. E. H. Millington, Mich.—Give 3 drs. lithia, 1 oz. ground ginger, 1 oz. powdered charcoal at a dose in feed twice a day.

Mangy Condition of Tail.—I have a 7-year-old mare that has rubbed scalp of tail more or less for the past two or three years. Remedies that we have applied have failed to do any good. M. E. J. Muskegon, Mich.—Apply iodine ointment to scalp of tail two or three times a week. After she discontinues rubbing apply some vaseline daily.

Torpid Kidneys.—My horse has difficulty in urinating; his sheath is swollen. When he lies on his left side he is unable to arise without assistance. By giving him sweet spirits nitre it gives him temporary relief. C. K. Long Lake, Mich.—Apply equal parts alcohol and witch hazel to back twice a day; also give 2 drs. syrup iodide iron, 3 drs. lithia and 1/2 oz. ground ginger at a dose in feed two or three times a day.

Indigestion.—I would like a little information regarding the treatment of a horse for indigestion. Our local Vet. prescribed for him when he had colic. E. P. Muskegon, Mich.—Perhaps a change of feed and giving him 1/2 oz. ground ginger, 1/2 oz. ground gentian, 1/2 oz. bicarbonate soda and 1 oz. powdered charcoal at a dose in feed two or three times a day, will prevent him having any more sick spells.

Weak Back.—I have a 3-year-old colt that has rather poor use of hind quarters; he appears to back and turn with diffi-

culty. A. H. Silverwood, Mich.—Apply equal parts alcohol, extract witch hazel and spirits camphor to back twice a day. Also give 1/2 dr. ground nux vomica, 2 drs. ground gentian, and 2 drs. ground ginger at a dose two or three times a day.

Chronic Garget.—I have a cow that met with an accident last spring, hurting her udder. Since then the udder has been hard and is giving lumpy milk. The milk also tastes strong. She is now dry but will come fresh next spring. She appears to be perfectly healthy and I would like to know what can be done for her? L. A. J., Shelby Mich.—You had better apply some iodine ointment to udder three times a week—the caked part is the only part that you need to treat. Also give her 1 dr. iodide potassium at a dose in feed once a day for 30 days.

Dyspepsia.—I have a 3-year-old colt which has given me considerable trouble since I have brot him off the grass last fall. I have fed him clover hay, corn and carrots—his legs stock and he appears to be losing flesh. E. N. Mallette, Mich.—Give a tablespoonful of the following compound powder at a dose three times a day: Ginger, gentian, bicarbonate soda, nitrate potash and charcoal equal parts by weight.

Dropsical Udder.—Some six weeks ago the udder of my gray 7-year-old mare began to swell. The bag is not feverish and exercise seems to reduce the swelling. She has a good appetite and appears to be healthy. J. N. Mason, Mich.—Exercise her daily, feed her enough well salted bran mash or vegetables to keep her bowels open. Also give 1 dr. iodide potassium, 1/2 oz. powdered rosin at a dose in feed twice a day.

Contagious Abortion in Cows.—Can you tell me if there is any cure for contagious abortion in cows? What is the cause of it and is there any means of preventing its getting into a herd? E. C. Litchfield, Mich.—Contagious abortion is an infectious and contagious ailment, the result of a germ which inhabits the uterus and vagina of females; also the sheath of bulls. The infection is usually introduced into a herd by purchasing a cow that has been infected or by breeding one of your cows to a bull that has served a cow that recently aborted. The treatment for this ailment has repeatedly been published and I have no doubt you have made clippings of my prescriptions. However, I might add that unless the dairyman is very thoro in both treatment and disinfection he will not succeed in stamping it out.

Fistula on Arm.—I have a valuable 6-year-old mare that got hurt last August in pasture field, making a wound on arm below shoulder. It has never healed. A large bunch has grown. Our local Vet. failed to find any foreign body in the leg. S. B. H. Munith, Mich.—Your long letter explains the situation pretty thoroughly. I am inclined to believe there is a foreign body lodged in arm which has gradually worked down, and until this is removed your mare will not get well. Tell your Vet. to cut the leg open and ascertain why the wound does not heal. Six months is a long time to wait for a leg to get well. In my practice I never hesitate to go to the bottom and ascertain whether the bone requires scraping or whether it is caused from a snag. You will very likely find a piece of wood.

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HOME AND YOUTH

GRANDDAD SAYS.

BY IRMA B. MATTHEWS.

Whenever we have a snow-storm,
No matter what kind it be,
Granddad always has some kind
Of a rhyme to say to me.
If it happens to be just awful light
And as fine as it can be,
Granddad always shakes his head,
And then he says, says he:
"Snow meal, snow a good deal."

And if it is damp, the kind of snow
Us boys like to see,
Because we can pack it hard to throw
And have a battle—Gee!
But that is lots of fun!
We build big forts and make snow men
For we know it will not last,
Cause Granddad he says then;
"Damp snow, come and go."

And when it comes down in great big
flakes
Grandma says, the old woman in the
sky
Is picking her geese, she thinks,
And then is letting the feathers fly.
But Granddad only just looks wise,
As tho she did not know,
And then remarks, as he looks at me,
And then at the falling snow:
"Snow feathers, clearing weather."

A VENTURE IN MATCHMAKING.

BY HARRIET LUMMIS SMITH.

A marriageable mamma is a responsibility. This realization had been growing on Hildegard since the days when an unscrupulous admirer had bribed her, by means of peppermint drops, to smuggle his notes past the argus eyes of Aunt Sophia. By the time she lost her first front teeth she had passed beyond this venal age, and was quite accustomed to sitting in the parlor to play propriety, her large round eyes and general air of alertness serving as a check to the most impetuous of wooers.

At sixteen Hildegard was an ideal chaperon, possessing a mixture of finesse and firmness of which Aunt Sophia had been incapable, even in her best days. Like other generals, Hildegard had discovered that retreat may have a strategic value. When all else failed to discourage an ineligible but determined suitor, Hildegard and Aunt Sophia packed up and moved. Mamma frequently protested, yet the prospect of a new field always helped to reconcile her to the loss of an old admirer. "Only don't pick out one of those dreadful places where nothing happens," mamma would stipulate. "And look after the packing of my gowns yourself, Hildegard. They musn't be wrinkled."

The latest cause for flight had been an ex-newspaper man, who, because of ill-health, was taking a long vacation and had nothing to do but to tell mamma funny stories all day long. It was a delight to watch mamma as she listened to funny stories. Her blue eyes opened wide like a child's, in pleased expectancy, and every dimple seemed on the quiver. Then when the time came to laugh she did it with such delicious abandon, showing her pearly little teeth back to the sound molars. The fund of the ex-newspaper man never ran low. Hildegard was of the opinion that he lay awake nights to concoct his stories, as his devotion to mamma gave him no time during the day. When he began to look as if he found her presence in the room a drawback to his peace of mind, Hildegard knew it was time to break camp.

Luck was with them. In the new town which Hildegard and Aunt Sophia had selected, chiefly because the altitude would be bad for the newspaper man's lungs, the very first agent they had visited had a bargain to offer them. A family going to Europe wished to rent their house furnished, and the rates were moderate. Such a dear little house as it was, all porch and bay windows outside, and all cozy corners and wide halls within. As Hildegard unpacked, she felt more at home than she had done in all her wandering life-time.

She came downstairs presently to make Aunt Sophia a startling proposition. "Auntie, I'm tired of all this running away. Wouldn't it be better to marry mamma to someone who would be nice and kind, who would take good care of her?" She regarded her elderly relative with the triumph of one who has solved a baffling problem.

Her great-aunt sighed, with the pessimism of long experience. "That's just the trouble," she said. "Your mother never would fancy the sort of man she ought to marry, except your poor dear father, of course, and she was so young then that it doesn't count. What she

likes is a man that will make her laugh all day, and that is a pretty worthless kind, to my way of thinking."

"I saw a man just now in the garden next ours," said Hildegard dreamily. "He is older than mamma, of course. His hair is quite a little gray, but O, his face is so kind, and he seems so fond of his flowers! I couldn't help thinking what a comfort it would be if mamma were married to him, and we could stay here quietly for the rest of our lives."

"He probably is married already and has six children," said Aunt Sophia. "And I guess you must be out of sorts to get such notions. Better take a little quinine when you go upstairs."

But the maid whom they engaged next day, and who was only too happy to enlighten them on the subject of their neighbors, relieved Hildegard's mind on this point. Mr. Maxwell was not married. He was a scientific gentleman who wrote books. The maid did not know what the books were, but since they were not in the circulating library she reasoned that they must be very wise and very stupid. Beside this, Mr. Maxwell was very devoted to his flowers, as the ladies could see for themselves, for he spent hours every day in his garden.

As a matter of fact, it was the garden which was the opening wedge in Hildegard's match-making scheme. For when mamma's French poodle was let out in the yard for exercise, he leaped the fence and began to gambol playfully in Mr. Maxwell's carnation bed. Hildegard climbed the fence after him, caught her skirt on the paling, reached terra firma at last, damaged but determined, and had Scamp in her arms when the owner of the garden appeared. Hildegard lost no illusions in that first interview. He was all that she had fancied him when she had seen him from the upper windows and he would not listen to her apologies. Indeed, he even went so far as to pat Scamp's muzzle, and say that he was in that spoiled rascal's debt for introducing him to his new neighbors.

Hildegard returned home, her hands filled with flowers and her heart with hope. "You must come over soon and meet mamma," she had said on parting, and then she had blushed as scarlet as if he could have read her thoughts. Apparently Mr. Maxwell had not noticed her blush. He only assured her with grave courtesy that he would improve an early opportunity to make mamma's acquaintance.

It was rather annoying to Hildegard that the son of the automobile manufacturer was present when Mr. Maxwell made his first call. He was a young man of twenty-five or thereabouts, whom mamma had stumbled on the second morning, and had instantly recognized as a former acquaintance. He was a valuable youth who had a way of looking at mamma as if she were something good to eat. As a rule, Hildegard had little to say to him, but during Mr. Maxwell's call she insisted on monopolizing the younger man so as to leave the field open to her favorite, an arrangement which she feared was as little pleasing to mamma as to the son of the automobile manufacturer.

Yet after three months the youthful match-maker was encouraged. Mr. Maxwell came regularly. Hardly a day passed without their seeing him. The house was full of the fragrance of his flowers. Hildegard kept them downstairs till they began to fade, and then she carried them to her own room, treasuring them there until the last petal had fallen and the leaves had turned yellow. Even then she hated to throw them away. By this time mamma had quite a little circle of admirers, and the broad front porch of the cottage was seldom unoccupied. The son of the automobile manufacturer came every day, too, but Hildegard comforted herself with the reflection that Mr. Maxwell must look on him as a mere boy. She wished that the latter would be more outspoken in his admiration, for mamma loved flatteries as she loved bonbons, and most of her admirers catered to both tastes. To make up for his mistaken reticence, Hildegard sang his praises till she stirred her parent to one of her rare outbreaks of petulance.

"I declare, Hilda," mamma cried, "you harp on that man as if there were no other on earth. I'm tired of the catalogue of his virtues. I half believe you are in love with him yourself."

Hildegard turned red, turned pale, and walked out of the room, standing very straight, like a princess who has been insulted. After that she left mamma to discover for herself the good qualities of her reticent admirer.

When Aunt Sophia's attack of lumbago came on, Hildegard had no time to think of match-making. Nothing seemed to matter much but relieving the suffering of the dear old lady who had been her staunch ally in all the plotting of her unchildish childhood. Hildegard was up day and night. Her thin face, precociously thoughtful at best, grew worn and haggard. Her large eyes seemed to have increased several sizes. Mr. Maxwell, coming across her in the hall one afternoon, started at the sight of her.

"Good heavens, child," he said, "how very ill you look." He took the tray out of her hands, as if he had the right to exercise authority over her actions, and stood staring down at her in a strange, indefinable way that brot out two spots of bright red in her white cheeks.

"You're tired out," he announced at last, as the result of his scrutiny. "Go to your room and sleep."

"But Aunt Sophia needs me."

"Your mother will take your place."

Hildegard checked herself in a laugh. The sound of animated voices on the front porch drifted in. Mr. Maxwell was frowning. He did not understand.

"Mamma is not used to nursing. She would only get a headache and make Aunt Sophia very uncomfortable." She took the tray out of his hand resolutely. "I shall do very well. Aunt Sophia is a little better already. When she is well again I shall sleep twenty-four hours at a stretch."

As she went upstairs she reflected on the firm line made by his compressed lips. Well, that was all the better. Mamma needed kindness, but she needed determination, too. "She will like him all the more for ordering her around," thot Hildegard wisely. Had not Mr. Maxwell ordered her to her room, frowning all the time, after the most approved fashion of a step-father, and had she not found it pleasant! She would have enjoyed it still more had it been possible for her to obey.

That night Aunt Sophia slept soundly, and Hildegard did not wake until the sun was high. She dressed noiselessly, and went down the stairs on tiptoe. Her mother was not yet stirring, and Hildegard nestled among the pillows of the window seat to drink her coffee and nibble a biscuit. She was there when the maid brot word that Mr. Maxwell wished to see her.

Mr. Maxwell's manner was unusual. He seemed agitated, perturbed. He spoke no word of greeting as she entered the library, and did not return her smile. Instead he said abruptly, "Have you seen your mother this morning?"

"No, mamma isn't down yet. She reads late," explained Hildegard, "and we carry her breakfast when she rings. I'm just awake myself," she went on gaily. "You see, I've been keeping my promise and making up my lost sleep."

He stood looking at her as if he did not hear a word. "I don't know why this should have been left to me," he broke out passionately. "I don't know why I should have been chosen to do this cruel thing." He took an envelope from his pocket. "I received a letter from your mother this morning," he said, "and she enclosed one for you."

She was not smiling any longer. Her thin face with the big eyes looked suddenly apprehensive and old. Mr. Maxwell put the letter into one hand and then took the other cold, trembling fingers into his. That somehow made it easier for her to read the words that danced before her eyes.

My Dearest Hilda:—When this reaches you, Bob and I will be married. We shall be back again in two or three weeks and will keep you posted as to our whereabouts. We thot it was better this way, for if we had announced our plan, you would probably have insisted on moving again. Bob says that this would have been quite useless, as he would have followed me to the world's end and I believe he would. He is so determined and so devoted to me. Really, dear, I see no reason why we should not be very happy together. Bob says he has money enough for all of us, and that we must teach you how to enjoy yourself.

I have asked Mr. Maxwell to break the news to you, for it may upset you a little at first, but, really, my dear, I am old enough by this time to be allowed to be happy in my own way. Love to Aunt Sophia.

MAMMA.
Hildegard put down the letter but she held fast to the kind hand which grasped hers. Then as she met his eyes fixed on her, with such heart-ache in their depths, her own heart broke for him. At the thot of his disappointment and suffering

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she writhed in her chair. "Oh, Oh," she wailed, "How could she do it?"

"I don't know," groaned Mr. Maxwell, "and as for him—" He set his teeth hard over the unfinished sentence. Something in his look frightened Hildegard and she tried to find excuses for her mother's new husband.

"O, he isn't so much to blame. Of course he couldn't help falling in love with mamma. She is so beautiful. And I don't suppose he ever took your feelings into account."

Mr. Maxwell's expression underwent several odd changes during this little speech. "Hildegard," he demanded, still holding firmly to her hand, "did you know all the time it was your mother he loved?"

"Why, of course," cried Hildegard. "Everybody falls in love with mamma."

"And didn't you care for him?" It was a question he had no right to ask, of course, but Hildegard answered it. "Care for him? That boy!" she exclaimed scornfully. And neither of them discovered anything amusing in her answer.

"Hildegard," said Mr. Maxwell stammeringly, as the wisest man will when he comes to say certain things to a certain woman. "You seemed to think just now that I would be disappointed by the news of your mother's marriage. I only care for it as it concerns your happiness. I have loved you from the moment I saw you in the garden, little girl, and I have loved you better and better as I've watched your sweet womanliness and self-forgetfulness. Hildegard, do you think you could ever learn to care for an old fellow like me?"

Mamma returning from her honeymoon trip found a big solitaire blazing on Hildegard's left hand. Mamma did not altogether approve. "I'd set my heart on your having a good time first," she said regretfully. "You've been so busy all your life looking after my love affairs that you haven't had time for any of your own. But I daresay it's a very good match and you'll be happy in a quiet way."

She repeats her plaint occasionally when she takes dinner at Hildegard's home and tries to stir her daughter to emulation by reciting the gaieties she is enjoying. "Bob and I can't understand you two," she assures them. "A Darby-and-Joan life wouldn't do for us. But Hildegard never did resemble me."

And Hildegard's husband, smiling on his mother-in-law like the courteous gentleman he is, says under his breath, "Thank Heaven."

GERALD CLAY'S VOCATION.

BY HOPE DARING.

Chapter IX.—A Wedding.

At that moment Mrs. Clay-Fuller appeared in the hall doorway. A frown disfigured her face, and she began speaking, without seeming to notice Pauline.

"I supposed it was supper that you were to return for, not breakfast, Gerald. The sally-lunn is all dried up, and the chicken is—why, Cousin Thomas, you look—well, as if you were in church."

The old gentleman walked forward, still holding Pauline's hand in his. "Cousin Lizzy, I think that you did not see our dear, honored guest. I feel as if I was in church, for Gerald tells me that this sweet girl has promised to be his wife."

Pauline gasped. She had had no idea of imparting her precious secret to the widow at that time. The girl had not learned that the other's constant fretting was only a habit, so she was surprised when Cousin Lizzy came forward and took her in a warm embrace.

"I am delighted, my dear. Elm Hill needs a mistress, and my dear boy needs the grace that only home ties can add to a man's life. He is a good boy, Pauline, only a little careless, like his keeping supper waiting tonight. You must cure him of that. Gerald is a Clay, so we have a right to expect much of him. And you, my dear, we will be very proud of you."

"Thank you, dear madam," Pauline said in a voice that would tremble, despite her efforts to keep it steady. "It all seems so strange to me yet that your kindness and that of Captain Clay mean more to me than I can tell you."

"And I congratulate you, Gerald." Cousin Lizzy went on. "You have won a treasure. Now will you all come to supper before it is entirely ruined. It ought to have been a feast, for such an occasion. Gerald, why did you not tell me?"

"Well, Cousin Lizzy, you see I was not sure whether congratulations or condolences would be in order. Please take my arm, for I see that Uncle Thomas intends to appropriate the guest of honor."

Pauline smiled. "And the guest of honor wears a riding habit. I must beg pardon for my informality."

Notwithstanding the housekeeper's predictions, the supper proved satisfactory. They lingered a long time at the table, chatting of various things. Before they rose, a full moon was flooding the earth with its silvery radiance.

"It will be a beautiful ride," the captain said, as Pauline stood at his side while Gerald himself went for the horses. "I shall dream of the happiness of you two. God bless you!"

A few days later a letter came from Blair Arnold. Part of it ran: "That Brooks was a rogue all right enough. The records of the North Lode Mining Company show no transfer of stock to Captain Clay or to Brooks. Acting on the advice of my chief, to whom I told the whole story, I have had a formal statement of the above made out and enclose it in this letter. If I can do anything more for you, freely command me."

After reading the letter Gerald sat for a long time, staring straight before him. Somehow his desire to punish Brooks was lessening. There was still the wrong done Captain Clay, but no punishment inflicted upon Brooks could right that.

"I will talk with Uncle Thomas, and then I will go to Lexington. Kenton must see this paper," Gerald thought as he rose from his chair. The captain's face was grave when he returned the paper to his nephew. All that he said was: "For your sake, Gerald, and for that of Pauline, I would like the money back. As for me, I am so well contented that it matters but little. Brooks is getting to be an old man, and I pity as well as blame him."

Gerald carried Blair's letter to Mr. Kenton. That lawyer reported Brooks as still absent from Lexington. Report said that Mrs. Brooks could live but a few weeks. If she rallied sufficiently to undertake the journey, she was to be brought home.

"It will be best to let the matter rest for a time," Mr. Kenton said. "I still hope that the note may turn up. In case Brooks is his wife's heir, as he will doubtless be, for there are no children, he will come into possession of several thousand dollars' worth of real estate. I will make an effort to get something for Captain Clay out of the affair."

Gerald plead for an early wedding. At first Pauline insisted that she must finish her year in the Clayton school. That idea brot a storm of remonstrance, not only from the inmates of Elm Hill, but also from the Kennedys who dearly loved the girl and were delighted to think that she was to live near them. After much discussion it was decided that Gerald and Pauline should be married at Christmas.

The autumn months slipped by rapidly. Captain Clay's happiness seemed to exert a beneficial influence upon his physical condition; he was stronger than at any time since his illness. He and Gerald planned a few improvements in the old home. It was while they were discussing those that the old man exclaimed: "If I only had that money, Pauline, I would give you a wedding that would be the talk of the county."

"I do not want such a wedding as that, dear Captain Clay," the girl said soberly. "The joining of my life with Gerald's is of importance only to the comparatively few who love us."

However, the captain would not listen to an entire absence of the hearty hospitality that had long characterized the Clay household. As Pauline had no home, he insisted upon the wedding ceremony being performed at Elm Hill. At first Pauline refused, telling both the captain and Gerald that the Kennedys had asked her to be married quietly at their home. When she saw how that would grieve Captain Clay she consented to the carrying out of his plans, only stipulating that the wedding, which was to be at four in the afternoon of Christmas Day, should be a quiet affair.

The most intimate friends of the Clays were present, also some of both Pauline's and Gerald's college friends. A wedding supper was served, and that meal was a triumph of the somewhat old-fashioned cooking and serving that had been common in the society days of Mrs. Clay-Fuller and Captain Clay.

"Perhaps you would like things a little

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more modern," Gerald said to his betrothed. "After all, it is our wedding, dear, not that of my uncle and cousin."

"Because it is ours, because the joy and the promise of a life together are ours, we can afford to let them have their way about the non-essentials," she said gently.

It was before the ceremony that Mr. Kenton, who was among the guests, drew Gerald to one side to say: "Brooks arrived in Lexington this morning. He brot his wife's dead body with him. I hear that he is sadly broken in health himself."

A great wave of pity went over Gerald Clay. He could not help contrasting William Brooks' Christmas with his own.

"I am sorry for him," the bridegroom cried. "Remember, Mr. Kenton, the suit against him is not to be pushed, at least not until he has regained his strength and poise."

"I knew you would say that. To me, Gerald, the saddest feature in this case is that Brooks' many rascalities have cost him the friendship of the people whom he has known for years. Of course, they do for him in his present time of trouble, but they do because of their own self-respect. The saying that the way of the transgressor is hard is considered out of date in our present busy age, but it is based upon solid truth."

Gerald did not repeat Mr. Kenton's news to either his bride or his uncle. It could be told them later; nothing must mar the enjoyment of that hour.

The evening's festivities passed without a discordant note. There was no wedding journey; the young couple were to settle down at once in the home of Gerald's ancestors. There Pauline was to be mistress. At first she had shrunk from the thought of supplanting Mrs. Clay-Fuller, who, notwithstanding her many peculiarities, had served the captain long and faithfully. The widow said: "I am too old for the care that I have to have here. Pauline, I will stay for a while, 'till you get used to things. Then my daughter wants me to live with her. I'm not sure I'll be contented away from Elm Hill, but, if not, I reckon you'll give me a place in the chimney corner."

Over and over she was assured of her always finding a welcome and a home at Elm Hill.

Pauline had been a wife for a month, when, one stormy winter afternoon, she offered to read to the captain who was suffering from a headache.

"What shall I read?" she asked. "Something from Emerson?"

The old man smiled. It had been a great delight to him when he learned of Pauline's interest in the gentle philosopher whose disciple he had long been.

"If you feel in the mood for Emerson, there is nothing that I would enjoy so much. By the way, Pauline, did you not tell me that you had never read his first book, 'Nature'?"

"I have never read it, but am anxious to do so. The quotation you gave—'If a man would be alone let him look at the stars'—seemed to me the language of my own heart. One of our present-day writers puts it thus, 'You have to be by yourself and a bit lonesome before Nature even begins to whisper her secrets.' Shall I take the volume from among the Elgin set?"

"There's a worn copy that I read and marked for years. I'd like you to make the acquaintance of that volume first. It is a long, narrow book with a green cover."

Pauline looked over the books upon several shelves without finding the one for which she was seeking. At last the captain arose and went to her assistance.

"Where can it be? I remember that I was reading it that day when William Brooks came to tell me that my money was lost. I do not remember seeing it since. Doubtless, Cousin Lizy, who has a passion for what she calls 'tidying up things,' has tucked it away somewhere."

At last he found the missing book pushed in between two volumes of "The Rise of the Dutch Republic." Pauline opened it, her eyes wandering from one marked passage to another with delight as she turned the leaves.

"Here is a paper, Uncle Thomas. Do you know what it is?"

"Nothing of importance I think. Look at it, my dear."

Pauline unfolded the paper. Her cheeks flushed, then grew strangely pale.

"What is it, Pauline?"

"It is the missing note—William Brooks' promise to pay you sixty thousand dollars."

(Concluded next week.)

TELLING STORIES TO CHILDREN.

BY E. J. LYNCH.

In every home where there are children between the ages of two and twelve there is apt to be the daily clamor, "Tell me a story." The demand is increasing, and it is little wonder the supply often runs short. It makes little difference whether it is a bear story or a Bible story, or a biscuit story, so long as it is a story; but it must be a story the child demands. Comparatively few mothers have much time to read new stories suitable for children and often the mind is too tired to think up one.

Perplexity as to how to meet the demands of two active children in the line of stories, led one mother to devise a plan to lessen the demand, and at the same time, teach the children to pay attention to details and remember. The plan was to require the child to repeat clearly and without mistakes the last story told to her before a new one would be told. It worked out better than even the perplexed mother had dared to hope. Instead of quantity in stories the mother was able to give attention to quality and to restrict the story-telling to those stories which it would be useful for them to remember. Bible stories were re-read so as to be told to the children with absolute correctness, and the little ones got quite as much real pleasure in repeating an old story as in hearing a new one. Besides there was being formed the habit of giving attention to details, and the cultivation of memory which are very desirable characteristics in any child. In training the child to repeat stories, it is much better to leave him free to tell the story in his own words, and to let the main point never be lost sight of as it is the remembering of the main facts that is especially desired. The child will put more heart into it and get more real pleasure out of it, if he is not corrected as he goes along for the way in which he tells it.

CONTRIBUTED RECIPES.

BY E. E. R.

Plum Pudding.—One pound seeded raisins, 1 pound currants, 1 pound suet, chopped, 1 heaping tablespoonful each of citron, lemon and orange peel candied, (or two of these may be omitted), 1½ cupfuls flour, ½ pound bread crumbs, ½ pound brown sugar, grated rind of one lemon with its juice, ½ teaspoonful salt, 1 grated nutmeg. Add to these ingredients 8 eggs and sufficient sweet milk to form a very stiff batter. Boil four hours in a mold or buttered lard pail. Serve hot with hard sauce, made by creaming 1 cupful butter with 2 cupfuls of powdered sugar flavored with vanilla or with nutmeg.

Date Drop Cakes.—Two eggs, ½ cupful butter, 1½ cupfuls brown sugar, ½ cupful of milk, 1½ cupfuls flour, 2 teaspoonfuls baking powder, ½ pound chopped dates, 1 teaspoonful cinnamon, same of nutmeg. Mix dates with a little flour. Bake as drop cakes and ice.

KITCHEN RULES.

BY C. G. BROCKWAY.

Without cleanliness and punctuality good cooking is impossible.

Leave nothing dirty—clean and clear as you go.

A good cook wastes nothing.

An hour lost in the morning has to be run after all day.

Use a strong fire for roasting and a clear fire for broiling.

Boil fish quickly; meat slowly.

Throw flour on kerosene flames.

Slamming door of oven makes cake fall.

A few drops of lemon juice makes cake frosting very white.

Try sprinkling powdered cloves about places infested with red ants.

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

Salt and vinegar will remove stains from discolored teacups.

Would like to have some reader of the Farmer give his method of salting and curing pork and hams for family use.—Green Horn.

FAITH.

BY FRANK J. PHILLIPS.

Each day I plod the weary way

That seems fore'er my earthly lot,

But in the stones that strew the course

I find the sweet forget-me-not;

And when the sky is fully strewn

With darkening clouds that mean

Despair,

I count the days of song and love

And know the soul of all is fair.



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We want you to try Kuhn's Rheumatic Remedy, to learn for yourself that Rheumatism can be cured and we want no profit on the trial. A fair test is all we ask. If you find it is curing your Rheumatism or Neuralgia, order more to complete your cure and thus give us a profit. If it does not help you, that ends it. We do not send a small sample vial, containing only a thimbleful and of no practical value, but a **full-sized bottle**, selling regularly at drug-stores for **One Dollar Each**. This bottle is heavy and we must pay Uncle Sam to carry it to your door. **You must send us 25 cents** to pay postage, mailing case and packing and this full-sized \$1.00 Bottle will be promptly sent to you free, with everything prepaid. There will be **nothing to pay** on receipt or later. Don't wait until your **Heart-Valves** are injured by Rheumatic Poison, but send today and get a Dollar Bottle free. Only one bottle free to a family and only to those who **send the 25 cents for charges.** Address us as follows:

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THE SEASON FOR EXTENSION WORK.

At the recent annual meeting of the State Association of Farmers' Clubs much was said about the necessity of doing good work in the promotion of Club extension during the ensuing year. From the president's address down thru the program the keynote of the meeting was to interest the young people and those now outside of the organization, in Farmers' Club work. Club extension work can best be taken up and most efficiently pushed by the local clubs at this season. If nothing has been done to this end in your club, why not take it up at the January meeting? Appoint a publicity committee and let those about you know what your club is doing. This will prove an efficient way to get them interested in club work, and it will be easy to organize one or more clubs in unoccupied territory.

AGRICULTURE IN THE RURAL SCHOOLS.

Synopsis of the address delivered by Prof. W. H. French, of M. A. C., before the State Association of Farmers' Clubs.

Agriculture is a science. It is a broad and complex subject and one which touches vitally the life of each community and the life of the nation.

The road to success of the farmer lies thru education and intelligence. Ignorance is as costly to the farmer as to any other business man.

In order to meet the needs of our rapidly increasing population and conserve the properties of the soil and the interests of the consumer there must be an ideal diffusion of agriculture. We can reach the great body of our people only thru the public schools. The great purpose of educators is to better the work of the school, of the student, that is, his present life and the life which he is to live after he leaves school. It is the desire of every school patron that his child shall receive a real usable education.

Agriculture is a part, and an important part, of the great field of education. The chief work in the introduction of agriculture in the public schools is to change the attitude of our young men and women to the farm labor and to farm life or to create ideals of farm labor and farm life. All labor without an ideal is drudgery, and this is the reason why so many farmers look upon their occupation as burdensome and unremunerative.

That school is best which responds most quickly and most effectively to the needs of its patrons. It would seem that the rural school, with its agricultural environment, would be the ideal place to teach agriculture, but there are special difficulties in the way as follows: The short life of the teacher, one teacher for all children, irregular attendance, meagre equipment, and conservative constituency. The rural schools are with us and must be utilized to the best advantage. It is our labor to vitalize and arouse them. The teacher, however, is the real problem. It is not so much a question of what is taught but how and by whom. The small school has its advantage in simplicity of organization, of directness of presentation. Each subject should be taught in terms of the environment of the school; that is, thru agriculture we shall afford an opportunity for the child to apply his knowledge of arithmetic, geography, language, and even history and civics. We can build an addition to the rural schoolhouse, and in the room thus

provided we may place a bench and tools, the plow and cultivator, and other similar agricultural tools. We can place there also a stove and kitchen utensils, thus affording an opportunity to teach the fundamental principles of household work and home-making. This room will serve also as a place for exhibitions from the school garden and home garden and the field. In other words, such a room will assist in making the entire school a workshop where the pupil can express himself physically, intellectually, and industrially.

The work in agriculture must not be presented so as to impose another task, but a part of the existing order. Its great purpose must be to create a rational attitude to a proper ideal of the farm. It is the spirit and not the letter that we desire. It must be taught from the view point of the child and not from the view point of some grown-up farmer. From the first grade to the fifth we may present what is usually called nature study, its purpose being to put the child in sympathy with his environment. In this work we must present natural objects, or trees, flowers, shrubs, etc., as related to the means of living of the people and household affairs, in other words, the human activities of the community so far as natural conditions affect them.

From the fifth to the ninth grade we may present what may be termed agriculture, that is, a study of the soils, the roads, fences, and buildings. Special trips may be made after school and observation of the conditions on the farms of the district made, reports and computations on prices and values on stock, farm property, farm machinery, etc., made. All of this gives an opportunity to apply the so-called academic subjects of the so-called schoolroom to the activities of human life, and in doing these things we shall vitalize the work of the school and shed a new light upon the pages of the text-book and really enter into the life of the people.

CLUB DISCUSSIONS.

Give Christmas Dinner.—The Sherman Farmers' Club met with Mr. and Mrs. B. C. Martin, Dec. 19. President W. E. Carter called the meeting to order. The program for the day, as before decided upon, was a Christmas dinner, and Christmas songs and recitations, which were enjoyed by all. We also listened to an interesting report of our delegate to the State Farmers' Club, held at Lansing. While singing the closing song, a treat, consisting of candy and nuts, was passed around, and a sack sent to each absent member.—Mrs. G. W. Coil, Secy.

Hold Young People's Meeting.—The December meeting of the West Haven Farmers' Club was held at the pleasant home of Mr. and Mrs. Thomas Amos. The rooms were beautifully decorated for the occasion with holiday decorations. Promptly at 11 o'clock President Charles Gassman called the meeting to order and announced that the program committee had arranged at a previous meeting to give the young people of the club, the entire charge of the program, after the election of officers, and necessary business should be transacted. After invocation by Mr. McGlockne, the club at once proceeded to the election of officers, which resulted as follows: President, Mr. C. W. Gassman; vice-president, Mrs. H. H. Hill; secretary, Mr. J. W. Hillis; treasurer, Mr. J. W. Pierce; cor. sec., Miss Susan Hillis; chaplain, Mr. McGlockne; director, Mr. H. H. Hill. The secretary not being present with the records the business was deferred until next meeting. At the announcement of dinner all repaired to the tables and enjoyed an excellent dinner, prepared by the hostess and her assistants. Dinner over, the president again called the meeting to order and named his committees for the next year's work. After this the meeting was turned over to the young people, with Irving Hill acting as president and Susan Hillis as secretary. The following program was carried out: Singing by entire club; recitation, Zelma Fuller; recitation, Mildred Wilson; recitation, Ethel Hill; instrumental music, Nina Jones; song by Ethel and Luella Hill; violin solo, Lulu and Grover Amos, who kindly responded to an encore; recitation, Blanche McGlockne; a duet, Lena Spitzer and Susan Hillis. The following question was discussed by Glenn Amos and Irving Hillis: "Who has the more opportunities for making a success in life, the country boy or the city boy?" The young people's program was a success in every way and undoubtedly will become a permanent feature of every December meeting hereafter. A rising vote of thanks was extended the host and hostess for their excellent entertaining, after which the members and invited guests departed for their several homes, feeling that the day was very pleasantly and profitably spent. The next meeting will be held at the home of Mr. and Mrs. A. E. Spitzer.—Mrs. C. W. Glassman, Cor. Sec.

Don't Like Present Highway Law.—At a recent meeting of a Jackson Co. Club, the president called for a vote of the gentlemen present as to whether they desired a change in the present road tax law. All were in favor of a change as none seem to be pleased with the present one. The old law of pathmasters in each district was more satisfactory than the present way.

GRANGE

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

PLANNING FOR THE NEW YEAR.

As indicated in the program outline submitted by the State Lecturer, and which appeared in these columns last week, the first meeting of the year should be largely devoted to the laying of plans for the months to come. In most Granges new officers will be installed at this meeting and it therefore marks the advent of a new administration of affairs. It is only natural that the new officers should feel more or less individually responsible for the success of the work that is ahead and that each should have some ideas and suggestions well worth the careful consideration of the Grange. These should all be brot out at this meeting. Not all will be found practical or worthy of adoption, of course, but the suggestion of a new line of work by any officer or member will set all to thinking and perhaps result in a crude, impractical plan being moulded into definite, workable form. Each officer, and member should be urged to suggest new things and none should hesitate about submitting anything that comes to mind, as the lecturer should not be expected to do the thinking for the whole Grange. There are brains enough in every Grange to make it thoroly alive and progressive if the members will only use them.

It may not be possible to suggest and work out many plans that are entirely new and original. It is possible, however, for the majority of Granges to profit from the experience of the few more progressive ones thru the adoption of methods and lines of work which have been thoroly tried out, and at this first meeting of the year the members of each Grange should decide just how far they desire to go in this direction. For instance, shall the Grange try the advance program this year? Shall the Grange conduct any special meetings or contests and, if so, of what nature? Shall the Grange use the program suggestions offered by the State Lecturer, and shall it secure books and supplement the program work by forming a reading club within the Grange to take up the well arranged college extension reading course? Shall the Grange hold open meetings or devise other means of getting non-members interested in the educational work, as well as the social functions planned for the year? These are only a few of the questions which should come up and which should receive thoughtful consideration when outlining the coming year's work.

AMONG THE LIVE GRANGES.

South Arm Grange, of Charlevoix Co., recently debated the question, Resolved, That the time and money spent on foreign missions would be better spent at home. The decision favored the affirmative. This Grange closed the year by electing the following officers: Master, Frank St. John; overseer, James Nice; lecturer, Iva Burbank; steward, Charles Cushman; ass't steward, R. V. Liskum; treasurer, Ralph Ranney; secretary, Ursula Crawford; gatekeeper, Reuben Murphy; chaplain, Sadie Murphy; Flora, Nathalie Liskum; Ceres, Minnie Crawford; Pomona, Ruth Nice; L. A. S., Nina Kiser; insurance director, Jas. Keat.

Golden Rod Grange, of Cass Co., elected the following officers at its last meeting: Master, Ralph Stewart; lecturer, Mrs. John VanRiper; overseer, Wm. Piero; steward, Walter Dillman; assistant steward, Fred Wells; lady assistant steward, Emily Green; secretary, Clarence Wells; chaplain, James Springsteen; treasurer, Mrs. Fred Wells.

Grand Traverse Grange, the members of which are much elated over the selection of their home city as the place of holding the next State Grange, has elected the following officers for the ensuing year: Master, Edward J. McMullen; overseer, Elsworth E. Duryea; lecturer, R. H. Elsworth; steward, Lottie Cleveland; assistant steward, William B. Gray; chaplain, Mrs. A. R. McRae; treasurer, George A. Robertson; secretary, Mrs. E. J. McMullen; gatekeeper, C. H. Drake; Ceres, Mrs. Mary Sluyter; Flora, Mrs. Alice Grubb; Pomona, Mrs. Emma J. Robertson; lady assistant steward, Mrs. E. B. Duryea; insurance agent, Geo. A. Robertson.

South Branch Grange, of Ogemaw Co., has elected the following officers for the ensuing year: Master, Alvah Monteny; overseer, Lee A. Coburn; lecturer, Iver E. Berry; treasurer, S. G. Belden; secretary, Mrs. Adelaide D. Berry; chaplain, Mrs. Lydia Taber; steward, Wm. Barrenger; gatekeeper, Jos. Monteny, Jr.; director of insurance, F. G. Wood.

Ironton Grange, of Charlevoix Co., will begin the new year with an open meeting, the first to be held in its new hall. At the closing meeting of 1908 four candidates were instructed in the third and fourth degrees and officers elected as follows: Master, John Knudsen; overseer, Harry Coblenz; lecturer, Fannie

Knudsen; steward, Ole Lyngklip; assistant steward, Harry Mitchell; chaplain, Mrs. Mitchell; treasurer, William Bird; secretary, J. W. Flanders; gatekeeper, Neils Lyngklip; Ceres, Mrs. Lyngklip; Pomona, Mrs. Knudsen; Flora, Mrs. Tu-moth; L. A. S., Lillian Flanders.

Rose City Grange, of Ogemaw Co., at its last meeting in December, elected officers as follows: Master, Wesley Chase; overseer, Eugene Parker; lecturer, Mrs. Wesley Chase; steward, Chas. M. Antil; ass't steward, Howard Thompson; chaplain, Mrs. D. C. Thompson; treasurer, D. C. Thompson; secretary, E. O. Waterman; gatekeeper, Dexter Sammons; Ceres, Addie Blair; Pomona, Mrs. W. Clark; Flora, Sara Waterman; lady ass't steward, Josie Blair; organist, Mrs. Rex.

One of the strongest Pomonas in the state for several years past has been that maintained by the Granges of Charlevoix Co. The recent resignation of the Pomona lecturer placed a problem before the Patrons of the county but the future success of the work has been insured by the appointment of Bro. Glenn M. Du Bois, formerly an active worker in Gratiot Co., to the position. This appointment means a year of unusual activity among the Granges of that county as Bro. DuBois is laying plans to make it the banner county of the state and declares he will be satisfied with nothing less than a representation of 500 Charlevoix Patrons at Traverse City next December.

Elm Hall Grange, of Gratiot Co., instructed two candidates in first and second degrees and two in third and fourth degrees at last meeting of the year. At meeting to be held Jan. 9, the following officers will be installed: Master, S. Parks; overseer, C. L. Brook; lecturer, C. O. Sly; steward, I. Sabin; assistant steward, Seymour Arriss; chaplain, Mrs. Sabin; treasurer, Mrs. Smith; secretary, Nora Smith; gatekeeper, Marshall Smith; Ceres, Mary Sly; Pomona, Anna Parks; Flora, Olive Brook; lady assistant steward, Dora Arriss.

Williamsburg Grange, of Grand Traverse Co., has elected the following officers for 1909: Master, Geo. L. Crisp; overseer, W. A. Bell; lecturer, S. M. Perry; steward, Chancey Seely; assistant steward, Frank Hawley; chaplain, Mrs. K. Stites; treasurer, George Arnold; secretary, Mrs. Alberta Sage; gatekeeper, Upsall Hobbs; Pomona, Mrs. Stella Bunce; Flora, Mrs. Geo. Crisp; Ceres, Mrs. Upsall Hobbs; lady assistant steward, Mrs. Frank Hawley; insurance agent, W. H. Ayers.

Wilson Grange, of Charlevoix Co., is proud of its financial record for the year just closed. At its last meeting the dance committee reported receipts of over \$13 from the last dance. The finance committee reported a balance of \$112.87 in the treasury. The woman's work committee reported that during the year it had made, in various ways, \$52.41, of which \$28.39 had been expended for Grange purposes. Petitions to Congress for favorable action on parcels post and postal savings banks bills were read by the secretary and signed by the members.

POMONA MEETINGS.

Clinton County.

Clinton County Pomona met with Olive Grange, Wednesday, Dec. 16. The attendance was large, estimated at 200. The members of Olive Grange have been painting, repairing and papering the inside of their hall so it looks very neat and attractive. Nine Granges were represented and encouraging reports given by nearly all.

The program was well carried out. The answer to the question, "Which is of more value to the farmer, corn-fed hogs or those fattened on other foods?" was well discussed. The general opinion was that it was better to finish fattening on corn, after they had gotten a good start on milk and ground feed fed in a slop.

"What can we do to advance our county Grange?" was well discussed. Some said make the program as interesting as possible; make the fourth degree members feel that we need them in Pomona.

"Should children of school age be allowed to read the newspapers?" Yes, the parents should be careful and not have a class of newspapers in the home that is not fit for them.

"Does not the man working in a factory ten hours a day work more hours than the farmer during the year?" General opinion was that he does. One reason given was that when it rains the farmer gets a rest. In the factory rain makes no difference.—Mrs. C. L. Pearce, Lect.

Newaygo County.

Newaygo Pomona was entertained by W. W. Carter Grange, Dec. 30-31. Visiting members from Ennsley, Ashland, Lincoln and Fremont Granges were present. The words of welcome extended by the Master of Newaygo Grange made all feel quite at home. Discussions were all entered into with lively spirit. Music, recitations and addresses helped to make a program which was unusually good. The evening session was devoted to business entirely, a class of two being initiated and the work of the third degree exemplified by the Newaygo degree team. Next meeting will be held with Fremont Grange, at Fremont, in March.—Secy.

COMING EVENTS.

Pomona Meetings.

Western Pomona, with Ottawa Grange, Friday and Saturday, Jan. 8-9, Miss Jennie Buell, State Speaker.

Cass Co., with Union Grange, Friday, Jan. 8. Mrs. E. J. Creyts, State Speaker. Barry Co., special meeting in Maccabee Hall, Hastings, Wednesday, Jan. 13. Geo. B. Horton, State Speaker.

Berrien Co., at Berrien Center, Tuesday, Jan. 12.

Clinton Co., a Pomona rally at Olive Grange hall, Wednesday, Jan. 20.

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We supply a good grade of overhauled select-d manila rope in sizes from 1/2 in. up to the rate of 6c per lb. Also new manila rope at less than market prices. Wire rope of six strands, 19 wires to the strand, 1/2 in. in diameter. Price, per foot 3 1/2c. Let's send you a list.

BEADED CEILING, \$1.85 PER SQ.

Brand new, high grade, light weight beaded ceiling at \$1.85 a square. It is in sheets 24 in. wide and 6 or 8 ft. long. It makes an ideal ceiling for stores, kitchens, restaurants, etc. Can also be used for siding purposes. Always neat and attractive, economical and lasting. We send it ready to put on. Requires no tools but a hatchet or a hammer. At this price we prepay the freight in full to all points east of Colorado except Oklahoma or Texas. Prices to these and other points on application. This freight prepaid proposition applies only to this advertisement and has nothing to do with any other of our offers.

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The best ready roofing on the market. Its base is pure mineral wool and genuine asphalt. No tar, residuum or other injurious matters used in the construction of this roofing. It is positively guaranteed to give lasting service. We have it in three grades, 1-ply at \$1.25 per square; 2-ply at \$1.40 per square and 3-ply at \$1.75 per square. By a square we mean 100 sq. ft. or sufficient to lay a square. Our price includes nails, caps and cement to make the laps. At this price we prepay the freight in full to your railroad shipping point to all points east of Colorado except Oklahoma or Texas. Prices to these and other points on application.

Galv. Rust-Proof ROOFING, \$3.25

Here is a Roofing that will outlast any other kind on the market. It is made with a thorough coating of non-corrosive metals consisting of tin, lead and zinc called spelter and is the best galvanized material known. It will not rust and does not require any painting after it is on the roof. It positively does not taint your rain water; is never injured by contraction or expansion. \$3.00 is our price for one flat material. Our price for the corrugated or V-crimped is \$3.25 per square. Sheets are all 6 ft. long and 24 in. wide. At this price we prepay the freight in full to all points east of Colorado except Oklahoma or Texas. Prices to these and other points on application. This proposition applies only to this offer.

WATER SUPPLY OUTFITS; \$48.00

You can live in city comfort even though your home be on a farm. From \$48.00 up—upwards you can buy a complete outfit needed to give you these comforts. With our comprehensive instruction book you can install the outfit yourself. Let's tell you more about it. Our interesting book on water works systems is free for the asking. Remember it gives ample fire protection and reduces your rate of insurance.

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Brand new, clean, fresh, high-grade galvanized conductor pipe and eave trough. Direct from our factory. As good as is manufactured and price lower than elsewhere. We can furnish all roofing and general supplies. Conductor pipe in 10 foot lengths, price per length 2 in. 32c; 3 in. 38c; 4 in. 50c. Slip joint eave trough 10 ft. lengths, 3 1/2 in. per length 80c; 4 in. 82c; 5 in. 40c. Eave trough corners, 3 1/2 in. 14c. Galvanized slip ends, 14 in., each 17c. Eave trough hangers, 3 1/2 in. 9c. Elbows, 2 in. 11c; 3 in. 12c. Galvanized roof gutters, 10 ft. length, 14 in. girth length 75c.

Barbed Wire, \$1.80 for 80 Rod Reel

10,000 reels of this wire for sale. It's the best galvanized material on the market. It is made of No. 14 wire with the barbs 3 in. apart. It has all the strength of the regular wire and is lighter in weight and costs less for transportation. Each reel contains exactly 80 rods, so that you know just how much to buy. It is not sold by the weight. It is made of high-grade tempered steel wire, with proper tensile strength, and built for barbed wire purposes. You can't go wrong if you buy it. Each reel weighs about 55 lbs. Our price, per reel of 80 rods, \$1.80.

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A practical siding for stores, churches, barns, hotels, basements, etc. It is made of light weight semi-hardened steel built exactly for the purpose. Looks like real brick when on the building. Sheets all 24x68 in. Freight prepaid. We have a limited supply of Colorado except Oklahoma and Texas. Prices to these points on application.

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This is a strictly new guaranteed perfect sheet steel bath tub. Just the tub to make comfortable the moderate home. Length, 4 1/2 ft. We have tubs 5 ft. at \$6.00; 5 1/2 ft. at \$6.25. They are finished white enameled inside and light blue enameled on the outside. Legs are removable saving freight and danger of breakage in shipping. \$14.50 buys our combination bathroom outfit consisting of 5 1/2 foot steel enameled tub with galvanized steel water heater, burns gasoline. Cast iron enameled tubs \$9.00 up.

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Every pump we sell is guaranteed and every pump is tested before shipment. Quality considered, our price is absolutely lower than anyone else can quote you. We can furnish you anything that you may need in this line. Our \$1.00 Pitcher Spout Pump with iron cylinder is a good all around pump for general use. Has bearing tops and can be shifted to any desired position. Fitted for iron pipe, but can be fitted for lead pipe at an additional cost.

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Weigh less and twice as practical as wooden tanks; best manufactured. 32 gallon tank, \$2.00; 47 gallon, \$2.50; 73 gallon, \$2.75; 6 bbl., \$5.50; larger sizes in proportion. Feed Cookers, \$9.20; Steel Wagon Tanks, \$7.00; Galvanized Troughs, 60c. Order now.

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Handiest, strongest and most practical Tool made. Height 8 1/2 inches. Width of jaw 3 1/2 inches; jaws open 6 in. Jaws are steel faced and polished. Anvil has case-hardened top and has steel cut-off. Order now.

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We publish a catalog showing illustrations and full descriptions of all the various stocks that we have for sale. It will be mailed free of cost to anyone answering this advertisement and following the directions as noted in the paragraph on the left. You need this catalog. It's a book that every wise person must have in his or her possession. It tells the story of the wonderful business of our Company and of how we have gathered our stocks together, and it shows you the low price at which we supply these articles to the public. Thousands of customers throughout this land will confirm our statement that our business is conducted honest and fair.

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This Company has a capital stock and surplus of over one million dollars. That is evidence of our financial responsibility. Ask any express agent or any banker anywhere to look us up in the Commercial Agencies, or write to our depository, the Great Stock Yard Institution, the Depository National Bank of Chicago. In writing our Bank be sure to enclose a two cent stamped envelope for reply. Or, ask the publisher of this or any other paper. We guarantee positively that all merchandise purchased of us will be exactly as represented, and that in the event it is found to the contrary that we will take back such purchase at our expense and refund the full purchase price. Or, we will adjust it to your entire satisfaction. We recognize the virtue of a satisfied customer and will go far out of our way to satisfy you. We have been in business since 1898 and have been eminently successful because of our square business principles.

CHICAGO HOUSE WRECKING CO., 35th and Iron Sts., CHICAGO

The editor of this paper recommends and freely endorses the above offer of the Chicago House Wrecking Co. as outlined in above advertisement. The editor urges every reader of this publication to write today for the wonderful bargain catalog issued by this concern. It will prove an eye opener to those accustomed to paying the high prices usually asked for high grade merchandise. Those contemplating building a barn or house will do well to send in their lumber bill for this firm's estimate. They show you in advance just how much it will cost you to build any building you have in view.