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FARM NOTES.

Forage Crops for the Hogs.

With hogs selling around the 10 cent mark in the markets of the country, this animal becomes of more than ordinary importance, but the hog is always of importance upon the farm and, from an economic standpoint, is of interest to more farmers in Michigan than any other kind of live stock. Yet a good many farmers have gotten the idea that with the extremely high values for grain which have prevailed in recent years, there is not much money in pork production even at the high range of values which have prevailed for hogs. However, there are few, if any, farmers who would contend that there is not a good profit in hogs at nine cents or above on the farm and with hogs at this price now, with a prospect of a limited pig crop next spring and with stocks of provisions at an unusually low point, there is no question that pork values will continue high thruout the coming year and probably for several seasons to come.

But grains will also continue at a high average price and in order to get the most from the hogs grown upon the farm, preparation should be made for adequate forage crops to help in growing them. Where a field of clover is conveniently located, it will pay to divide a portion of it into small lots with wire fencing and house the pigs in portable houses in these lots so that the greatest possible growth can be secured from this clover. Then every farmer has, or should have, some small lots about the barn for a convenient run for the hog and other live stock. Too often these are not utilized to the best advantage and, under present conditions, it would certainly be the part of wisdom to get them into some forage crop that would make a maximum of feed for the pigs during the summer season. Two crops that are particularly adapted to this purpose are rape and peas. If two small lots located near the farm buildings are sown to these crops early in the spring, they will make an abundance of profitable forage for the hogs during the summer season when pasturage is generally poor, especially for this kind of stock. Experiments and practical experience of hog breeders and feeders shows that the cost of production is very materially reduced where plenty of good forage is provided for the pigs, and this is a factor in pig production which should not be neglected upon any farm the coming season.

A Basis for Renting Farms.

Is it customary in renting a farm at halves, for the owner to furnish half of all stock, sheep, swine, etc.? Also, to furnish half of all seed used, pay half of the threshing bill, in fact, furnish half of everything, like all farming implements and everything else, and then receive half of the income from everything raised and sold off of the farm after enough has been kept on the farm to feed all stock? If feed has to be bot to winter such stock is it the duty of the owner to pay half of that? If there is anything else to do, to enter into such an agreement will you

please outline the correct plan and then publish in your valued paper at your earliest convenience?

Montcalm Co.

J. H. H.

According to time-honored custom, in an arrangement of this kind the land is supposed to draw one-third of its product, the labor required in conducting the farming operations, another third, and the capital invested in equipment, seed and fixed incidental expenses such as threshing, etc., another third. But while this has ever been a general basis for renting land, all kinds of arrangements have been made as between landlord and tenant, depending upon local conditions affecting each individual case and the desire of either or both to perpetuate the relationship. Generally speaking, the conditions named in this inquiry are quite generally followed out in arrangements of this kind but, as above noted, the details of such an agreement are often varied materially

off the seed end of seed potatoes, as even when planted whole only the most vigorous sprouts will grow and make stalks. However, when potatoes are cheap as they are the present year, it is doubtful if in the long run it will pay to use these little potatoes for seed. There are probably more potatoes than the market will take at a fair price and it would seem to be the season when every potato grower ought to use large, or at least fair sized potatoes for seed, and feed the little ones to their live stock. This would eliminate a large amount of potatoes from the market in the aggregate, and it is quite likely that the balance would be taken at a sufficiently better price so that no loss would be suffered by the growers as a whole, from this method of procedure.

Alfalfa Questions.

Please let me know what I had best do with a piece of sandy land, in fact, a hill of quite light sand; have had best

the soil, it would undoubtedly be much easier to get a stand of alfalfa and better crops would be secured. Alfalfa would be a good crop to sow in an orchard on this kind of land as it makes an excellent hog pasture and would be fairly permanent when once established. It is, however, not as easily started and established as the clover crop upon many farms.

Sand Vetch.

Would like to have you advise me thru Michigan Farmer in regard to sowing sand vetch. If I sow it this spring can I cut a crop of hay from it this summer or does it have to be sowed in the fall? If cut for hay will it make fall pasture? Perhaps you can suggest some other crop for hay. Soil is sandy loam, but badly run. I expect to sow to oats and seed it following spring and so bring it into a three-year rotation.

Newaygo Co.

H. S. B.

Sand or hairy vetch is grown extensively in Europe and has been grown to a limited extent in various parts of this

country for the purpose of renovating poor soils. It is a legume and will thrive on poor soils, but has some disadvantages, one of which is that it is inclined to become a weed where it goes to seed and the seeds are scattered upon the ground. It may be sown either in the spring or fall at the rate of about one bushel per acre. If to be cut for hay, oats or other grain should be sown with it to support the vines, which are difficult to harvest when sown alone on account of their trailing habits of growth. On land where this legume has never been grown, it may be necessary to inoculate the seed or soil with the proper bacteria, as is sometimes the case with alfalfa. The seed is somewhat expensive and, everything considered, it has not found much favor where tried among Michigan farmers, except in a few localities. For a main dependence where some crop is to be sown for hay, probably oats and peas are better than some crop new to the locality and the farmer who grows them. Cowpeas and soy beans may serve a useful purpose in this connection, but one should experiment with them on a small scale at first, which is a safe plan to follow with any new and untried crop. Where

sown in the fall, vetch will make some good pasture before winter, but there will not be a large second growth when cut for hay as it is an annual.

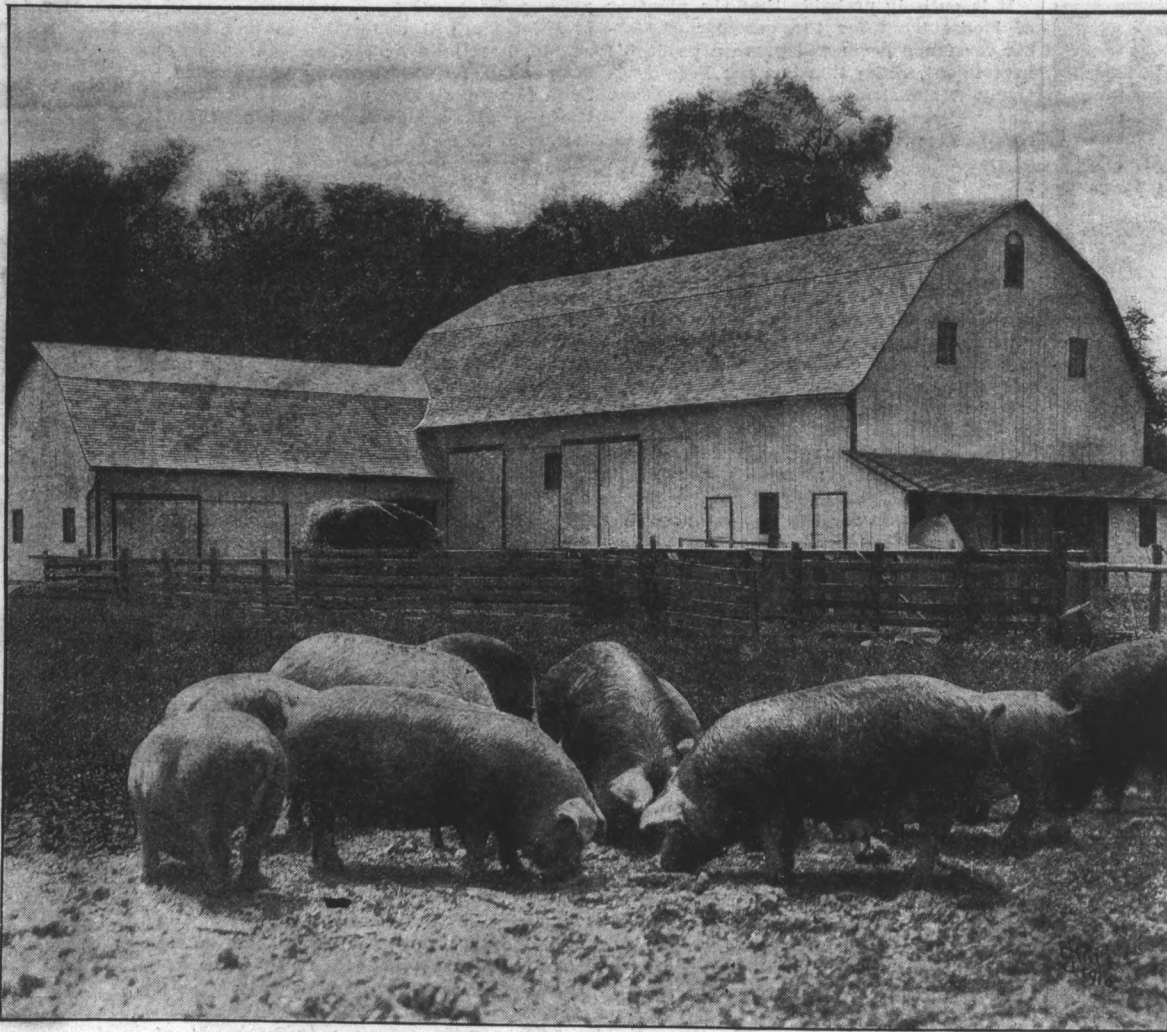
Concrete as a Building Material.

I have in view the building of a cement tool shed, cement clear to the rafters, with a fire-proof roof and fire-proof doors. This building will be close to barn and other buildings. Now, I would like to know whether a cement tool shed will sweat and rust the tools.

Huron Co.

G. M. C.

There seems to be a rather general misunderstanding regarding the characteristics of concrete and its fitness for a building material for farm use. There will be no more moisture in a concrete tool shed than in one made of lumber. The concrete will not "sweat," as suggested by this inquirer. Doubtless this idea that concrete attracts moisture is due to the fact that where stock is con-



The Hog Looms Up Big in the Farmyard where Provision has Been Made for a Good Pig Crop.

in individual cases, since no general rule can justly apply under all conditions.

Cutting Seed Potatoes.

How would you advise preparing small potatoes for seed? The seed I am going to use is the size that went thru a 1 1/2 inch mesh, and over a 1 1/2 inch mesh. They were grown from large potatoes last year, and will be planted on a new piece of ground this year, the soil being a heavy loam. Some say cut in two; others say cut off seed end, and others say plant the potato whole.

Newaygo Co.

W. G. A.

If potatoes of this size are to be planted it would, under average conditions, be better to plant them whole than to cut them at all. If they are cut even once in two the pieces will be so small that in a dry season there will be danger that they will not grow and, in any event, they will not push the plant along vigorously from the start. Experience has demonstrated the fact that nothing is gained by cutting

luck with beans. Can it be seeded to alfalfa, and how and when, and should it have a nurse crop? Also, can I seed an orchard of the same kind of land to alfalfa and make a hog pasture of it? How will cowpeas do on this soil?

Ingham Co.

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As has been stated in these columns, alfalfa may be made a successful crop upon almost any kind of soil which is well drained as high sandy land is naturally well drained. Alfalfa can be grown upon it provided it is in a fertile condition. The fact that beans have grown well upon this land is an indication that it is adapted to leguminous crops. By fertilizing liberally and sowing without a nurse crop, you might get a good stand of alfalfa. If it is not in a fertile condition at present, probably the cowpeas might be a better crop to grow upon it. If a crop of cowpeas were grown for green manure to add to the fertility of

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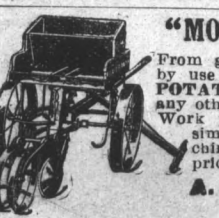


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fined in a poorly ventilated stable there will be either moisture or frost gathering upon the walls, depending upon temperature of the stable. The source of the moisture, however, is not the concrete or stone wall, but rather the condensation of the moisture in the atmosphere resulting from the breath of animals or the vapor due to the fermentation of other materials, which sometimes occurs in a cellar or a granary. But, as noted in a recent issue, a concrete granary is a perfectly safe place to store grain, provided the grain is dry when put in. There need be no hesitation on the part of any farmer with regard to using concrete as a building material on account of any propensity to gathering moisture. Concrete, as ordinarily made, is not wholly impervious to moisture, but may be made so by a cement wash where desired. But no such precaution would be necessary in the case of a tool shed. It is needed only in a silo, where it is necessary to exclude the air, or in a granary where it is desirable to keep out any moisture which might penetrate the walls, but which will not be likely to occur to a damaging extent in our climate, even where the walls are not water-proofed. The fire-proof character of the construction proposed by this inquirer is certainly a strong argument for the use of concrete for this purpose.

Planting Locust Trees for Fence Posts.

Please let me know thru the columns of your valuable paper whether you think it a good plan to plant black locust trees for future use as fence posts, or not. A great number of farmers in this locality ordered some of the trees last fall, and now we hear so many bad things about them that we are a little afraid of planting them. We are told that they will spread from the roots and seed and that it is impossible to ever get rid of them where they have once started. Please write as much about them as you possibly can as I believe it will be of great interest to many farmers.

Tuscola Co.

SUBSCRIBER.

It is entirely probable that the planting of locust trees for the growing of timber for fence posts will prove a profitable investment, altho this has not been positively demonstrated in a practical way. The writer has seen a considerable acreage of locust trees planted on poor land, of not much value for agricultural purposes, which have made a surprisingly good growth and promise well for the future. It is true that where planted in the open these locusts will spread both from the root and the seed which are plentifully scattered, but where planted closely, as they will be under forest conditions, this tendency will not be so noticeable. Of course, they can be destroyed the same as any other grubs after the crop is harvested, if that course is desirable. However, this tendency to sprout and produce a vigorous second growth from the stump is one which should make this timber of greater rather than less value for the purpose named.

THE BUSINESS SIDE OF FARMING.

Regarding Prof. Shaw's criticism of the use of figures from College Bulletin . . . 257, in the issue of February 19, I would say that there was no intention to criticize the bulletin. The matter in mind was that high prices for farm products were justifiable, under existing conditions at present. The cost of producing a given weight of animal at one year was \$4.27 per hundred, as determined by careful experiments at the Agricultural College. Now, the selling price at Detroit of cattle of similar weight was \$3.50@4 per hundred. Farmers who sold in Detroit could get no more. Now, could farmers produce calves at that price if it cost the Michigan Agricultural College \$4.27 per cwt. to produce an animal of similar weight when at the present time cost of feeds is 25 per cent higher than the prices named in the bulletin. To have gone farther into the bulletin would have been irrelevant to the point at issue. There are two schools of cow keepers, viz., those who keep the dairy cow and the others who raise beef. There were 891,000 milch cows in Michigan Jan. 1, 1909, and 849,000 in 1908, while the average price was \$1.00 per head more in 1909. All other cattle, except milch cows, numbered, in 1909, 993,000 and in 1908, 1,003,000—head with no increase in price.

In the breeders' directory in the Michigan Farmer are 19 advertisements of dairy animals and two of beef breeds. The facts are that the farmers of Michigan have not found beef raising profitable, or at least as profitable as dairying, and instead of raising calves have produced milk and veal. The statistics above quoted and the relative prominence of the dairy animal as seen in the breeders' directory, was incidentally proven by

Prof. Shaw's bulletin, when he probably wanted it to prove something else, viz., that the farmer could profitably produce beef. To further analyze the bulletin would be to bring it to date and add 25 per cent to the cost on account of the advanced cost of food, which would make the cost \$5.33 per cwt., which is more than that grade of cattle are worth today, either in Chicago or Detroit. The point, after passing the yearling stage, is that if there is a profit to be made in feeding, stockers can be bot cheaper than they can be raised in Michigan, and that the same feed returns more money from the dairy cow. The actual facts as noted before have confirmed the view that calf raising for beef has not been profitable. If one were inclined to be critical after the whole state had made its answer, as noted before, would be that to correlate a bulletin after the general advance of feed prices and expect that what might be justifiable at the then range of prices would be now is a wrong conclusion.

Take lot 1 in the bulletin for example. Their finish in May, 1907, and the date of their doings in a bulletin of October, 1909, several years afterward, must be read in the light of present costs and prices.

The cost of western range cattle in Chicago feeding steers (see p. 46, year book of figures, Drovers' Journal), ranged as follows: 1905, \$2.70 to \$4.35; 1906, \$2.75 to \$4.60; 1907, \$2.75 to \$4.80; 1908, \$2.75 to \$4.70. During the same periods the average farm prices of corn went from 41.2 cents in 1905 to 60.6 cents in 1908. Oats during the same period went from 29.1 to 47.2 cents. Flaxseed, from which oil meal is made, went from 95 cents to 118.4 cents. Hay, as it happens, was lower in 1905 and 1908 than any of the periods intervening and was respectively \$8.52 and \$8.98 per ton.

The prices given of feed charged for raising these calves is reported, and if any farmer will undertake to buy bran at \$18, beet pulp at \$15, and oil cake at \$28 per ton, he will be sorely disappointed. Prof. Shaw says that prices are now, with the possible exception of two or three items, within the profitable range of farm production. It is such unfortunate expressions as this that leads to the logical deduction that the present range of farm prices is excessively profitable, and that the farmers were making reasonable profits at the range of prices (with two or three exceptions), of 1905, and the prices of 1909-10 are extortion.

The idea that a farmer's labor in raising stock is offset by the manure is not only gratuitously offensive but also a repetition of those who find it easier to echo than to analyze. When an animal is produced on the farm there is abstracted from the fertility of the soil all the animal has consumed. In selling the animal the price does not include this item. If there was absolutely no waste, the manure plus the animal would equal the abstracted soil elements. The actual book-keeping would be a debit item to the soil and a credit item to the manure and the balance, representing the animal, should be returned from the packing houses in the shape of commercial fertilizer to maintain the balance with the debit side. This is actually what the farmer has to do to maintain fertility. Then the proposition to offset the farmer's labor by the manure, which has already been hypothecated to pay for fertility—and then not quite enough, might be called, in the language of the market place, "flim-flamming" the farmer. As long as there are range cattle to compete with native cattle the price of the native animal cannot be advanced to cover soil losses since the government land is used and soil depletion is not considered.

There is no criticism to be made of the bulletin. If experiments always resulted in what was preconceived they would not be experiments, merely verifications. Experiments are merely asking questions, and the answers received should be treated courteously. The people of Michigan have made experiments in beef cattle raising and set an excellent example by accepting the answers received gracefully.

Shiawassee Co. JAS. N. McBRIDE.

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The Leach Sanatorium, of Indianapolis, Ind., has published a book on cancer, which gives interesting facts about the cause of cancer; tells what to do in case of pain, bleeding, odor, etc., instructs in the care of the patient, and is in fact a valuable guide in the management of any case. The book is sent free to those interested who write for it, mentioning this paper.

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HIGH PRICES AND THE FARMER.

The farmer is coming in for a good deal of criticism from a few sources, especially from the pens of daily editors and cartoonists. Just what the effect of this agitation will have upon farming and the farmer is difficult to say, but there is no question but that it is producing an effect, or rather, a combination of effects upon not only the farmer but upon all classes, especially the city laborer. It is also questionable whether all this agitation is a benefit to the farmer and possibly will not produce the benefits for the consumer that it is intended to produce. If, however, it leads to the investigation of the methods and profits of the middlemen, or class of handlers between the producer and consumer, and leads to a more economical system of distribution it will not have been in vain. I wish, however, to suggest a few phases of the question that may work out favorably to the farmer, and some that may not.

1. The agitation will no doubt lead to more or less migration from the city to the farm, which will make farm labor more plentiful, and should cause less land to lie idle.

2. It will, if carried far enough, show that it is not the farmer who is getting the large profits from the produce, but that the high price paid by most of the consumers is due in part to a scarcity of the produce, and in part to high cost of distributing these products to the consumer. This excessive cost of distribution may be due either to excessive profits taken by some of the middlemen who change or distribute these produces, or to the fact that they pass thru too many hands, or to other extravagances in the handling. The excessive cost due to a faulty system of distribution, or to excessive profits of the middlemen, may be largely overcome by careful investigation and strict legislation and law enforcement, but the high prices due to a scarcity of the product can be remedied only by reducing the consumption or increasing the production, or both. The former may fluctuate violently on account of waves of sentiment, like the non-meat-eating pledges sweeping over the country or because of a substitution of one product for another due to improved methods of preparing the latter, but as a whole, we do not expect a great change in the total products consumed. The consumer who cuts down expenses at one point will increase it at another. The latter factor, the increase of production is not easily or rapidly changed except by conditions over which we have little control. More profit from the labor of producing the crop, more help on the farm, a better knowledge of our business, and more persons taking up farming will all tend to increase production, but they are factors which do not work rapidly, and all violent changes will be due to other causes.

Some of the disadvantages that may result to the farmer from the present agitation are:

1. He is beginning to be considered more wealthy and extravagant as a class, and hence more desirable ground for the work of the fakir and extortioner. To illustrate, it may already be noticed that farmers' institutes can not be conducted as economically as formerly. Those with whom business dealings are necessary reason from the cartoons in their daily paper that the farmer is able to pay for all he gets, and a little more, and tucks on a little extra for hall rent, the use of a piano, or music. Heretofore, farmers, as a class, have been entitled to some concessions in a financial way by churches, hotels, hacks, drays, and the public in general. Now this is changing and the farmer pays the same for his accommodations as the traveling man, manufacturer, or merchant. Possibly this will be an advantage rather than a disadvantage as it will raise the farmer in his own estimation and the estimation of others and create an air of independence that is needed by the tiller of the soil in his business and social relations.

2. He is a loser, temporarily, at least, from the sentimental wave which is resulting in a decreased consumption of certain farm products, such as meats, eggs and butter. This will likely be but temporary, but it creates an uncertainty in the markets that is undesirable.

3. It may result in the taking up of agricultural work by persons who are inexperienced and unfitted for it, either on their own farms, on rented farms, or as farm laborers. In either case this would be an undesirable condition, and production might not increase in the proportion

that farm labor increased. It would create dissatisfaction and an ebb tide toward the city later.

4. If thru government investigation or public sentiment distributors, wholesalers, or retailers are compelled to cut prices to the consumer, there will be a strong attempt to cut prices paid for produce by these middlemen in order to keep their profits the same. Whatever success they might attain along this line would be a detriment to the producer.

There are many results which might arise from the present agitation, some good, some bad; but as a whole, I do not think the farmer has anything to fear. He is not holding up the consumer for prices set by a trust, he is in no illegal combine, he is not getting exorbitant prices for his products, and hence he need not fear any investigation.

Calhoun Co.

S. B. H.

STONE LIME VS. HYDRATED LIME.

I saw by the Michigan Farmer that Mr. Lillie had been using lime on his land with good results. I have used some but I had stone lime instead of commercial lime. Please let me know which you think is best.

Huron Co.

G. W.

It is true that I purchased a car load of lime last spring and used the largest portion of it on different fields on different crops. I am not ready as yet to report on the value of this lime. As I stated in the Farmstead Notes one time, I believe I can see that the lime benefited some fields that were into oats and peas and some that were into oats. I also stated that I was sure it was a benefit on the field that I put into sugar beets, but I did not expect to get quick results out of lime. My idea is that I can see more benefit from the lime I put on last spring, this coming year than I did last year, consequently I am not anxious to make any statement about the use of lime. I used a ton of lime to the acre on my field that I sowed to alfalfa the middle of last August. I got a good stand, but I cannot tell the value of this lime upon this land until I have more time. I left a strip thru the field where no lime was used and I will be able to report next summer whether the lime seems to be of any particular benefit to the alfalfa or not. I have faith enough, however, in the use of lime on sugar beets so that I shall put about a ton to the acre on the field that I intend to put into sugar beets this year, leaving a small strip thru it as a check.

The lime that I used was hydrated lime. Hydrated lime, as I understand it, is water slaked lime. In the slaking of the lump lime, or lime after the rock has been burned, water is used to slake it, which makes it hydrated lime, the lime absorbing a considerable per cent of the water. The lump lime you used was undoubtedly just burned lime stone and was more valuable, pound for pound, than the lime I used because it did not contain this water which is absorbed in slaking the lime. However, your lime will more readily air-slake and is more caustic and will not keep as long, but otherwise I believe it to be more valuable than the hydrated lime. I understand that some of the lime companies in Michigan are preparing now to furnish this lump lime ground fine so that it can be readily used. That is, they burn the lime stone and get the regular lump lime, then take this and run it thru a grinder, grinding it up fine and sacking it and shipping it in this form. The only trouble with this lime will be that it will readily air-slake and lose part of its caustic properties, but I think this probably will be in as good shape as you could get lime for agricultural purposes.

COLON C. LILLIE.

SEEDING ALFALFA.

I have been interested in your articles on alfalfa, and I will give you our experience with it. Last summer we plowed under an extra good stand of clover, the last week in June, after the clover had started blossoming. We worked the ground thoroly, and on the 3rd and 5th of July we sowed the alfalfa with buckwheat as a cover crop. We sowed 20 lbs. of alfalfa and half a bushel of buckwheat to the acre, with a disk drill.

Where the clover was good there we have a first-class catch of alfalfa. But in one corner of the field the clover was poor, and there the alfalfa did not seem to catch. But of the 20 acres sowed over 17 acres was a good stand, and when we cut the buckwheat some of the alfalfa was 24 inches high.

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Yours truly,

Benj. Briscoe, Pres't.

LIVE STOCK

THE COW AND THE FARMER.

A discussion has occurred in recent issues of *The Farmer*, relative to the comparative profits of the dairy cow and the beef steer. At the beginning of this discussion, Mr. McBride, of Shiawassee Co., referred to Bulletin No. 257 of the Michigan Experiment Station as a basis for giving the cost of producing a choice yearling feeder and took the price quoted at the Detroit stock yards as a selling basis, to prove that raising feeders at current prices was an unprofitable industry upon Michigan farms. Prof. Shaw replied in defense of the bulletin in the issue of September 19, giving the price at which the cattle mentioned in the bulletin were sold, as finished baby beef, and charging that Mr. McBride's reference to the bulletin was wholly unfair. The discussion is closed by an article in this issue from Mr. McBride's pen, which is self explanatory. This reference to the discussion is made to the end that the readers may not misconstrue the arguments which have been presented to prove two entirely different points. The question as it presents itself to the average reader does not largely concern the comparative profit between the dairy cow and the beef steer. The average farmer is not a specialist either in dairying or beef production, but he must keep some cows upon the farm and unquestionably he had better keep them for the double purpose of supplying dairy products for the home and raising a quality of young cattle which will be an added source of profit when sold for beef, thus combining the economic force of the arguments presented by the two parties to this discussion.

Naturally, the law of supply and demand and the good sense of the American farmer will cause a satisfactory working out of this problem in individual cases and the pointed discussion above referred to will prove helpful in the solution of this problem only in so far as it may aid the practical farmer in applying better business methods to this department of his agricultural effort. Not all farmers can well be dairy specialists, and few will care to follow the other specialty, but most farmers will engage in both lines of production to at least a limited extent. The future would seem to promise well for the making of a fair profit from both of these lines of production to the extent which they are now employed upon the average farm, provided proper attention is given to economic breeding and feeding for the purpose in mind. The business farmer will adjust his operations in these departments of production in accord with his own local conditions and experience so as to insure a maximum of profit from the combination, while the unbusinesslike farmer will continue to keep cows at a loss, both from the standpoint of dairy products and beef produced.

STORY OF THE BREEDS.

Red Polled Cattle.

Will you kindly give a history of the Red Polled cattle in the columns of the *Michigan Farmer*? Are they good dairy cattle and how are they for beef?

SUBSCRIBER.

The Red Polled cattle are the result of the amalgamation of two types of English cattle which were native to the counties of Norfolk and Suffolk, England. According to the best authorities, the native cattle of the county of Norfolk were the smaller of these two types, usually of a deep red color with the exception of the head, which was generally mottled. This breed or type was possessed of fair milking and beef-making qualities. The native cattle of the county of Suffolk had more of the dairy form and were generally of a dun or mouse color. Both types were polled and there was a free admixture of their blood for more than a century before they were recognized as a distinct breed, which recognition dates from about 1846. This may be considered the foundation of the Red Polled breed although it is generally admitted that other breeds were used to some extent in crossing upon these native cattle for the establishment of the Red Polled breed. But such crosses were introduced many years ago and probably have played a very unimportant part in the establishment and improvement of the Red Polled breed. Such improvement was chiefly brot about by careful selection and breeding toward a fixed standard, as well as good care and

liberal feeding. This improvement began more than a century ago, but has, of course, been more rapid since the recognition of the breed as such at the date above noted.

In England the breeding of Red Polls is still largely confined to the counties noted as being the scene of the origin of the breed. However, this strain of cattle was early recognized by the settlers of this country as adapted to the needs of the farmers who desired a general purpose animal, and it is stated upon good authority that polled cattle from the county of Suffolk was introduced into Virginia, and probably some other states, fully 200 years ago. However, the first importation of Red Polled cattle proper was brot to New York in 1873, and the Red Polled Cattle Club of America was formed in 1883, since which time it has served as a medium for the recording of pure-bred cattle of this breed owned or bred in America. The English Red Polled herd book was established at a considerably earlier date, the first volume appearing in 1874.

Considering the comparatively recent establishment of this breed, they are now widely distributed, being registered in this country from nearly all states in the union, and exportations have been made from England to many other countries, including Ireland, Canada, Australia and New Zealand. This breed is quite popular in Michigan, our state being about third in the union in the number of Red Polled cattle registered. The Red Polls have been developed with the idea in view of producing a dual purpose animal and, if numbers in proportion to their recent introduction, be taken as an index, they are perhaps the most popular of the dual purpose types in this country. Of medium size and reasonable uniformity, with a fair beef carcass and good milking qualities, they seem to have well earned this reputation. As a breed, they can not compete in beef making with special beef breeds or in the dairy with special dairy breeds, altho the breed has individuals which excel in the latter respect and the steers fatten easily and smoothly and make excellent beef, thus uniting in a fair degree the qualities which have won the admiration of those who seek a general purpose type of cattle.

TUBERCULOSIS, ITS NATURE AND MANAGEMENT.

This was the subject of a most interesting lecture by Dr. C. E. Marshall, of M. A. C., at the State Round-Up Institute last week. Dr. Marshall spoke of the great mortality resulting from this disease in the human family and further spoke of the necessity of eradicating it in our domestic animals if we would conduct an effective campaign against it in the human family, since it has been proven beyond a question of reasonable doubt that it can be transmitted from bovines to humans or vice versa. Dr. Marshall also declared that tuberculosis is unquestionably on the increase and gave figures to support his contention, showing that even in the cattle maintained upon the open range it had increased from 1 per cent to nearly 10 per cent in some localities, and gave the Bureau of Animal Industry and Minnesota figures to show that from 10 per cent to 20 per cent of our cattle and hogs, particularly in dairy districts, are affected with this disease. He referred to the experience of foreign countries; Belgium, for instance, having 1,000,000 milch cows, of which 400,000 were estimated to have tuberculosis, notwithstanding the fact that Belgium had expended 15,000,000 francs in three years in efforts to eradicate it. In Denmark statistics also show the disease to be on the increase, from 40 to 45 per cent of the cows of that country having the disease. Dr. Marshall further referred to cases in which active tuberculosis germs had been found in the milk supply of large cities, and spoke of the danger resulting to children therefrom. His idea seemed to be rather to impress his hearers with the importance of the problem in comparison with "wet or dry" or other public problems which confront our people, and inspire a general interest among farmers and stockmen as well as physicians and scientists, looking toward its control and eradication.

Michigan Farmer Sells Swine.

The following is an extract from a letter received from E. D. Bishop, Lake Odessa, Mich.: "Please discontinue my swine ad. and continue the poultry ad. My Poland Chinas are all sold. I ought to have had as many more to go around. The Farmer certainly brings the inquiries."



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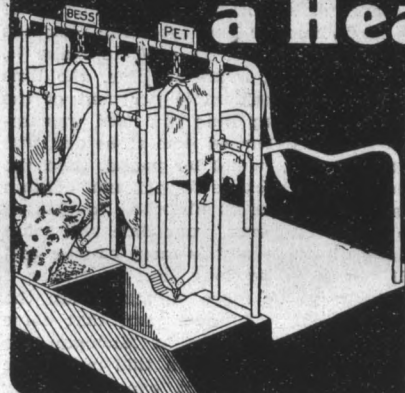
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FOR SALE HORSES—Auction Sale of Horses every Friday at 10 A. M. Private Sales daily. A number of draft and farm horses always on hand including some city mares a little pavement sore suitable for farm work. All horses sold are as represented or money refunded. Jos. Gerou, Horse Market, 476 Grand Ave., Detroit, Mich.

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HEAVES CURED PERMANENTLY. DR. FRANKS REMEDY CO., Detroit, Mich., tel. a how, FREE.

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PROFIT IN SHEEP.

In a recent article on sheep raising, which, by the way, was full of good points, your correspondent said that Michigan farmers are "short on sheep." I entirely agree with him. If I should select one kind of stock, to the exclusion of others, that would return the best results in dollars and cents for capital invested, feed and care, it would be sheep.

I have kept sheep for more than thirty years, beginning in a small way with 10 ewes. By keeping the best ewe lambs and disposing of the poorer ones and not keeping old ewes I built up a flock of 100 ewes, which are good, young, even sheep. I am keeping that number now and they have been paying me \$5.00 per ewe, counting fleece and lamb, for a good many years. The fleece pays well for the feed they get and the lamb is profit. Then the fertility of the soil, where a covering of sheep manure is applied, is increased wonderfully.

Sheep Will Eradicate Weeds.

For cleaning up weeds, such as milkweed, dock, briars, and even buckhorn or plantain, nothing will equal a bunch of sheep. A neighbor owned forty acres to the northeast of my place which had become literally covered with milkweed. He sold it to me. The pasture on this land consisted mostly of June grass and red berry bushes growing among the milk weed. June grass affords very little pasture during July and August in this locality, but milkweed "gets there" in that dry weather. I enclosed the land with a fence and turned the sheep on it. When the grass began to fail the sheep took to the milk weed and briars and gnawed them off to the ground, and as fast as a green leaf showed itself the sheep would nip it off. I pastured this land two seasons, without plowing or seeding to anything, and it kept my sheep in very good condition and totally destroyed the milkweed and briars. The place having been run down by poor farming, I intend to summer fallow it next season and sow to wheat and seed to clover.

Before trying to kill out milkweed with sheep I had a good deal of trouble with the pest in patches on the home farm, having expended many dollars and much time in pulling up, digging out and mowing down milkweed and always with very indifferent success. One patch covering perhaps one-fourth of an acre was dug or pulled up four times every summer for five years, and some are there yet. If one could thoroughly cultivate every week or ten days he could kill them out; but it would be a costly job.

If, then, a man can keep a flock of sheep that will pay good returns in money and fertility to the soil, and at the same time destroy the noxious weeds, he will be doing business on a paying basis. Brother Michigan farmers, let us all keep a few sheep.

Kent Co.

A. VAN ALSTINE.

EARLY VS. LATE SHEARING.

In the Michigan Farmer of February 19, Mr. Edgcomb, of Genesee county, asks in regard to the best time for sheep shearing, and I will say that from long experience I would not go back to the habit of late shearing. I have sheared my flock for 20 years, about the 20th of March, which is a week or ten days before they begin to lamb.

My reasons are: First, I do not think they suffer as much as when sheared late and turned out to take their chances with the sun and cold storms, with the bare skin exposed. When sheared early there is a thick coat of wool about three-eighths of an inch long, to protect them from sun and rain.

Second, if they are sheared early, there will be but very few ticks to annoy the lambs when they come, and that is of great importance, as they cause extreme suffering to young lambs.

Third, you do not need to tag the ewes. Fourth, it gives you about one-fourth more room in the stable, which is a great convenience when the lambs begin to run about.

Fifth, you have the work of shearing done, before the busy spring work comes on. I have a good warm barn, but not a basement. In really cold weather they will lie close together, but you will not see them do that very often. They usually lie scattered about, the same as before shearing, and it is certainly easier for the lambs to suck. The late shearing causes a good many days' suffering from the heat.

Van Buren Co.

E. OSBORN.

LIVE STOCK NOTES.

The remarkable boom in prices for hogs and hog products that has taken place recently is based upon a serious shortage in the hog supply in feeding districts everywhere. Supplies of hogs have failed to keep pace with the increase in population of the United States in the last ten years. In 1901 there were reported 62,876,000 swine in the country, while there are now only 47,782,000, a decrease of 15,094,000; while the population in the same period, has shown an increase of 17,000,000. It is claimed that there is a shortage of hog products amounting to about 800,000,000 lbs. as compared with a year ago. Provision traders take a bullish view of the present situation, notwithstanding the already high prices, but there must be some limit to the prices that consumers will pay. Recent prices of pork, lard and ribs are the highest at this season in thirty-five years. Recent reports indicate that the "crop" of hogs in the east has been closely marketed, and for months to come no large supplies can be expected at market centers east of Chicago. This will explain why eastern shippers have of late been such extremely large buyers of hogs in the Chicago market, thereby creating lively competition among buyers and aiding enormously in booming prices. Everywhere brood sows and young stock hogs are closely held and command extremely high prices, piggy sows having sold as high as \$40 in Putnam county, Indiana, where corn is bringing 60¢@65¢ per bushel on the farm. The high prices are influencing a good many farmers to ship their hogs to market, and they are not waiting to let their swine get heavy, but are sending in consignments that are only medium in weights, the recent Chicago receipts having averaged only 209 lbs., or 10 lbs. less than the average weight three years ago, at which time prices were very much lower. Undoubtedly, it will prove a paying policy to make hogs weigh up well before selling, altho everything in the hog line sells well, the range of prices being unusually narrow.

Recent sharp upturns in hog prices have had a perceptible influence with many cattle feeders, who are beginning to believe that there may be a similar movement in beef cattle values. Unquestionably, this feeling has stimulated the recent buying of stocker and feeder cattle, and the country purchases have reached large proportions in spite of the unusually high prices asked for well-bred cattle, and especially for good feeders carrying much weight. Prime heavy feeders have sold in the Chicago market recently for \$5.50@6 per 100 lbs., prices being bid up by killers, who find these cattle useful for cutting up into cheap beef. But for this competition, many more high-grade feeding cattle would have been shipped to various feeding sections of the east and west this season.

Illinois has taken an important step in aiding breeders of that state to raise sound horses by the law passed recently prohibiting owners from standing stallions for public service without a certificate of soundness from some licensed veterinarian. Several other states have stallion inspection laws to eliminate unsound breeding animals from the horse industry, and such laws have been badly needed. Not enough prime drafters are bred for the actual requirements of the trade.

Not only are hogs very scarce at all markets compared with the big demand from packers and smaller butchers, who have to buy extensively to supply their fresh pork trade, but there appears to be no prospect of any material expansion in the marketings of swine for many months to come. J. J. Vermilya, of Olmsted county, Minn., who is well informed on Iowa and Minnesota conditions, says: "The very fact that the country is making a determined effort to increase production means continued scarcity. Every young sow possible is being utilized for breeding purposes which means that practically the entire female portion of the 1909 pig crop is being held off the market. Last year killers got a large proportion of the old breeding sows in the country, as high prices furnished inducement to convert them into cash. The grower is more intent on stocking up than selling anything and is simply sending his barrows to market. When they have gone look out for a period of acute scarcity. My opinion is that receipts will be very light, everywhere during May, June and July. Just as soon as pigs can be weaned sows will be fattened and rushed to market, affording killers some relief, but meanwhile they must pay good prices."

L. D. Pagett, of Kansas, who marketed four car loads of lambs at Kansas City recently, says that in all the twelve winters he has been feeding sheep and lambs he never passed thru one quite so trying for sheep feeders as the present one. "We have been up against high-priced feed," he says, "and what is still worse, a hard winter to feed. In all the 35 years I have been in that country I never saw a harder winter, and very few winters when there was so much real bad weather. We had some bad winters in the early days, but then we did no feeding. We simply roughed our stock thru, and when we had enough rough feed to get thru it made little difference what the weather was. But now when a farmer has several car loads of steers on feed, or perhaps 1,500 lambs which cost him a whole lot of hard cash, and then has to keep on feeding them on high-priced corn, it hurts. A little loss each day on each animal means a whole lot. My lambs have put on a good gain in weight, in spite of the severe weather, but had the weather been more favorable, they would have gained a good deal more."

Sheepmen are feeding far more lambs than sheep this winter, because in recent years lamb feeding has returned very much greater profits. Hence, many more lambs than sheep are being shipped to market, and it happens frequently that sheep are quicker to advance than lambs, fancy heavy wethers having sold recently as high as \$8 per 100 lbs. in the Chicago market, while the best light yearlings brot \$8.60.

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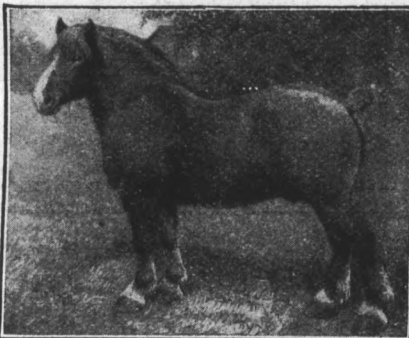
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IMPROVED CHESTERS. Choice young Boars ready for service. Also choice Holstein Bull Calves, of the best of breeding. W. O. Wilson, Okemos, Mich. Both phones.

PURITAN HERD CHESTER WHITES—None better. Surplus bred sows all sold. Orders booked for March and April pigs. WILL W. FISHER, Watervliet, Mich.

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DUROC JERSEYS CAREY U. EDMONDS, Hastings, Mich.

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O. I. C.—Orders booked for spring pigs from State Fair winners. C. J. THOMPSON, Rockford, Mich.

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Prize Winning POLAND CHINAS. Japanese Pekin Ducks, Embden Geese and Buff Turkeys. Zach Kline, Three Oaks, Mich.

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P. C. SOWS, bred—These sows are of great quality and breeding. A few choice S. C. B. Minorca cockerels. R. W. MILLS, Salline, Mich.

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VETERINARY

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

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else.

Nodular Disease.—Tell me what to do for my sheep that have lost their appetite and scour some. J. H., Sand Lake, Mich.—Mix equal parts gentian, ginger, catechu, prepared chalk and powdered charcoal; give each sheep a tablespoonful at a dose in feed three times a day.

Lymphangitis.—I have a horse that developed a case of lymphangitis some time ago, affecting one fore leg, which caused him to travel stiff. I have given hypsulphite of soda and applied vinegar and wormwood, but the leg is not well. G. H., Fairgrove, Mich.—Give 1 dr. iodide potassium and 2 drs. nitrate potash at a dose in feed three times a day for a week, then give the medicine twice a day for four or five days, then once a day for ten days. Feed no grain, but some well salted bran mashes and vegetables and apply one part alcohol and two parts warm water two or three times a day.

Barrenness in Cows.—For the past 12 Indigestion.—I am renewing my subscription on account of the help I get from reading the veterinary department, but am at a loss to know what to do for my three-year-old colt. From what I can tell he has indigestion and his bowels are too loose. What had I better give him? G. G., Marine City, Mich.—Your colt may be having a little trouble teething, which will soon disappear. However, you had better give him a tablespoonful of the following tonic and condition powder. Ground gentian, cinchona, fenugreek, prepared chalk and powdered charcoal; if a tablespoonful does not correct this trouble give him two at a dose twice a day.

Bots.—My yearling colt took sick. I called our local Vet. but he treated her for acute indigestion but she died. Found lots of bots in stomach. J. L., Memphis, Mich.—I am inclined to believe that the bots caused the death of your colt. More can be done to prevent them than in line of medication, for powerful drugs fail to loosen them from the stomach. During May and June the bots usually loosen their hold and come away in large numbers and the animal gets rid of them. When bots are numerous in the stomach they sometimes interfere with digestion, but as a rule seldom do much harm. The legs and shoulders should be kept free from the eggs during summer and autumn and if so your horses will not be troubled with bots.

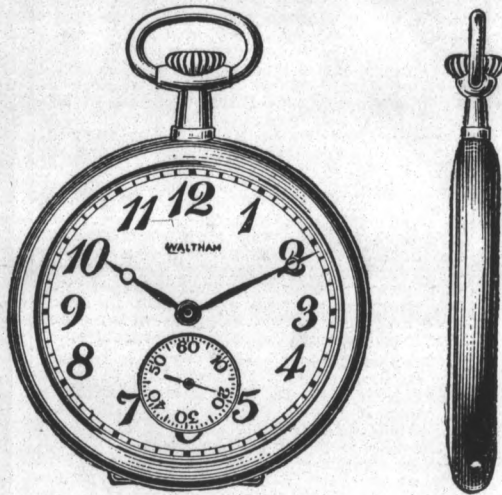
months I have found it troublesome in getting my cows to breed and I might add my heifers do not always get with calf. Any suggestions you may make will be appreciated by myself and some of my neighbors. H. S. K., Muir, Mich.—If your cows have no vaginal discharge and come in heat regular, it is possibly due to an acid condition of the genital tract. In such cases benefit will be obtained by dissolving ¼ lb. bicarbonate of soda in a gallon of clean water that has been boiled, and washing out vagina once a day, using one quart at a time. This is most easily done with a rubber tube with funnel on end. If the cattle are in a healthy condition it will not be necessary to use drugs. In these kind of cases the yeast treatment gives fairly good results. If the cows have a vaginal discharge, dissolve 2 drs. permanganate of potash in a gallon of tepid water and use this solution instead of the soda or yeast treatment.

Cerebro Spinal Meningitis.—I would like to have your advice about some horses which I have the care of. In leading one to the water, it began to wobble and stagger; he grew worse and could not work. In one week he seemed to be stiff and sore; had staggering spells, no soreness of the loins, no contraction of muscles, no straddling gait, no rise of temperature, but showed some signs of nervousness, but had little pain part of one day. One week later another horse was taken sick, showing similar symptoms, but in a milder form. Will you state what you believe ailed them? W. V., Beaverton, Mich.—I am inclined to believe that your horses suffered from a mild attack of cerebro spinal meningitis. In ailments of this kind we rarely find any fever, but frequently the animal shows a sub-normal temperature. This ailment is really an incurable one; however, the animals generally become infected thru either food or water supply; therefore I suggest that you make a change and give each 1 dr. doses of ground nux vomica and 2 dr. doses of bromide of potash two or three times a day. I also suggest that you give the animals good care and keep them warm.

Abortion.—I would like to know how to treat a mare that foaled four months too early. I am unable to state the cause of her miscarriage, and I might add that this mare appears to be in a perfectly healthy condition. T. K., Akron, Mich.—If this is the only case of abortion that you have had among your mares, cows, ewes and sows then I should rather suspect it to be caused by an injury of some kind. However, it is always a good plan to remove an animal that aborts from other pregnant live stock. Use disinfectants about the stall and gutters. Burn the bedding and afterbirth and wet the hind quarters with one part carbolic acid and 50 parts water daily for a few days and if she has a vaginal discharge inject her with some of the following solution: Dissolve 2 drs. permanganate potash in 1 gal. of water and use not less than one quart at a time and use rubber tube with funnel on one end, and don't breed

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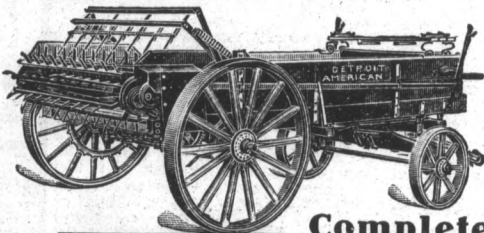
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Made in all sizes. More steel used than in any other spreader; cylinder all steel; steel rake and end gate; simplest feed—six changes made from seat; the only direct chain drive—no gears; lightest in draft. Prove it. Try one free. **Our Wagon-Box Spreader, \$42.50** Freight Paid Delivered in Michigan and only a trifle more

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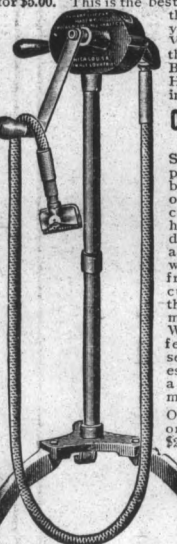
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Dept. 35, Algon, Iowa

her until she is perfectly well. Also give her 30 drops of carbolic acid dissolved in a pint of water and mixed with feed at a dose night and morning for 10 days.

Eczema.—Have been a reader of the Michigan Farmer for a great many years and never miss reading the veterinary column; therefore, I would like to know what to do for a four-year-old mare that is troubled with an itchiness affecting her neck and head. Every time I go near her she is inclined to rub against me. Have applied kerosene and lard and also used liver of sulphur on her neck and head. Neither of these mixtures appeared to have a good effect. I fancy when I am grooming her that there are some small insects get on to me, as I think I feel them on my face and in my hair for a time after. There is a great deal of dandruff on face and mane. T. J. Fletcher, Mich.—I am inclined to believe that you imagine the presence of parasitic life escaping from her to you. As a rule, animal parasites that are on horses and cattle do not care to live on man. She no doubt has parasitic mange. Clip her and apply 1 part flour sulphur, 1/2 part carbonate potash and 4 parts of lard once a day. Also give her a dessert spoonful of Fowler's solution at a dose in feed two or three times a day, and she will soon recover. I suggest that you dip your curry comb and brush in kerosene and discontinue using them on other horse or you may spread this infection.

Chicken Cholera.—If there is a remedy for chicken cholera I would like to know what it is. G. H. W., Hudson, Mich.—If your chickens have cholera the diseased should either be killed or separated from the well fowls, the coop wet with 1 part carbolic and 30 parts water and whitewashed. Dissolve 2 ozs. hyposulphite soda in a quart of water and give each chicken a teaspoonful at a dose three times a day, or the same quantity of the following medicine: Dissolve a dessert spoonful sulphate of iron in 1 qt. of water. Cholera can be controlled if chickens are kept clean and treated as I have suggested.

Rickets.—I have nine-months-old pigs that have rickets, affecting their hind quarters. How shall I treat them? L. O., Provemont, Mich.—Feed more oats and oil meal and less corn. Give them some air-slaked lime in each feed and the pigs will soon improve.

Influenza.—Several of my horses have been troubled with influenza lately; have had them treated by two of our local Vets. Each of them treated influenza differently; one of them is not very successful as some of his cases die. I am told he gives too much linseed oil. I also have a cow that has a poor appetite. F. S. S., Fowlerville, Mich.—Some cases of influenza, where there are lung or heart complications present, prove fatal. Your Vets. know how to treat this ailment. Give your cow 1/2 oz. gentian, 1/2 oz. ginger and 1 oz. baking soda at a dose in feed three times a day.

Sore Feet.—I am an interested reader of your veterinary department, but fail to find a case like mine, therefore I write asking what can be done for a cow that is troubled with sore feet. I first noticed the heels cracked last summer, when I applied pine tar but it failed to help her. Now the feet are discharging matter and the cow is growing thin. E. A. V., Morenci, Mich.—Apply peroxide-hydrogen to feet twice daily, ten minutes later apply equal parts powdered alum, oxide of zinc and boric acid. Keep the feet dry and clean.

Enlarged Gland—Garget.—I have a mare that has a bunch in throat which is growing large and I imagine it is causing her to cough. I also have a heifer that will soon be fresh which is troubled with garget. J. M., Ravenna, Mich.—Apply equal parts tr. iodine and camphorated oil to bunch once a day. Give your cow 1/2 oz. fluid extract of phytolacca root at a dose in feed twice a day; also apply extract of phytolacca to inflamed udder once a day. She should be fed less grain and more vegetables until after calving time.

Eczema.—My Poland China sows are seemingly healthy but have a scaly condition of the skin every year; what had I better do for them? A. J. W., Boyne City, Mich.—Apply one part kerosene and six parts vaseline to sore parts of skin three times a week and give them each a teaspoonful baking soda in feed twice a day.

Contracted Feverish Feet.—I have a horse that has contracted, and hard, feverish feet, which I should like to have treated. C. W. E., Marion, Mich.—Apply lanolin (wool fat) twice a day to fore feet. By blistering coronets in front it will help him, or stand him in a tub of warm water two hours daily.

Leg Weakness.—Can you tell me what is the cause of our young pullets losing the use of their legs? Their toes seem to draw up and they are unable to stand. These chickens look fine, are fed wheat, oats, buckwheat, green cut bone, also green food. J. J. Dr., Crosswell, Mich.—Examine them for lice and you may find some, also look on their roosting poles for mites. It is not a sickness but a weakness.

Bunch on Hock.—I have a four-year-old colt that has a bunch on hock as large as a man's fist. Have been applying soft soap. E. L. S., Loomis, Mich.—A bunch of this kind is not easily reduced. However, you will obtain fairly good results by applying equal parts tincture iodine and spirits of camphor.

Sprained Fetlock.—About the first of December one of my cows went lame in one hind leg, the fetlock swelled, also the foot, and pastern became hot and tender. She has been pretty well part of the time, but is now lame; after applying liniment on the joints for two weeks the swelling subsided, but the lameness hangs on. F. C. H., Hemlock, Mich.—Apply mustard and water to swollen joint once a day for a week, and if she does not improve, blister with cerate of cantharides.

J. B. C., Rogers City, Mich.—You keep the cream too cool. Consult a good butter maker and they will guide you right.

GASOLINE PUMPING ENGINE

This is the Engine for Pumping Large Quantities of Water for Watering Stock, Irrigating, Draining, Pumping out Mines, Quarries, Excavations or other places where a compact, powerful and low priced pumping outfit is wanted.

This Back-Gear Pumping Engine with Stuffing Box, as shown, ready to receive pipe connections, and capable of raising 260 barrels of water per hour to an elevation of 25 feet, 66 barrels to an elevation of 100 feet, or proportionate quantities to any height. F. O. B. Chicago

\$100

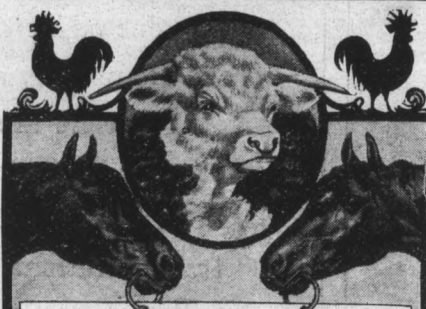
A complete pumping outfit assembled in one compact machine ready to receive the well connections and go to work just as soon as they can be attached. Cylinder, pipe and rod all fitted ready to screw together, for any lift from 25 feet to 100 feet, furnished for \$45.

This is an emergency outfit which can be shipped on an hour's notice and can be set up in complete working order within an hour after it is received.

This engine was specially designed for pumping. It can also be used for running a grinder, fodder cutter, saw or other light machinery; but, where operating machinery is the principal work, our \$75.00 engine is the principal work, our \$75.00 engine is the principal work, our \$75.00 engine is the principal work.

2-H. P. general purpose engine with fluted cooler in cheaper and more suitable. Larger sizes at proportionately low prices. If you need a small engine to operate "any old hand pump" our \$37.50 pumping engine is just the thing. Remember that these engines are manufactured by the company which made the steel windmill business. Thousands of these engines are in use.

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**LICE, TICKS, MITES,
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SKIN DISEASES.**

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"SAVE-THE-HORSE" SPAVIN CURE.



WAR DEPARTMENT.
Office Purchasing Commissary U. S. Army,
Saint Louis, Mo., Nov. 17th, 1909.

Troy Chemical Co., Binghamton, N. Y.
I have great faith in your medicine. I cured a bad tendon on a horse which had been fired and seemed beyond all hope. I also cured a sprained tendon in another horse within two weeks. CAPTAIN J. N. KILLIAN, 3d & Olive Sts., Commissary U. S. Army.

FREEMONT FIRE DEPARTMENT.
Troy Chemical Co., Binghamton, N. Y.

Freemont, La. I., Nov. 29, 1909. Enclosed check for bottle "Save-The-Horse." Every horseman around here thought horse was incurable, but don't think so now. Here is what I have done with "Save-The-Horse," and some of these cases were cured two and three years ago, as you know, and are cured to-day. In fact, I am not afraid to undertake any case without the guarantee.

The first case was a gray mare with bone spavin, over three years' standing. So lame everyone thought she would never go sound again. In six weeks' time she did not take a lame step. Let her to the Freemont Golf Club every week day.

The next case was a fine blooded horse with ringbone, belonging to a friend. In two months' time he did not take a lame step. Also cured a Polo Pony who was hardly able to get out of the stable, both hind legs affected with the worst bone spavin I ever saw. Bought him for ten dollars, and everyone said I would have to saw off his legs and have new ones made. The whole horse was affected. He had been fired and blistered three times. I used "Save-The-Horse," and in ten weeks' time you would not know that he had ever been spavined, except for the marks of the firing iron. Have also cured a fine saddle horse of thoroughbred. Will be glad to see anyone regarding these cases. CARL DARENBERG, a bottle, with legal written guarantee or contract.

\$5.00 Send for copy, booklet & letters from business men & trainers on every kind of case. Permanently cures Spavin, Thoroughbred, Ringbone (except low), Curb, Splint, Capped Hock, Windpuff, Shoe Boil, Injured Tendons & all Lamenesses. No cure or loss of hair. Horse works as usual. Dealers or Exp. paid. TROY CHEMICAL CO., 20 Commercial Ave., Binghamton, N. Y.

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MARE IMPREGNATORS**

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It is a New Invention that you can carry in your pocket and show your friends instantly day or night, either once or a hundred times and without a machine, curtain or light. It is the most Attractive Novelty and most pleasing Dan Patch Souvenir ever Invented and shows Every Motion of Dan Patch 1:55 in pacing one of his Marvelous and Thrilling World Record Miles and it is Absolutely True To Life.

I want to assure you that it is the most successful Moving Picture ever taken of a world champion horse in his Wonderful Burst of Speed. If you love a great horse and want to be able to see him in Thrilling Motion Pictures at any time as long as you live **Be Sure And Accept My Remarkable Offer Before They Are Gone.**

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A MILE OF THRILLING RACE PICTURES, 2400 MOVING RACE PICTURES OF DAN PATCH 1:55

and every one of the 2400 pictures shows the King of all Horse Creation as plainly as if you stood on the track and actually saw the mighty Dan Patch 1:55 in one of his Thrilling Speed Exhibitions for a full mile. Just think of it! 2400 Moving Pictures Taken Of Dan in 1 min. and 55 sec. means 21 pictures taken for every second all of the way around the entire mile track from the back seat of a high power automobile.

You Can See Dan Shake His Head To Let His Driver Know That He Is Ready And Then You Can Watch Every Motion Of His Legs As He Flies Through The Air With His Tremendous Stride Of 29 Feet. As A Study Of Horse Motion Alone This Is Better Than If You Saw The Actual Speed Mile Because You Can See Dan Patch Right Before You For Every Foot Of The Entire Mile And Not A Single Motion Of His Legs, Body Or Head Can Escape You.

You can see his Thrilling Finish as he strains every nerve and muscle to reach the wire in record breaking time, you can see his driver dismount and look at his watch while thousands of people crowd around, you can see his caretaker force his way through the crowds, uncheck Dan and then throw a beautiful woolen blanket over him to prevent catching cold and

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IF YOU ARE NOT A STOCKOWNER AND WANT THE PICTURES SEND ME TWENTY-FIVE CENTS FOR POSTAGE,

Packing, etc., In Silver or Stamps and I will mail you this wonderful Moving Picture of Dan Patch 1:55, the fastest harness horse the world has ever seen. -- If you send me Twenty-five Cents in Silver or Stamps--EVEN if you do not own any stock or land, I will mail it to you postage prepaid. It costs Thousands of Dollars to have these made.

Write At Once to -- M. W. SAVAGE, Minneapolis, Minn.

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TWO WITH RECORDS BELOW TWO MINUTES.

On my "International Stock Food Farm" of 700 acres I own Dan Patch 1:55, Minor Heir 1:59½, Directum Jr. 2:10½, Arion 2:07½, Roy Wilkes 2:06½ and also about 200 head of Young Stallions, Brood Mares and Colts and they eat "International Stock Food" every day. I will be pleased to have you visit my farm at any time and see my horses and their splendid condition. I feel sure that you never saw their equals at any Fair or Horse Show. **ACTUAL TEST IS WHAT PROVES EVERYTHING IN THIS WORLD.** If "International Stock Food" gives paying results for the highest priced horses in the world on my farm it certainly will pay you to use it for all of your stock. Remember that if it ever fails to give your Horses, Cattle, Sheep or Hogs, better assimilation and digestion, purer blood and perfect health with quick growth and fattening that it will not cost you a cent no matter whether you have used one hundred pounds or five hundred pounds and you are to be not only the user but also the sole judge of results. I will leave the entire matter for you to decide and accept your own statement. How the United States Government backs my claims that "International Stock Food" is strictly a medicinal tonic, blood purifier, etc. During the Spanish-American War, United States officials made a special examination and decided that "International Stock Food" was strictly medicinal and I paid \$40,000.00 patent medicine war tax. Can any honorable man deny this evidence? "International Stock Food" and label design is registered in Medicinal Department as a Trade Mark No. 52791 giving it commercial standing and rights as a distinctive

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The United States Government issued me a Trade Mark No. 22886 on the world famous lines, 3 Feeds for One Cent - as showing how cheaply International Stock Food can be mixed with the regular grain feed - My label shows a list of the medicinal ingredients used and 250,000 Dealers have sold "International Stock Food" for over 20 years as a medical tonic preparation.

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ASK YOUR DEALER FOR ANY OF THESE PREPARATIONS and insist on having what you ask for. Beware of many cheap and inferior substitutes and imitations. High Class Dealers Sell My Preparations on my Spot Cash Guarantee to refund your money if they ever fail.

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Signed, M. W. SAVAGE, Owner of International Stock Food Co. -- and also -- International Stock Food Farm.

DO YOU EXPECT TO SEE THE DAY WHEN THESE WONDERFUL DAN PATCH 1:55 RECORDS WILL BE EVEN EQUALLED?

DAN PATCH 1:55 HAS PACED

1 MILE IN	1:55
1 MILE IN	1:55½
2 MILES IN	1:56
14 MILES AVERAGING	1:56½
30 MILES AVERAGING	1:57½
45 MILES AVERAGING	1:58
73 MILES AVERAGING	1:59½
120 MILES AVERAGING	2:02½

DAN HAS BROKEN WORLD RECORDS 14 TIMES

In addition to all these records Dan Patch is proving to be one of the Greatest Sires of both pacers and trotters in all horse history - Look up his large official list of Standard Performers.

Dan Patch 1:55 has gone more Extremely Fast Miles than the Combined Miles of All The Trotters and Pacers That Have Ever Lived. Be sure and remember these facts when you think of any Horse equalling Dan's Wonderful Performances.

For Seven Years Dan Patch has eaten "International Stock Food" every day mixed in his regular grain feed. It has given Dan Purer Blood, More Strength, More Endurance, More Speed and Perfect Health. It is constantly used and strongly endorsed by over Two Million Farmers and Stock Breeders, as the Greatest Animal Tonic, and has been for 20 years. No other preparation has such strong United States Government and practical Stock Breeders Endorsement, as has International Stock Food.

POULTRY AND BEES

IN ANSWER TO INQUIRIES.

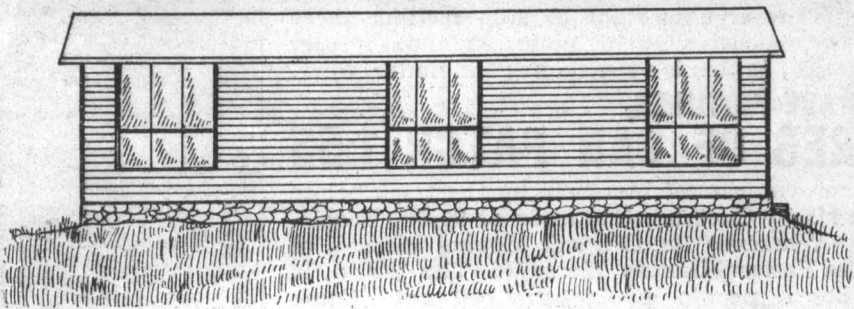
The Bourbon Red Turkey.

Several correspondents have asked whether the so-called Bourbon Red is a distinct breed of turkey. It appears that this breed—for it is now commonly recognized as a distinct breed—was originated in Kentucky some years ago and has become rather favorably known there and in adjoining states. However, we are creditably informed, its admirers have not yet succeeded in having the Bourbon Red recognized as a standard breed, due to the fact that it rather closely resembles the Buff, a breed which for some years has held a place in the Standard of Perfection. Breeders of the Bourbon Red maintain an organization known as the National Bourbon Red Turkey Club, and thru this club has been dispensed some authoritative information concerning the breed. In plumage these fowls closely resemble the Buff, except that the main feathers of wing and tail are pure white, instead of a light shade of buff as in the Buff breed. Its friends place 20 lbs. as the minimum weight for an

head and mouth with some good antiseptic, giving the bowels a moderate purge and then feeding warm, stimulating food. Well advanced cases are seldom treated successfully and your energies can be more profitably devoted to cleaning up the poultry quarters and preventing healthy fowls from coming in contact with the discharges from the diseased ones, since in no other way can this much dreaded disease be surely stamped out.

HENHOUSE HAVING MANY GOOD FEATURES.

The poultry house which I am illustrating and describing has some valuable points that are comparatively new to me. The building is 16x38 feet on the ground, eight feet high in front and five feet at the back. The high side faces the east or south, and contains three windows, each 5x6 feet, extending to the plate. They are discarded store windows, where plate glass was to be used. The foundation and floor are concrete, the walls double-clapboards outside and matched hemlock inside. The perches, nest boxes and drinking vessel do not occupy floor room, leaving the whole space for scratching room. The perches are over a platform which covers the nest boxes



Front Elevation of Henhouse, Showing Position of Windows.

old tom and 18 lbs. for a young one, but claim that old toms weighing 30 lbs. or more are not uncommon. The hens should not weigh less than 14 lbs., or pullets less than 10 lbs. In body plumage the hens should be a shade lighter than the toms, the plumage of the latter being described as reddish brown instead of buff. However, a pair of these fowls seen at the recent Michigan State Poultry show, apparently rather poor specimens of the breed, resembled the Buff breed very closely, except in color of wing and tail feathers. The Bourbon Reds are said to be quiet and easily handled, non-roving in habit and yet very hardy.

Hens Eat Their Feathers.

Old Subscriber, of Iosco county, writes that his hens do not lay but persist in eating their feathers. He feeds corn, clover hay, apples, carrots, mangels and oyster shells. Without further details it is hard to say just what is the trouble here. For one thing, the ration is hardly what it should be. It contains no good protein foods like meat scrap or green bone, and it may be the craving for animal food that induces them to devour feathers. Then, again, if a portion of the grain ration has not been fed in litter to keep the hens busy, it may be that they have simply contracted the habit of feather pulling during the long periods of idleness. Another possible, indeed a very probable, explanation is that the hens are infested with the so-called depluming mites, a very small pest which makes its attack at the base of the feather, usually the feathers on the head and neck. The effect is to weaken the feathers, causing them to break or fall out, and sometimes the hens become feather eaters thru their efforts to get at the seat of the irritation. Examine the bases of feathers on head and neck with a magnifying glass. If the mites are discovered, rub carbolated vaseline into the skin daily wherever there are signs of the presence of the mites. If satisfied that mites are not present, we suggest changing the method of feeding so as to give the hens the greatest possible amount of work and exercise; also adding to the ration meat scrap or green cut bone to the amount of about 1 lb. daily for 20 to 25 hens. The addition of a like quantity of skim-milk, if available, will also improve the ration.

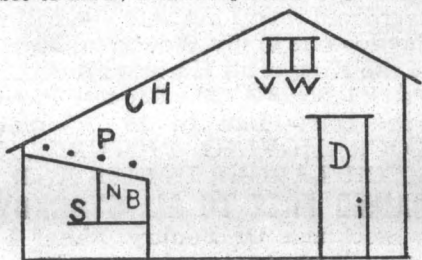
Hens Probably Roup.

Subscriber, Carson City, Mich.:—Your description of the condition of your hens would indicate an early stage of roup. The nature of this disease, the means by which it spreads and the best manner of handling it have been given repeatedly in these columns. Briefly, treatment which may be successfully used in the earlier stages of the disease consists of frequent and thorough cleansing of the fowl's

and under the low part of the roof, to insure warmth. The nest boxes are entered from the rear side, which is comparatively dark, and the eggs are removed from the front, thru a long drop door.

Instead of a loft containing straw or other material to absorb moisture, each gable contains a small ventilating window covered with muslin and fitted with a swing sash, which is opened on fair, moderate days, but always closed at night. The runs extend back from the low side of the building.

In the cross section, N. B. indicates nest boxes—two sets of twelve each; S. is a step extending the length of each set of nests; P shows position of perches;



Sectional View of Henhouse.

H is a hook by which the perches are suspended while cleaning the platform; V. W. ventilating window, and D, the outside door. This seems like a well arranged building to accommodate about 100 hens.

New York.

CLARKE M. DRAKE.

NUMBER OF DRONES NEEDED IN AN APIARY.

The number of drones needed in an apiary is a thing upon which all are not agreed. At this time of year, when one is planning for the season soon to open, it may be well to make an effort to have one's ideas somewhat settled on the subject, so as to know whether to encourage the production of drones or to discourage it by controlling the kind of comb in the hive. The natural instinctive knowledge of the necessity of having drones in the hive at some seasons is very strongly marked in the worker-bee. Drones are rarely kept over winter under normal conditions. They are usually killed, or driven away, at the end of the harvest, yet we all know that if a colony remains queenless its bees will not only fail to kill drones at the beginning of winter, but will even accept drones which have been driven out of other hives. This I know from personal experience, for I have seen Italian drones, late in the fall, in a queenless hive which contained only black bees. These drones could not have been reared there, but had come to the hive when driven from their home, and the bees,

—A FEELING OF SECURITY—

You naturally feel secure when you know that the medicine you are about to take is absolutely pure and contains no harmful or habit producing drugs.

Such a medicine is **Dr. Kilmer's Swamp-Root**, the great Kidney, Liver and Bladder Remedy.

The same standard of **purity, strength and excellence** is maintained in every bottle of Swamp-Root.

Swamp-Root is scientifically compounded from vegetable herbs.

It is not a stimulant and is taken in teaspoonful doses.

It is not recommended for everything.

It is nature's great helper in relieving and overcoming kidney, liver and bladder troubles.

A sworn statement of purity is with every bottle of Dr. Kilmer's Swamp-Root.

If you need a medicine you should have the best.

If you are already convinced that Swamp-Root is what you need, you will find it on sale at all drug stores in bottles of two sizes, fifty-cents and one-dollar.

Send to Dr. Kilmer & Co., Binghamton, N. Y., for a sample bottle, free by mail—it will convince anyone. You will also receive a booklet of valuable information, telling all about the kidneys. When writing be sure and mention the Detroit Michigan Farmer.

GALLOWAY SAVES YOU \$50 to \$300

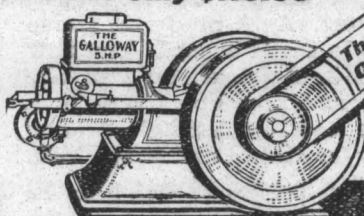
SAVE from \$50 to \$300 by buying your gasoline engine of 2 to 22-horse-power from a real engine factory. Save dealer, jobber and catalogue house profit. No such offer as I make on the class of engine I sell has ever been made before in all Gasoline Engine history. Here is the secret and reason. I turn them out all alike by the thousands in my enormous modern factory, equipped with automatic machinery. I sell them direct to you for less money than some factories can make them at actual shop cost.

All you pay me for is actual raw material, labor and one small profit (and I buy my material in enormous quantities).

Anybody can afford and might just as well have a high grade engine when he can get in on a wholesale deal of this kind. I'm doing something that never was done before. Think of it! A price to you that is lower than dealers and jobbers can buy similar engines for, in carload lots, for spot cash.

An engine that is made so good in the factory that I will send it out anywhere in the U. S. without an expert to any inexperienced users, on 30 days' free trial, to test against any engine made of similar horse-power that sells for twice as much, and let him be the judge. **Sell your poorest horse and buy a**

5-H.-P. Only \$119.50



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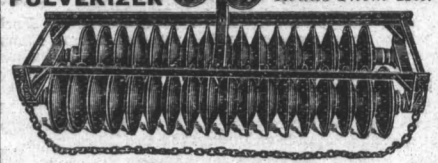
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altho having no possible use for them, had accepted them. It is plain that, realizing the need of a queen, and vainly in hope of securing one, they keep the drones with them in the expectation that they may be needed. It is in part also for this same reason that a queenless colony builds only drone comb.

The life of the drone is regulated very largely by the workers, for he is usually driven off or killed by the workers long before he would die of old age. Any sudden cessation in the flow of honey from the fields is often sufficient reason for the drones being driven out to die, or the killing of them by stinging, if they are persistent in staying in the hive. So it is hard to tell just what age they might attain to, were they allowed to live to the age allotted to them, without persecution.

It has been many times observed that a virgin queen does not make a successful flight until the second or third attempt. If no drones were in the air except the one she was expected to meet, the chance of such meeting would be rather small, and the chance of being caught by some bird rather large. Besides, when a large number are present, there is a chance for selection. The most active and vigorous drone is the successful one, and this tends to the improvement of stock. One has but to observe nature to note that each colony has a large number of drones, and it may not be wise to make too violent a departure from nature. The probability is that in the average apiary there need be no anxiety as to a lack of drones, and the wise bee-keeper will take advantage of this by seeing that no drones are encouraged in poor colonies, but that they are suppressed in all but a few of the very best. If more attention were given to this there would be a distinct increase in the average yield of honey per colony.

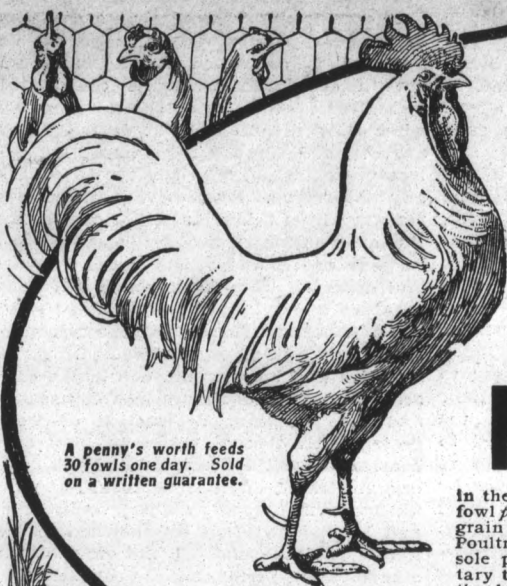
Controlling the Production of Drones.

The common objection to the presence of many drones is that they constitute a horde of useless consumers which add nothing to the common store. Drones in an apiary are an expensive luxury. When they exist in large numbers they may consume the greater portion of the colony's surplus, and man acts wisely in preventing their being produced in such great numbers. When a number of colonies are congregated within a radius of two or three miles, the drones of one or two hives, if numerous in those hives, will very probably be sufficient to cover the space traveled by the young queens.

If we place drone combs in the center of one or two of our most populous colonies we will be much more likely to have early drones, and numerous drones, from such colonies than from others. On the other hand, if we take pains to remove the drone comb, as far as practicable, from all other colonies, and replace it with worker comb, in full combs or in patches, as the case may be, we will still more increase our chances of producing good males. It is, however, a fact that, work as we may, there will be hundreds of drones hatched in colonies where a superficial examination failed to reveal any perceptible quantity of drone comb. It is only when the cells are full of sealed brood that the projecting cappings of the drone brood show themselves with great display. At such times a very good way to dispose of them is to shave their heads off with an uncapping knife. The exchange of drone comb for worker comb, however, should be done before the breeding season has fairly begun. Two drones cost about as much to rear as three workers, and you can rear a very nice little swarm of workers in the same space in which you would have reared a host of idlers.

New Jersey. F. G. HERMAN.

Keeping the entrances clear of dead bees is an important matter, especially during the latter part of winter when the mortality is fairly heavy. Some well informed bee men are predicting that the winter now closing will show unusual death losses, especially in sections where honey-dew honey was common last season and where it was allowed to form a considerable proportion of the winter stores. This product is not a good one on which to winter bees, and if they are compelled to subsist on it for a long period it is likely to induce bowel trouble, causing heavy losses directly or thru inducing the bees to attempt cleansing flights in unduly severe weather. Michigan, however, appears to have been more fortunate than some states in that the proportion of honey-dew honey produced last season was not large.



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DETROIT, MARCH 5, 1910.

LEADING ARTICLES OF THE WEEK.

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CURRENT COMMENT.

Help Get the Parcels Post.

Much has been said and written regarding the establishment of an adequate parcels post in this country. Practically every resident of the rural communities of the state and nation are in favor of it. Local, county and state meetings of Granges and Farmers' Clubs have passed resolutions favoring it, yet passive advocacy of this sort will not bring about its establishment. Powerful interests are opposed to it. It would reduce the profits of the great express companies. Organizations of merchants are arrayed against it, and if the people get an adequate parcels post, they must rise up in unison and make their desires known. The congressmen from the rural districts will not oppose a proposition for which their constituents are clamoring. Indeed, they will be actively working for

it under such conditions, and all that is necessary to bring about adequate legislation along this line is for every interested person to write his representatives in the national congress to that effect. This is a propitious time to take such action. Congress is now in session and has under its consideration a bill which, if it does not provide for all that might be desired in the way of a parcels post, would at least, if passed by congress, establish this system on much broader lines than it now exists and in a manner to largely forestall the objections of every class now arrayed against it, except the express companies, which powerful influence will naturally always be opposed to a proposition which would make their business less profitable. But, on the other hand, it would prove beneficial to every person who now has occasion to send or receive small packages either by mail or express, and the greatest good to the greatest number undoubtedly involves the early establishment of an adequate parcels post. If every reader of this paper will do his part toward bringing about that end in the manner suggested, he will simply be discharging a duty which he owes to himself, and if his example is followed by a majority of the thinking public favoring this proposition, early and satisfactory results will be assured.

Too often the voters of the state are called upon to vote upon a constitutional amendment with regard to which they know practically nothing and which the printed ballot does not clearly elucidate. So long a time intervenes between the passage of a resolution in the legislature providing for the submission of a constitutional amendment to the voters of the state and the date of the election at which it is submitted, that even if the voters were fairly conversant with it when it was under discussion in the legislature, they would have forgotten its provisions by the time the election occurred. For this reason The Farmer has always that it worth while to give the text of the proposed amendments to the constitution prior to the election at which they have been submitted, together with a concise statement touching the effect of the proposed amendment if adopted. There is one proposed amendment to the constitution of the state to be submitted to the electors at the election to be held on Monday, April 4, 1910, the text of which is as follows:

No county shall incur any indebtedness which shall increase its total debt beyond three per cent of its assessed valuation, except counties having an assessed valuation of five million dollars or less, which counties may increase their total debt to five per cent of their assessed valuation.

The practical effect of the proposed amendment would be to give counties the right to increase their total debt to five per cent of the total assessed valuation.

THE ROUND-UP INSTITUTE.

As previously noted in these columns, something of an innovation was introduced in the program for the annual Round-Up Institute in the way of short course lectures upon soils, fertilizers, and crops, delivered by members of the college faculty, which made up the forenoon program each day during the week.

Prof. Jeffery's subject was "Soils," its several divisions covering their origin, nature and distribution, their resources in plant food, the effect of their physical condition on the availability of plant food, and soil temperature and its control. Necessarily these lectures must have been heard to get anything like their full value from them. It is unnecessary to repeat here what Prof. Jeffery said regarding the origin, nature and distribution of soils. Their resources in plant food is of more practical interest to the readers and on this subject Prof. Jeffery stated that chemical analyses showed the average soil to contain sufficient plant food to last for a great many years, the problem, so far as successful agriculture is concerned, being that of making it available for the growing crop. Thus good culture in the preparation of the seed bed and persistent cultivation in caring for the crop are important factors in making this plant food already in the soil available and in securing maximum yields. Regarding the effect of physical conditions on the availability of plant food, and the control of soil temperature, Prof. Jeffery stated that there are three essentials relating to the proper physical condition of the soil which should always be borne in mind, i. e., drainage, cultivation, and the presence of sufficient organic matter in the soil. Touching on the subject of drainage, Prof. Jeffery stated

that experiments showed that a soil was in its best physical condition so far as moisture is concerned for a maximum growth of plants, when its content of water was about one-half its capacity when fully saturated. But drainage has another, and perhaps more important effect upon the soil which is not so generally understood. By removing the excess moisture from below instead of compelling its evaporation from the surface, the temperature of the soil is raised by several degrees. This difference in soil temperature on well and poorly drained soils, is an important factor and one not generally appreciated or understood. Aside from its well known influence in the conservation of soil moisture in a dry season and the necessary destruction of weed pests, cultivation also has an important bearing on soil temperature. Prof. Jeffery illustrated on the blackboard the influence which good and poor cultivation had in this direction by showing that a lumpy surface reflected the rays of the sun instead of permitting the compact surface soil to absorb their heat, and described some experiments which he had conducted which proved that the condition of the surface soil, as affected by different methods of cultivation, influenced the soil materially, a difference of several degrees in the soil temperature being noted. Plenty of organic matter in the soil also betters its natural drainage and increases its powers to hold soil moisture in proper quantities until needed by growing plants. It also has a marked influence upon soil temperature in that by the presence of organic matter in the soil it assumes a darker color, which in turn causes it to absorb the heat of the sun's rays to a greater degree. Altogether, Prof. Jeffery's series of lectures was an argument for better drainage, more thorough cultivation, and a method of handling the soil which would increase its content of organic matter, thus bettering its physical condition in every way and rendering it more fertile and profitable under cultivation.

Prof. Kedzie's series of lectures referred to plants and their composition, farm manures, their composition and adaptation to farm crops, their care and handling, and commercial fertilizers, their source and nature. The writer did not hear Prof. Kedzie's first lectures, but to the reader the subject matter of his last two lectures will be of greater interest, since the adaptability of farm manures for the growing of crops is generally recognized, and understood. Referring to their care and handling, Prof. Kedzie emphasized a few don't's; one being, don't use lime as an absorbent in the stable, as this will surely liberate the available nitrogen in the manure. Another don't along the same line referred to the mixing of ashes with the manure of any kind, which will bring about the same result. Regarding the care and handling of farm manures, Prof. Kedzie referred to the possible conservation and fixing of the nitrogen which they contain by the use of ground phosphate rock and acidulated rock or acid phosphate. He very much preferred the latter substance for this purpose, since the active sulphuric acid in the acid phosphate amounting to something like 14 lbs. to the hundred, is just what is needed to fix the nitrogen in a form which would prevent its escape. Prof. Kedzie commented upon this method of handling farm manures and the losses resulting from those methods which, however, are quite generally understood by the readers. In his lecture he touched upon the several sources of the three essential elements of plant food in widely separated countries, and described the forms in which they are rendered suitable for use upon growing plants, the lecture being more in the way of information regarding the source and form of these different plant food elements than their use in applied agriculture.

Prof. Shoesmith had the third and last place upon this daily program of lectures, the first subject being "How Plants Feed and Grow," followed by "Farm Crops and their Improvement." "Farm Crops and their Rotation," "The Preparation of Soil for farm Crops." The practical feature of this course of lectures really began with "The Improvement of Farm Crops." In this connection he believed that improvement by individual selection rather than any other system of grading seed, is to be desired. In corn, for instance, he would plant in a seed breeding plant a portion of the corn from a few of the best ears available, in separate rows. Then the following year would mix the seed from the balance of the ears giving the best results in this test for productivity. In his later lectures he emphasized

the importance of a proper rotation, favoring a three-year rotation within a longer one, each cycle taking four of these three-year periods to complete.

It is impossible to give anything like a complete review of these lectures in the space available in this issue. Essential points relating to this program will be touched upon in this and succeeding issues, in the departments to which their discussion is suited.

A PROFITABLE WEEK FOR CORN GROWERS.

In spite of a small attendance and a rather mediocre showing of corn, this year's meeting of the Michigan Corn Improvement Association was generally regarded by the members present as a more profitable and satisfactory meeting than any of the five which have preceded it. It was held at the Agricultural College during the week of Feb. 14, in conjunction with a one-week course of instruction in corn growing. The small attendance of members was due largely to the fact that the meeting and course of instruction came before the close of the regular institute season, conflicting with county institutes and local corn shows in a number of the leading agricultural counties. However, a good class of active corn growers and a large number of short course students at the College, more than 250 in all, took the instruction work.

This work consisted of daily lectures during the whole of each forenoon, with the afternoons devoted mainly to practice work in the selection and judging of corn. The lectures began at 8:00 a. m., the first hour being filled by Prof. Jeffery who confined his daily talks to the soil problems which confront the corn grower, the use of fertilizers, etc. During the second hour, Mr. Davis, of Indiana, presented the subjects of seedbed preparation and the cultivation of the crop in all their varied phases. Prof. V. M. Shoesmith occupied the following hour in presenting in detail methods of growing seed by the breeding plot system, also discussing the subject of harvesting and preserving seed. During the closing hour of the forenoon, Mr. Winter, of Illinois, presented in his interesting way, the relation of the score card to corn improvement. In the afternoon all were set to work upon samples of corn, receiving the help of the instructors on various points when necessary. All in all, the school of instruction, or one-week corn school, as it has been called, proved very popular with those in attendance and it is safe to predict that another season, under more favorable conditions, a very much larger number of corn growers will avail themselves of the opportunity to secure this much needed instruction and practice.

The Corn Show.

As intimated above, the show of corn was very small, a number of the classes failing to fill. The samples were scored by Mr. Winter, and the scores are sufficient proof that, despite the rather unfavorable season last year, fully as good corn was shown as at any preceding contest, altho the average quality would hardly measure up to the high standard established at last year's show.

In District 1, comprising the four lower tiers of counties, awards were made as follows, names of exhibitors and scores being given:

Class A—Yellow Dent—Jessie W. Pickett, Kent Co., 80.3; Earl Pickett, Kent Co., 78.9; L. L. Lawrence, Cass Co., 66.9; J. J. Nyenhuis, Ottawa Co., 63.3.
Class B—White Dent—A. W. Jewett, Ingham Co., 51.6; Wm. Ambler, Jackson Co., 49.8.
Class C—White Cap Dent—Geo. Clapp, Lenawee Co., 77.8; C. H. Sudborough, Lenawee Co., 72.1; D. E. Turner, Jackson Co., 66.7; Jos. Kuhn, Ingham Co., 50.6.
Class D—Other Dents—Jesse W. Pickett, Kent Co., 70.7.
Class E—Flints—G. J. Friedrich, Jackson Co., 91.5; J. B. Hood, Lenawee Co., 86.5.

In District 2, comprising the remainder of the lower peninsula, the following awards were made:

Class A—Yellow Dent—E. O. Ladd, Gd. Traverse Co., 66.1; I. A. Kierstead, Montcalm Co., 65.6; G. A. Arnold, Montcalm Co., 64.7.
Class B—White Dent—G. A. Arnold, Montcalm Co., 54.8.
Class C—White Cap Dent—F. C. Arnold, Montcalm Co., 63.1.

Associational Class—This class was open to all local corn growers' associations in the state. The awards went as follows: Kent Co. Assn., 74.3; Lenawee Co. Assn., 73.1; Mason Assn., 66.4; Jackson Co. Assn., 51.5.

At the business meeting of the Michigan Corn Improvement Association, held on Wednesday evening, Feb. 16, the Association's board of directors was authorized to appoint a county vice-president from each county in which the Association has membership. Thru these vice-presidents the board will endeavor to secure a closer and more general affiliation of local corn growers' organizations with the state association. Officers for the ensuing year were elected as follows: Pres., Prof. J. A. Jeffery, Agricultural College; vice-pres., E. M. Moore, Wixom; sec.-treas., Prof. V. M. Shoesmith, Agricultural College; directors, W. F. Raven, East Lansing, A. L. Hopkins, Bear Lake, and J. W. Hutchins, Hanover. W. F. Raven was elected state vice-president of the National Corn Association.

HAPPENINGS OF THE WEEK.

Foreign.

Russian military circles are fearful that trouble will break out with China over the construction of another road across Mongolia. To avoid bringing things to a crisis the foreign department at St. Petersburg has addressed the interested (Continued on page 247).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

AMONG THE HILLS OF DIXIE—BY KATHERINE ATHERTON GRIMES.

VOLUMES have been written about the country on the sunny side of Mason and Dixon; much of it superficial, and much wilfully distorted. Necessarily, false ideas have gained credence thruout the north, both to the credit and discredit of this land and its people. Correct ideas can be gathered neither from mere passers-by nor from those who wish to propagate a boom.

It takes years of association with both land and people to thoroly familiarize one with either. This does not mean that one is held at arm's length, or considered as a stranger, for there is no country under the sun where the new-comer is taken so absolutely on credit as in this land of universal hospitality. It is a point of honor to consider all things good of a stranger until the contrary is proven. Even then the judgment is apt to be charitable.

The south is the Rip Van Winkle of the nation. The long sleep of the past years has been a necessary healing agent. The blows delivered to southern industry by the Civil War were well-nigh fatal. To reassemble the scattered forces, and readjust affairs to the altered conditions, has been a slow and painful process. All thru these forty silent years the work has been quietly going on, and not the least admirable trait of the southern people is the uncomplaining patience and perseverance with which this Herculean task has been accomplished.

The veins of trade could not flow full until the heart back of them began to beat strongly and regularly. The heart of the south, like that of the north, is in the right place—on the farm. Here, it goes without saying, the suffering entailed by the great struggle was most severe. The utter destruction of rural property, the loss of managing hands, as well as the very radical change in labor conditions with the close of slavery days, all contributed to retard agricultural growth. It means much that the seeds of a new growth have been sown so soon.

Near the more considerable towns, farming ways and means are quite similar to those of states farther north. The constant influx of "foreign," i. e., north-

ern, capital and labor, has caused such districts to take on a polyglot of method that may hardly be called a method at all. About seven out of every ten northern farmers know all about farming when they arrive, but they find that Experience opens many books they never knew she had. After a few years of unprofitable experimenting, they learn to take counsel of the knowledge of their native neighbor. This, in conjunction with the practice of those fundamentals which are a benefit anywhere, usually makes for signal success.

Many fine farms, which would ornament any community, are held by both northern and southern owners. These speak loudly of latent possibilities, and

alternating strips of fertile "bottoms" and trackless woods, and a general jumble of meaningless information. But at the end of the trip you are still a rank outsider. A better way is to find a farmer's wagon in town with a bundle of corn-fodder in the back (a sure sign of a long journey) and "make up" with the driver for a "carry." He will be glad of company, the pace of his long-eared steeds will allow you to see most of the country, and if you are addicted to the weed, his hank of "pigtail twist" is as free as the air of his native hills. Moreover, he won't get lost. He knows every timber-road and rabbit-trail, and is at home where a stranger might wander for hours without even knowing "the way to Heaven"—an

You are informed that these lead to homes set back "a right smart little step" from the "big road." Very often this "little step" is half a mile long. The buildings are so situated on account of springs, of which there is an abundance in the hill country. The southerner despises a well as a makeshift and a harbor for "frawgs" and "Betsey-bugs," and will go a mile back to a spring, or build a cistern, instead of using a well. When a well is inevitable, a bucket and windlass are the means of elevation employed. Pumps are reputed to make the water taste, and to be unhealthy.

At the end of your journey you feel like an initiate. No longer on the outside, you have had a glimpse of the real inner circle. Where the wagon at last leaves the highway to follow an indistinct track thru the woods, you are cordially invited to continue on with your new acquaintance. If you are wise, and have no other definite plans, you accept.

The house, nine times out of ten, will be a double log structure. There is a wide, open hall dividing the two parts, and a great chimney stands at each end, reminiscent of roaring fireside comfort when the year wanes. As likely as not, the few windows will be furnished with wooden shutters in lieu of glazed frames. "Why not?" is the potent argument; "they are always open, anyway." The tenth time the log house of former years will have been replaced by a flimsy box affair, having two,

or at most three, rooms, the third being a lean-to cook shanty. Often the latter will be detached from the house by a dozen yards or so.

The interior strikes a stranger as bare and cheerless at first. Not once in forty times is there a carpet, and beds are the principal articles of furniture, as well they need to be in the average family of a dozen or so. Two to four are usually in "the room," while the chances are that a couple more are in the "fur" corner of the cook room. These are always the housewife's pride, and are pictures of neatness and rounded comfort.

The welcome is so hearty that the cheerlessness vanishes like a mist, and in its place stands a comfort as bright



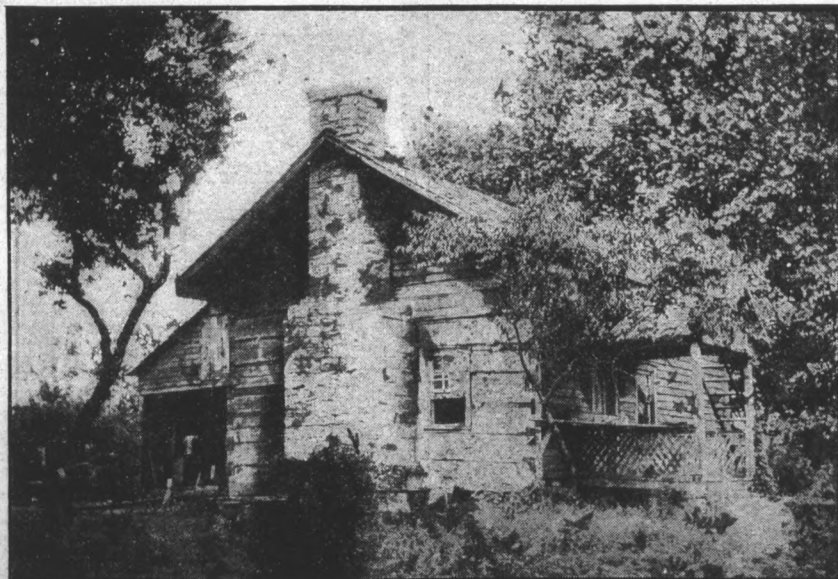
A Dixie Water-wagon—The Southern Farmer Prefers Spring or Cistern Water, Considering Wells Unsanitary.

may be considered as in a sense typical. They, however, are of the new order, and hardly represent average conditions farther back from the towns. The wave of progress breaks against the hills, and becomes discontinuous. Now and then, even there, a hardy northern immigrant has imported foreign ways, but the bulk of the back country is, and always will be, in the hands of native owners.

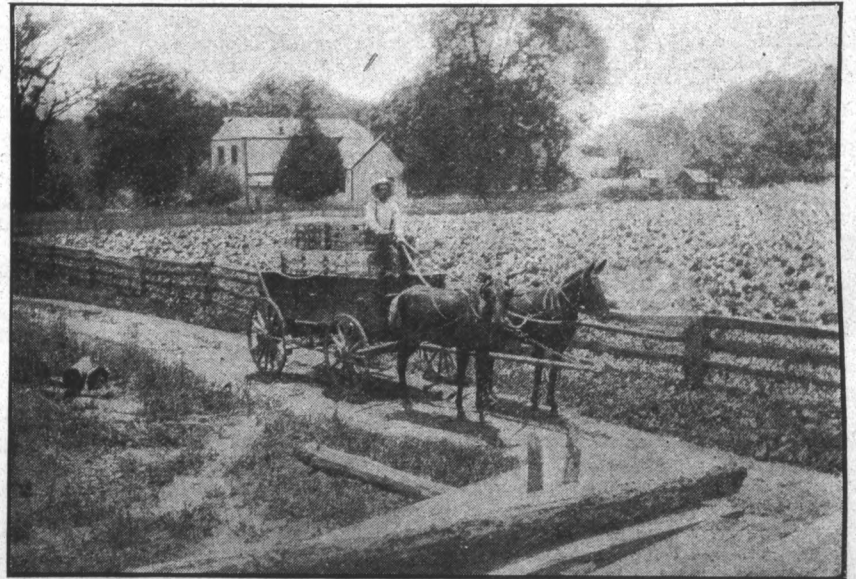
If you wish to see the native farmer at his average best, you need to drive back from the county seat, which is always the most important center, a matter of from twelve to twenty miles. You can hire a livery, and make the round trip quickly and easily, and come back with a confused remembrance of hills and hollows,

elaborated equivalent for "straight up." If there is one thing more than another that is a stumbling block to a new-comer, it is the tortuous twisting of the "plain roads" which he is informed he "cain't miss." Cross roads, connecting the main lines of travel, are even more delusive. Old hands at trail following are more than likely to wind up in a goose pasture, instead of at the desired point, having mistaken the significance of "that ar' fust plain lef' hand turnin'," from the superabundance of "bresh" adorning its "plain" features.

There are few houses to be seen from the road. There appears, however, to be considerable traffic, and numerous tracks branch off at each side of the highway.



Typical Southern Cabin of the Better Class. Note the Chimney of Field Stones.



Average Tennessee Farm, Owned by a Northerner. Cabbages are Main Crop.

and mellow as the golden rays of the afternoon sun, which touch the whole scene to tender beauty. The whole atmosphere is one of welcome, and the hills set it so apart from the world and its make-believes, that you cannot help feeling the sweet sincerity of it all.

When the meal is ready—soon, for the "old man" is hungry—the invitation to "set by and eat up a little snack" is followed by an apologetic "We-uns is pore folks, an' don't set on much, but I reckon yo'-all kin maybe stan' it fur onct." This is entirely uncalled for, as the event proves, and such a spread as is found upon a "company" table in the south will make your mouth water every time you think of it for months.

Butter, to be sure, is usually missing. It has only recently been considered fit for food. The whole milk is churned every day, for the sake of the buttermilk, which is highly esteemed as a drink. The butter is now sold in town. It was formerly thrown away, or used for grease. Indeed, considering the way it is made, that is about all it is fit for.

Meat will appear in foot-square slices of delicious dry-cured ham. You will be casually informed that "thet thar hawg weighed fo' hunnerd poun's," and that another promising specimen would "sure go a heap heavier, 'gin it's hawg-killin' time." A glimpse into the smoke-house, opened with pardonable pride, will show you the swinging hams and sides of perhaps three or four of these record-breakers, together with as many fifty-pound "stands" of lard. It is not uncommon for a fair-sized family to put up a dozen or fifteen pigs, weighing from a hundred and fifty to two hundred pounds each, and render out six or eight stands of lard, every fall as soon as "hawg-killin' weather" comes on. These pigs run loose in the woods all summer, and are finished up in the late fall with bounteous feeds of corn, thrown just outside the front gate.

"Cawn" is the main crop of your host's farm, as you have already gathered. In a field of standing timber, deadened and "breshed out," growing in furrows torn in the virgin soil by a bull-tongue plow, you see a vigorous crop, broad-leaved and

luxuriantly colored. New ground is always preferable to old, as worn soils are seldom brot up, and corn, corn, corn, for twenty years is hard on the constitution. An old field is "laid by" to rest, it being believed that a few years of idleness and weeds is a powerful invigorating tonic. A patch of new ground is prepared by ringing the trees, to deaden them and prevent sprouting from the roots, and fine crops may be secured even before further clearing is done.

The corn is topped and the "fodder pulled" early in the fall while the stumps, with the hardening ears, are left until considerably later. Nothing must interfere with "fodder pullin' time." Old and young, women and children, work early and late, stripping the wide, succulent blades, and tying them in bundles, which they hang in the forked stumps to dry. And fine fodder they make.

The ears are pulled from the stump, "shuck" and all. They are thrown into wagons and stored in cribs. A field of shocks, or a crib of bare ears is a sure mark of northern hands. It is sold by the barrel, of five bushels. It takes a tenderfoot some time to learn to figure prices, as the customary measurements differ from what he has been used to. Blackberries sell by the gallon, as also does milk, butter by the "print," a pound more or less, fowls at so much apiece, regardless of weight. "I wouldn't think of charging moah than a quaitah fo' just a hin," asservates your hostess.

At last you depart, to seek hypothetical acquaintances up the creek (long double-e, please), for you need some plan to parry the hospitable invitations extended. As you leave, your courteous host and pleasant hostess, the nine shy children, and the seven "houn'-daws," gather at the front gate to honor your farewells. Special attention is drawn to one pup, uglier and more lop-eared than the rest, and you are invited to "come back 'gin it's 'possum time, and we'll see what thet thar pup knows."

As you follow the spring path around the turn of the branch, you look back to wave a last goodbye, and the echo of the hearty farewell lingers musically in your ears: "Yo'-all come back again."

time, Mrs. Clinton was invited to inspect the room that was to be her very own. It was pleasing to see the great pleasure she evinced upon entering that room.

"Why," she exclaimed, "this looks just like the last carpet I had woven. An' if there ain't my old mahogany bureau, an' my bed, an' all the other things. Where did you get them all?"

"I bot them for you, mother," answered John's wife. "When I visited you in Chicago I saw that you were not happy, but longed for the old times and the old things. When I came home I told John, and the next day we drove over toward the old place. We hunted up the people who had purchased your things at the sale, and when we told them that we wanted to get them back for you they were willing to accommodate us. I know that they will make you feel more at home, won't they mother?"

Mrs. Clinton looked up from the chair where she was sitting, with tears streaming from her eyes. "Make me feel at home?" she inquired. "Why, these are what I have been longing for. These old things that Eben and I had for nearly fifty years. You don't know how homesick I have been for these old things."

She was like a child as she went from one of the things to another. Coming to the little stand, she opened the drawer and was surprised to find her old, well-worn testament in it. The testament had been given to her when she was a small girl, but Agnes had insisted that it was too old and ragged to be taken to the city. She had thrown it aside and purchased a nice new one with a lot of maps and pictures in it. Mrs. Clinton could get no comfort from reading it and had longed for the old one, with its many marked passages.

That evening, when they were all sitting around the lamp and talking of the happenings of the last year, John inquired: "Mother, do you think that you will be satisfied here, after your stay in the city? After all of the noise and excitement you have been among I am afraid that you will get lonesome."

"Why John," answered the old lady, "this is just what I have been longing for. You don't know how I have longed for a sight of the old fields, once more. I don't feel like I could ever leave your home."

"And you never shall," John declared as he kissed his mother's wrinkled cheek.

The following evening, when John returned from his day's labor in the fields, he peeped in at the open door of his mother's room. She was sitting in her old chair, rocking gently back and forth. The well-worn testament lay open upon her lap, and a half-finished ball of carpet rags was upon the floor by her side.

THE SPRING WILL COME.

BY B. F. M. SOURS.

The winter's blasts, the raging storm,
Beat like wild war abroad.
The hillsides now, with glittering ice,
Must be with caution trod.
The stubbled fields are buried deep—
Beneath the winds that blow—
Beneath a mantle cold and white,
The winter's cloak of snow.

The rivers pause upon their course
And flow not to the sea.
The ice-locked country, bleak and chill,
Sings one weird song to me.
'Tis desolate, all desolate.
In grandeur all its own.
The while we wait the winter's age
And passage from the throne.

Sweet banks of daisies, white and gold,
Stir now my ardent dreams.
The ferns I see, in reverie,
Nod to the sparkling streams.
Brier-roses bloom along the ways,
In old fence corners, where
The hand of man forgot to plow
Or dig about with care.

Dreams come to me of stalk and tree
All covered o'er with bloom.
No night so dark, no gloom so deep—
Except the night of doom—
But dawn will break and man awake;
And so will winter pass.
O violets, what breath is yours—
But will you come? Alas!

How do they come? How can they come?
'Tis mystery to me.
From out the barren clods of death
They break mysteriously.
Earth seems to don the garb of Heaven,
A vestried choir, to sing
The passage of the winter, and
The praises of her King.

So spring will come, and song will break
From bird and poplar-bell.
The merry joy, the parting buds,
No poet's pen can tell.
But over all the waiting lands
The carols will be heard,
Above the glory of the bloom
The gladness of the bird.

Come, bluebird, sing your song to me!
I wait to hear you sing.
The apple blossoms soon will come;
We want the touch of spring.
Thank God for hope! We live; we toil;
Life grieves o'er sorrows here.
But hope and spring, with Christ our King,
Await with joy and cheer.



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BACK TO THE COUNTRY BY HOWARD BANNON.

The time when the old home and all of its furnishings must be sold, had arrived. Nearly a half century before, Eben Clinton and his wife had begun housekeeping in the old stone house. That had been a long time ago and Mrs. Clinton had become so deeply attached to the place that she could scarcely bear the thought of leaving it.

Here it was that her two children had grown up and gone into the big world. Tom, like his father, had become a farmer and lived upon a fine farm a few miles away. Agnes became the wife of a man who was now one of the great merchants of Chicago.

But when Mr. Clinton had passed to the great beyond and Mrs. Clinton was left alone upon the old farm, it was necessary to break up the home. The question of Mrs. Clinton's future had been quickly decided by her daughter.

"Mother must go to Chicago and live with me," she had said. "There is plenty of room in our big house, and then I want her to be free from all cares. She will not have a thing to look after, in our house. The servants attend to everything."

Agnes had taken charge of things on the farm after her father's funeral. She at once announced that they would sell everything. The things were old and, to her notion, not worth keeping.

Mrs. Clinton had hated to part with the old things. She had hoped that she might be able to keep the old-fashioned mahogany bureau, at least. Agnes was obdurate, however.

"Why, mother," she had said, "we couldn't take that big, clumsy thing to the city. Then, it would not match, for I have a nice oak set for your room."

It was a great trial to Mrs. Clinton to see them preparing the things for the sale. Every one of the articles was full of tender memories to her. When the day of the sale arrived she shed many tears at seeing the things carted away.

At last the affairs were all settled. With the few trifles she had managed to keep, packed away in the shiny new trunk (the trunk was not half as nice looking, to her, as the hair-covered one that had been sold) she departed, with her daughter, for her new home.

Mrs. Clinton's new home was fine and

wonderful. How odd it seemed to have a servant, ready to do your bidding at any moment. For awhile Mrs. Clinton was pleased with the novelty of the place, but she soon grew tired of having nothing to do—no chickens to feed, no cows to feed, no carpet rags to sew, but just idleness from morning until night. To be sure, her room was finely furnished, but the Brussels carpet, the oak dresser and the chiffonier were not half as nice as a rag carpet with its fancy stripe and the big mahogany bureau. Then there was a folding bed, and Mrs. Clinton went to bed in fear, each night, lest it should fold up and smother her. Of course, it had a mattress. Oh, how she longed for the soft, warm feather-bed she had been used to all of her life.

Mrs. Clinton had been living in her new home for nearly a year when John's wife went to the city on a visit. She remained with John's mother for several days and easily saw how unhappy that person was. Before returning home she had secured Agnes' consent for Mrs. Clinton to spend several months with John and her at their country home.

When John's wife returned home she told her husband how unhappy his mother was in her city home. She told him of the intended visit to them, and of a little plan she had thought out while on her way home. John heartily agreed to his wife's scheme and the very next day they drove over to the vicinity of the old Clinton homestead. Upon their return home that evening the wagon was loaded with quite a number of the things that had been sold at the Clinton sale.

The next day was a very busy one in John Clinton's house. All of the furnishings of one of the spacious lower rooms were removed and a rag carpet, the last one that John's mother had made, was placed upon the floor. The old mahogany bureau occupied one corner of the room, while a large, old-fashioned bedstead, with an enormous feather-bed, stood in another. Quite a number of other things that had been in the old Clinton home were in the room, also.

After a few days, John left for Chicago. A few more days passed by and he returned, accompanied by his mother. His wife gave her a hearty welcome. After resting in the sitting room for a short

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FATHER'S BEAR HUNT.

BY MARIETTA WASHBURN.

It was in the midst of winter,
In one of the timber states,
That father first went hunting bear
And the tale oft-times relates.

They were camping in a cabin
A few other boys and he,
Where they had the gayest times
And were happy as could be.

All day long within the timber
One could hear their axes ring,
Where the birds in happy summer
Every morning used to sing.

It was evening in the cabin
And their axes ceased to ring;
One of them had gone with bucket
To get water from the spring.

Soon the still of night was broken—
Frightful noises filled the air
As the boy, without his bucket,
Entered with, "A bear out there."

Each one took a gun or pistol
Or a lamp or butcher knife,
And ran from out the cabin
To seek the bear and take his life.

O, they ran and fell and stumbled,
Hunting for that bear's big track
When my pa gave up disgusted,
Turned around and started back.

Then he heard familiar noises—
Something drinking from the stream.
Had he not been a hunter bold
The boys would have heard him scream.

If my pa had not been frightened
He would surely have had to laugh;
For there he was—not the bear—
But a little Jersey calf.

GRANDMOTHER'S LOGIC.

BY A. R.

Robbie Greene was always in a hurry, and he could not take the time to do anything in the right way. Whenever he wanted anything, this same spirit of unrest would show itself, and he would say that he could not wait. To prove that he was really in earnest, great tears would well up in his deep blue eyes and roll down his rosy cheeks.

If the object or plaything was close at hand he would be sure to get it by this means. Or, just as often as he failed in doing this, he would be given pieces of candy or shining new pennies, which always pleased him.

He was petted by all about the house. Whatever could be done to please him was never put off, and for all this he loved them very much in return.

The patter of his little feet over the floor was a pleasant sound to hear. He knew many pretty poems by heart, and could say them quite well for a child of his age. When he came into his grandmother's room he always tried to do his very best and to look as neat as he could. When he would speak his pieces or sing his songs for her he was sure to do it better than at any other time.

Somehow or other he always looked upon his grandmother as being quite a different person from all others that he knew. Her little room was always kept so tidy and neat, everything being in the

right place. There was a little clock that did a great deal of buzzing just before it struck and made one think it would surely go to pieces, but to tell the truth it would strike with a sweet, soft sound like the ringing of a silver bell. The stand was as square as it could be, and never failed to have its snowy cover. In one corner of the cover was the picture of the sun, a rooster, and a child who looked like it might be crying or laughing, just as one might happen to think.

Robbie often wondered what they meant, and whether they had anything to do with his grandmother's being so wise, for she did seem to know so much, and as she sat there, with her white cap

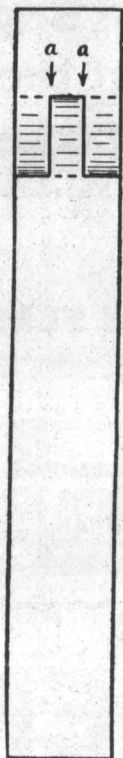


Fig. 1.

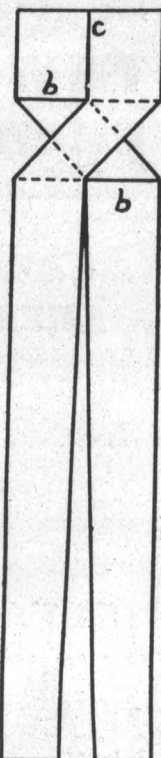


Fig. 2.



Fig. 3.

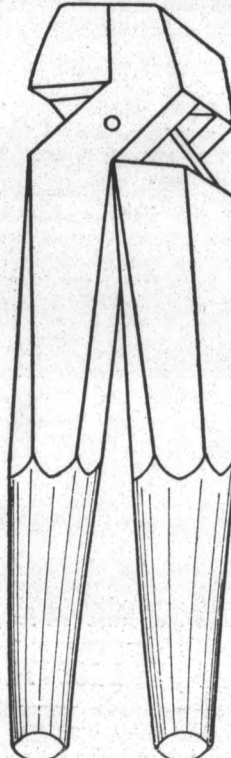


Fig. 4.

and silver-rimmed "specs" on, he could not help but love and respect her. Often when he would become fretful and cry for something he should not have, she would give him a nice little talk and tell him what was best for him. One rule that she would often give to him (and one which we could all make good use of), was "All things will come to those who wait." He had heard this so much that he had begun to think it was a poor rule, as it had never been proved to him. One hot July day while he was looking at some very large red roses that grew upon a great bush in the corner of the yard, he happened to see a whole nestful of the prettiest white eggs he had ever seen. The nest surely belonged to his bantam hen and he claimed the eggs at once. Besides, they were his by right of discovery, for had he not found the nest first?

He set about at once to try to get the eggs. But, oh, such long, sharp thorns as that rosebush did have, and how his fingers would hurt when he touched the least bit. He then tried with a crooked stick, but it was not long enough. He kept on bringing sticks until he had quite a number, but none of them would reach. At last he had a happy thought—he would tie two sticks together. But he was a poor hand at such work, and the sun was so hot that he made a failure each time. He was almost tired out, and was so warm, too. He marched straight into the room where the square stand set with its white cover which had the sun, the rooster and the child. This time the child seemed to be crying. With a trembling voice he told all of the story to his grandmother, not failing to tell that the eggs belonged to him, giving his two good reasons. His grandmother heard him thru his long story with so much patience that he was filled with hope, and he thought he had found the very friend for whom he was looking. But when he came to the end of his story, she said in her quiet way and manner, "All things will come to those who wait." This was too much for him to stand, and he could scarcely see the way out of the room for the great blinding tears.

Like all of his sorrows, this one soon passed away. He thought no more of it until one day he passed by the rose bush and heard a loud cluck, and "peep, peep, peep" came from a dozen little throats. Almost out of breath he rushed into the room where the square stand set. The child upon the white cover was laughing this time, and he exclaimed, "Grandmother, you are right!"

SUGGESTIONS FOR WHITTLERS.

Making a Pair of Pliers.

When a pair of pliers such as we are about to describe has been whittled from a single piece of wood, many will wonder how it was done. Select a piece of soft straight-grained wood free from flaws, $\frac{3}{4}$ inch thick, about $1\frac{1}{2}$ inches deep, and 6 or 8 inches long.

Figs. 1 and 2 show the commencement in plan and elevation. The two short lines (Fig. 1, a, a) running in the direction of the length of the stick are cut clear thru the wood, as also are the horizontal lines shown in the elevation (Fig. 2, b, b). But the short vertical lines

brave spirits, one boy introducing us by hurling a large stone at the half open door.

You can imagine our dismay when, with wide-open mouth, and eyes bulging out of her head, an old witch of a woman came screaming out of the house to learn, whatever in the world possessed us. We did not wait long enough to answer, unless a dozen pair of heels flying over the dust was answer enough.

A few minutes later found us lying flat upon the ground, behind a low hedge, thru which we could watch without being seen, and we were wondering what would happen next.

We had hard work assuring the boy from town that none of us even guessed that the house was occupied. "It surely must have been taken very recently." "I'd never have thrown that rock—" "Oh, what are we frightened about. We didn't mean any harm. Let's go and apologize and offer to pay the damage." "Wonder if they have a dog." "Say, but I was scared." "Bet you won't catch me doing a trick like that again." "Nor me either." And with that we stood up to get a better view of things.

It's lucky we did! Crawling towards us, with a face I shall never forget, one hand clutching a broken piece of fence rail and the other low on the ground as tho picking up a missile to hurl at us, was the husband of that woman.

Tho badly frightened, we did not lose our wits, but ran at top speed along a road leading into a small town near by, the man gaining on us every minute. He had the most peculiar run, a swinging trot from one foot onto the other, but the ground he covered counted. Immediately in front of us, and coming our way, several young men stretched themselves across our path in answer to the shouts of this madman behind.

It is said that angels watch over children and drunkards. It came true in our case, for at no point in the road was there an outlet except just at this spot. We quickly ran towards the opening in time to miss the scamps who tried to stop us.

As we ran we turned around every now and then to see how fast we either gained or lost. With a sickening thud, the boy who was a visitor fell to the ground and asked us to give ourselves up. Going up to him, I shouted, "Don't you suppose if we are tired he is too. Let's jump this fence as if we are good for another mile if necessary."

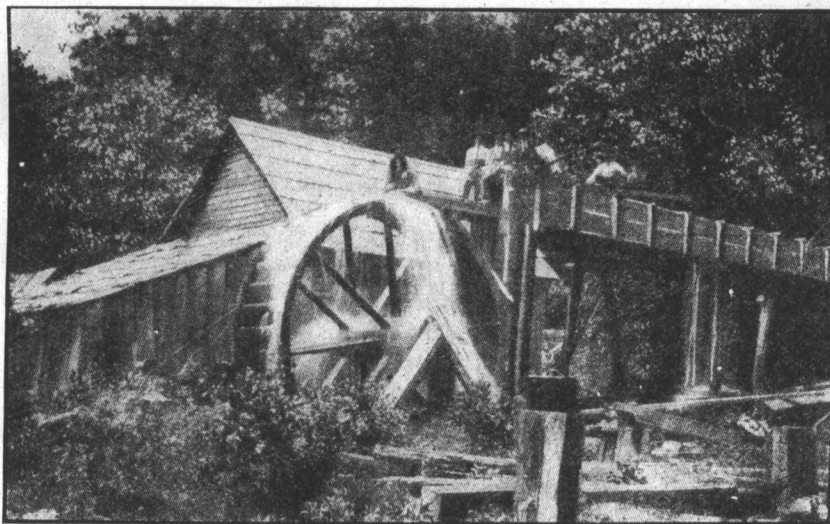
We tried our best to keep up a brave spirit, but our limbs were fast giving out, and since we were nearing the town we agreed it would be well to separate, lest we arouse suspicion.

My path lay thru a small timber yard guarded by a massive dog that bounded towards me as I passed. Even then my troubles were by no means ended. A

A NARROW ESCAPE.

BY I. G. BAYLEY.

I think it was Samuel Johnson who said, "Whenever you meet a boy, always



An Old Dixie Mill of Ante-bellum Days, still grinding Corn.

thrash him, for either he is just coming out of mischief, or going into it."

While we were not exactly bad boys, we were always ready for any mischief, or fun, coming our way. It thus happened that, on a very warm afternoon, we had tired ourselves out, playing ball, and, stretching full length upon the ground under the shade of a large tree, we rested for a while. Not far away was a small unoccupied house which always had a weird attraction for us. It was a house one would hardly care to go thru alone, especially at night.

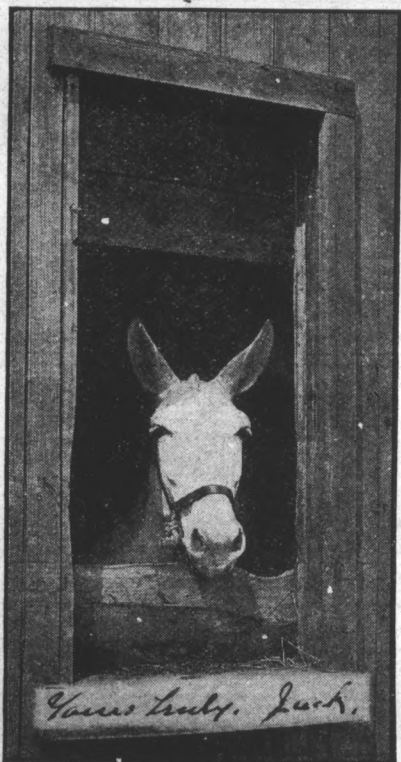
On this particular day, a young friend was visiting us from a neighboring town, who, when being told that the house was full of live ghosts, suggested that we all go over and call on them. No sooner thought of, than up we marched, with very

high fence left no means of getting out except by the way I came.

As I ran towards the gate, not knowing which to fear most, the four-legged beast or the one with two legs, for so he seemed to me, I found the dog waiting for me with every link of his chain well high ready to burst. Making a feint, as tho to pass him, I quickly doubled, and jumped over the chain, reaching the gate in time to see my worst enemy trying, with his last bit of strength, to catch the boy who had almost fainted by the way.

The man seemed to me as one possessed. The peculiar run, the wretched look and his general make-up were enough to unnerve any youngster, and we had just cause to congratulate ourselves that we escaped his awful revenge.

I realized that something must be



A Word from Jack.

The above post card has just been received from Jack. His many friends will be pleased to note that he is looking well.

How often do you eat this food?

A short time ago there appeared in the columns of one of the prominent magazines an article on building brain and muscle by the proper selection of the foods you eat.

A good many people were surprised to find oatmeal placed at the top of the list of foods recommended; but if the article had appeared in an English or Scotch paper every reader would have expected to see first place given to good oatmeal.

As a matter of fact Great Britain and Europe come to us for tremendous quantities of Quaker Oats because it represents to them perfect food, being the richest in flavor and best in cleanliness and purity, of all oatmeals.

Convenience and economy are served by the way it is packed—regular size 10c packages and large size family packages, 25c.

quickly done or he would surely gain his prize. Shouting after him as I dodged behind the gate-post of the timber yard in time for him to see me, I was relieved to find he had fallen into the trap so quickly made.

Mopping the sweat from his brow, with his hat thrown back, he marched up to the door and pulled the bell. Not waiting to see his disappointment, when he found that none of us lived there, I found my way home, resolving ever afterwards to see that my fun was not so dearly bought.

One by one the stragglers came home; and, judging from their actions and wearied looks, I imagine they had made the same resolve.

SMILE PROVOKERS.

First Dog—There's a young man calling on Miss Grace this evening, and he seems real nice.

Second Dog—Yes; I heard her say he was nice enough to eat. That's what I'm waiting for.

"If you wuz to find 100 \$1,000 bills in the street, what would you do with 'em?" asked one boy of another.

"I'd keep 'em till they wuz advertised for," was the reply, "and if a poor man had lost 'em I'd give 'em back to him."

Baby Marjorie, who is a suburbanite, went shopping with her mother for the first time. She had never been in an elevator before. In telling her thrilling adventures to her father, she said: "We went into a little house and the upstairs came down."

"Have you ever noticed," asked the man with rebellious eyebrows, "the likeness between the spiritual and business worlds?"

"I can't say that I have," replied the man with the monogram on his vest. "Well, it is remarkable. Yesterday I heard a merchant and a minister both complaining that collections were poor."

KINKS.

Kink I.—What Am I?

I'm an integral part of darkness, yet the sun must cease to shine when bereft of me.

I join the artist as he saunters slowly thru the leafy solitudes or smiles at sunbeams glinting thru the trees.

I love the strife and stress of wars and battles, and always join the shouts of the victorious.

I'm part of every blissful throng, and still where desperate burdens are, there you will always find me at my post.

I'm close beside the fisherman who angles in the tinkling brook or sleeps in sun-steeped meadows.

I join bold hunters as they search the prairies for howling coyotes or shy gophers sitting in the sun.

I sail the seas in every stately ship that leaves our ports.

I love gladness and crowds, and am seldom found with one alone, and yet I always stay with Sister when she is sorrowful or sad.

I'm never in bad company but still I am compelled to join the prisoner in his prison cell, and if he mounts the dreadful scaffold, I am there before him.

I am in all quarrels and misunderstandings and divorces, and yet the loves and graces hover close beside me.

I increase pain and trouble, and make many sorrows where only one had been before I came.

I flit thru all life's joyous scenes and perfect gladness bring, but still without me there had been no sorrow since the world was first created.

What am I?

Kink II.—Transposition.

A word of four letters which can be transposed to spell four other words, one meaning "certain playthings," another meaning "vessels," another a "place" or "to blemish," and the fourth a "stake."

Kink III.—Men.

The "man" that governs.
The "man" that commands.
The "man" that crushes.
The "man" that makes plain.
The "man" that fetters.
The "man" that makes.

Prizes for Straightening Kinks.—To the sender of each of the ten nearest correct answers to all of the above Kinks, we will give choice of a package of 50 post-cards of general interest, an Atlas of the World, or a book, "A Trip to the North Pole." Where contestant or some member of his family is not a regular subscriber a year's subscription (75c) must accompany answers. Answers must not reach us later than March 26, as correct solutions will be published in issue of April 2. Address answers to Puzzle Dept., Michigan Farmer.

Answers to Feb. 5 Kinks.

Kink I.—Beheadable Word.—Prelation.

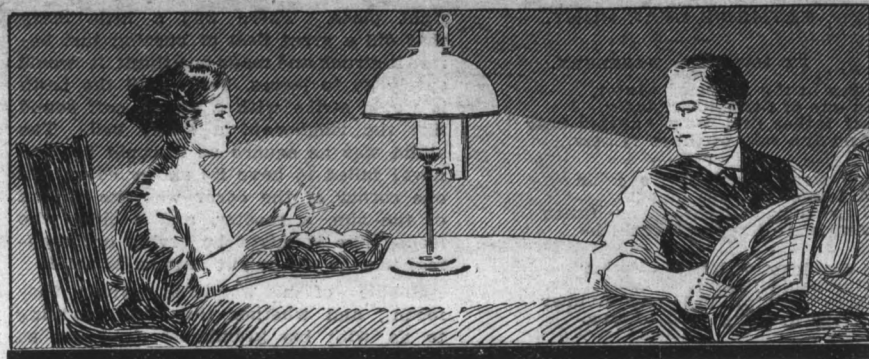
Kink II.—Conundrum.—The letter L.

Kink III.—Four-word Square.—

L	E	A	P
E	A	R	L
A	R	E	A
P	L	A	Y

February 5 Prize Winners.

From among a large number of correct solutions those sent by the following readers have been awarded prizes: Helen Voorheis, Paul Ahlgrim, Mrs. Belle S. Moore, Miss Blanche Shepard, R. J. Eppler, Harold Carson, Aileen O'Leary, Rhoda Parkinson, Mrs. Edna C. Shears and Roswell M. Hall.



"Let's Not Buy Another Thing Till We Put the Fences Right"

THE far-sighted farmer will say that when temptations arise to let the ready money go for some luxury. The luxury is an *expense*; the good fence is an *investment*—a *producer*. A farmer is losing money fast until he has his farm fenced off into a sufficient number of fields to permit of the proper rotation of crops and the most advantageous pasturing of stock.

The fields of a farm are like the rooms in a hotel—the more rooms or fields, the more revenue.

AMERICAN FENCE Made of Hard, Stiff Wire of Honest Quality

is an investment that brings the most returns for the money paid out. It is made of a quality of wire drawn expressly for woven-wire-fence purposes by the largest manufacturers of wire in the world. Galvanized by latest improved processes, the best that the skill and experience of years has taught. Built on the elastic hinged-joint (patented) principle, which effectually protects the stay or upright wires from breaking under hard usage.

F. BAACKES, V. P. & G. S. A.
American Steel & Wire Co.

CHICAGO NEW YORK DENVER SAN FRANCISCO

NOTE.—Dealers everywhere. See the one in your town and have him show you the different designs and give prices. Also get from him booklet entitled, "HOW TO BUILD A CHEAP CONCRETE FENCE POST," furnished free for the asking.

AMERICAN FENCE

8 CENTS
A FOOT

FOR THIS

BEAUTIFUL ORNAMENTAL FENCE

24 inches high. 9c. for 30-inch, 11c. for 36-inch, 12c. for 42-inch and 14c. for 48-inch. Gates are extra. A WONDERFUL BARGAIN. Nothing like it has ever before been offered at any ways near these prices. It is cheaper than a board or picket fence. Is very strong and will last for years. Anybody can afford a fence at these prices. Made of No. 12 steel wire, heavily galvanized. We want every one needing fence or gates to have our Large Free Catalogue No. 20, which illustrates and describes our full line of Yard and Cemetery Fence, Gates, Arches, etc., and quotes the lowest prices ever named for these articles. Write us a postal card today for our Free Catalogue No. 20.

KITSELMAN BROTHERS, Box 316 MUNCIE, INDIANA.



GET A BROWN RUST PROOF FENCE

Don't buy wire fencing with thin, cheap galvanizing. Brown Fences with all No. 9 Coiled Spring Double Galvanized Wires stands and wears like a stone wall. Easy to put up—Requires fewer posts—Won't sag or bag down. 160 Styles.

15 TO 35c PER ROD DELIVERED—WE PAY THE FREIGHT.

Fences for Hogs, Sheep, Horses, Cattle, Lawns, etc. Special Poultry, Garden and Rabbit proof fences with extra close 1 inch spacings at the bottom.

You save money and get a better fence.

Send for Free Sample and test it with acid, or file it and see how thick the galvanizing, then compare it with any wire fence in your neighborhood. Catalog free.

The BROWN FENCE & WIRE CO.

DEPT. 49 Cleveland, Ohio.

"Easy Digging"—FREE!

A postal card to IWAN will bring you this valuable time, labor and money-saving book on 1910 digging methods. Tells how IWAN POST HOLE AND WELL AUGER does a whole day's work in Two Hours. Bites a 3-ft. hole in any kind of soil in three minutes. Cuts clean, smooth holes for poles, posts and wells. No muscle racking, back-breaking drudgery. Bites right through wet or dry hard-pans, sand, gumbo, gravel, clay. Your money back if not satisfactory. Public service corporations cut digging labor cost in half with IWAN Auger. Best dealers sell IWAN Auger. Mention your dealer's name when writing for book. Address: (11) Iwan Bros., Dept. U, South Bend, Ind.

FENCE Strongest Made

Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free.

COILED SPRING FENCE CO.

Box 21 Winchester, Indiana.

Cedar fence posts For Sale.

Write CARR & BARRETT, Butterfield, Michigan.

DRY BATTERIES

renewed by anyone for 10¢ to 35c. per doz. Formula \$1. Will send it this week for 55c. FAIRMOUNT TELEPHONE CO., Leightons Corners, N. H.

14 Cents a Rod

For 25-in. Hog Fence; 15 3/4-c for 26-inch; 18 3/4-c for 31-inch; 22c for 34-inch; 25c for a 47-inch Farm Fence. 50-inch Poultry Fence 33c. Sold on 30 days' trial. 30 rod spool Ideal Barb Wire \$1.55 Catalogue free.

KITSELMAN BROS.

Box 278 MUNCIE, IND.

Don't Rust Farm Fence

Extra heavily galvanized. Sold direct to farmers at manufacturers' prices. 30 days' free trial. Freight prepaid. Also Poultry and Ornamental Wire and Iron Fences. Catalogue free. Write for special offer. The Ward Fence Co., Box 536, Decatur, Ind.

STUMPS

—Farmers having stumps to blast this spring should write THE MEREDITH POWDER CO., Richmond Ind., for prices on Dynamite, Caps and Fuse.

\$10 WORTH OF FUN FOR 10c.

Send dime for trick Pencil. Fool your friends. Adair & Cummings, Sta. H., Cleveland, O.



Next
Time
You
Go To
Town

be sure to ask your storekeeper to show you a pair of Extra Heavy

PRESIDENT SUSPENDERS

Just give them a try-out as a work suspender. You'll find them so much more comfortable than the rigid-back kind you have been wearing and last so much longer, that you will never want to wear any other kind.

The sliding cord in the back takes all strain from your shoulders, allows freedom of motion, and prevents chafing.

Maker's guarantee on every pair—SATISFACTION, NEW PAIR OR YOUR MONEY BACK. If your storekeeper doesn't have the Extra Heavy Weight, made especially for farmers, we will send you a pair postpaid, upon receipt of price, 50c.

The C.A. Edgarton Mfg. Co.
SHIRLEY PRESIDENT SUSPENDERS

756 Main St., Shirley, Mass.



\$1000 IN PRIZES

To be Given Away. Contest FREE and open to everybody. Help the "100,000 Club" and earn big reward. Write today for particulars. Contest conducted by The Fruit-Grower, St. Joseph, Mo. Box 131.

First Prize \$500 Auto
Brush Runabout shown above
Second Prize \$100 in Cash
Ten Other Prizes Ranging from \$75.00 to \$25.00 Each

The Fruit-Grower is the world's leading fruit and farm magazine. January—Special Spraying Number; February—Gardening Number; either issue worth a dollar—sample free. The "100,000 Club" is a National Organization to benefit fruit growers in a practical way. Everyone will want to join. Send coupon today, get busy and earn a prize.

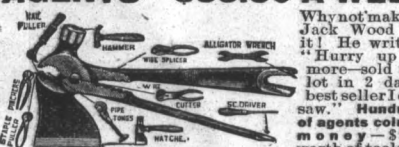
The Fruit-Grower, Box 131, St. Joseph, Mo.

Tell me how I can earn the Auto or Big Cash Prizes.

Name.....

Town..... State.....

AGENTS—\$33.30 A WEEK



Why not make it? Jack Wood did it! He writes: "Hurry up 100 more—sold first lot in 2 days—best seller I ever saw." Hundreds of agents coming money—\$5.50 worth of tools for the price of one. Wonderful invention—drop forged from finest steel. Nickel Plated all over. Astonishing low price to agents—1,200 ordered by one man. Get our grand confidential proposition quick. Sample free—don't delay—experience not needed—write at once. THOMAS MFG. CO., 2245 Wayne St., DAYTON, OHIO

Free Lamp To Agents

Men and women everywhere making up to \$20 a day—no experience needed—recommending—selling greatest invention of age—the Wonder Oil Lamp. Burns common coal oil (kerosene) but 6 times brighter than electricity—cheapest—most brilliant—most satisfactory in the world. White incandescent light. 30,000 families now using. Free Lamp to Agents. Get lamp for your own home and make big profits. Write quick. Simply send name and address.

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Beautiful Post Cards Free!

Send 5c stamps for 10 samples of our very best Gold and Silk Finish FLOWER POST CARDS. With each package we tell you how you may obtain hundreds of others from us absolutely free. Address: POST CARD CLUB, 74 Bagley Ave., Detroit, Mich.



Fish Bite

like hungry fish bites any time, if you use MAGIC FISH LURE. Best fish bait ever discovered. Write to-day and get a box to help introduce it. Agents wanted. J. F. Gregory, Dept. 56 St. Louis, Mo.

OUR YOUNG MEN'S COLUMN.

Gloves and Mittens.

Time was when the good pioneer housewife provided the men folks of the farm family with mittens which were the result of her own handiwork, as she provided them with homespun garments for their best as well as every-day wear. Fortunately, however, for the women of the present generation, modern methods of manufacture have provided both gloves and mittens for every purpose at a cost to the farmer which is little, if any, more than the cost of the material which would be required to make the mittens of the good old days. What has been the housewife's gain in this respect has, to some extent, been the wearer's loss, since for comfort, utility and appearance this product of the grandmother's skillful handiwork was eminently satisfactory.

But none will regret that the mothers of the present day have been relieved of this task with which the grandmothers were burdened, and the advancement of modern manufacturing methods has been as great in this line as in any other, so that gloves and mittens are available for every purpose and all kinds of wear at moderate cost. City young men are able to get along nicely the year thru with the thin kid or dog-skin gloves which, however, are not suitable for winter wear for the country young man who has more or less driving to do during severe weather. This difficulty can be overcome by the use of a knitted glove over the thin leather glove for such purposes with good results, since the knitted gloves will prevent the soiling of the dress gloves which results from driving or caring for horses while they are warm. For those who do not like this combination, the lined gloves of undressed kid or other leather are made in a variety of styles for dress or work-day wear, while warm and serviceable mittens for every-day wear are offered at a moderate price, and are suited to all kinds of work or service.

The essential economic point in the purchase of gloves or mittens lies not alone in the purchase of a good quality, which has been emphasized in previous articles relating to the purchase of other wearing apparel, but as well in having a variety of these necessary articles at hand suitable for the varied wear for which the country young man needs them. It is far better economy to have such a variety on hand than to ruin the gloves purchased for dress wear in the rougher use incident to the work which the average country young man has to do. A pair of good dress gloves, which every country young man likes to have, will last a long time where worn only upon suitable occasions, but are soon ruined as noted above unless they are properly cared for. A pair of good mittens, suitable for wear in driving upon cold days, are soon spoiled if used at rough work. Consequently it will pay the country young man to have on hand a good variety of gloves and mittens at the beginning of each winter and, if he has not provided for them at that time, he will likely find it to be economy to purchase them at this season of the year instead of waiting until next year, not alone because of the practical benefit which he will derive from them for the balance of this season, but as well because he can often secure considerable discounts from such purchases as the winter season advances.

For those who feel that they can afford them, the fur gloves and mittens for driving are a good addition to this department of men's furnishings. They are more expensive to buy than other grades, which may be worn for similar uses, but have the advantage of being durable so that when the investment is once made, it does not have to be duplicated for some years. These should be large enough to permit the wearing of a thin glove inside of them for the reasons above noted.

"A stitch in time" will often greatly prolong the length of service of either gloves or mittens in many cases. The better quality of either will last much longer without ripping, than will the cheaper goods, but often a thread will become cut or worn, and if the damage is repaired at once and in a suitable manner, much good service will be insured from a glove or mitten that would otherwise be quickly ruined from neglect. Various methods are employed for cleaning soiled gloves or mittens, but the better way for the country young man as above noted, is to keep them clean, at least those intended for best wear as long as possible.

Why Eight Million People Prefer "Ball-Band" Rubber Footwear



We pay \$1,000,000 a year for the extra quality that you get at no extra cost when you buy "Ball-Band" Rubber Boots and Arctics.

Eight Million People have learned by actual test that "Ball-Band" Rubber Footwear excels in service and satisfaction.

From the very first, we have sacrificed extra profits in order to earn for "Ball-Band" goods the reputation for highest quality ever known in rubber footwear. Now that we have gained supremacy, it is vital to us that we hold and still further enhance it. To cheapen the quality now would be nothing short of disastrous.

We Put \$1,000,000 a Year Into Quality

Much of it goes into crude rubber, which we buy in million dollar lots. Then comes the big cost for skilled workers in rubber—men who have mastered each process and operation.

Forty acres of floor space, hundreds of machines, vast quantities of high-grade materials, an army of highly trained men—these are the factors that aid us in making "Ball-Band" goods the best that money can buy.

Join the ranks of the 8,000,000 who buy "Ball-Band" because they are best. Some dealers, who also sell other brands which cost them less money, hand out inferior rubber footwear as equal to genuine "Ball-Band" products.

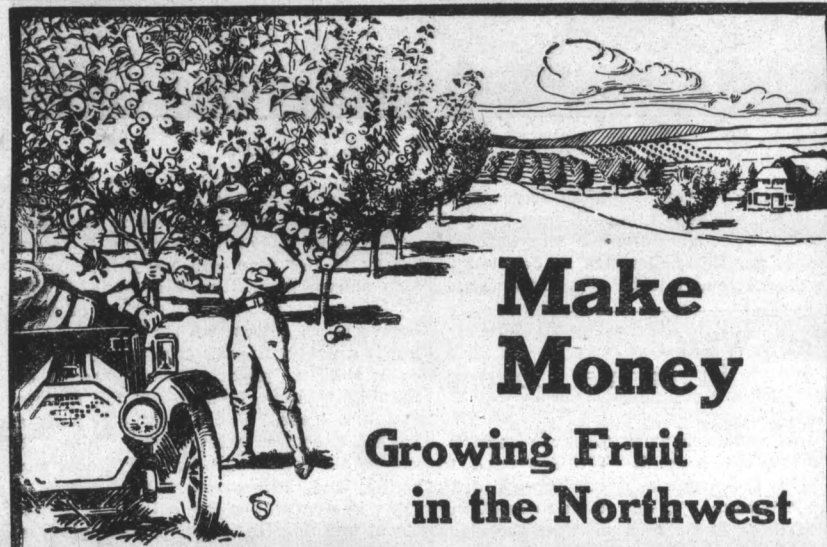
Be sure to look for the "Ball-Band" Trade-mark—the little Red Ball, which we place on every pair. It's for your protection. This same Trade-mark will be found on our famous All-Knit Wool Boots and Lumbermen's socks—the most durable woolen footwear in the world.

GET THEM OF YOUR DEALER.

Mishawaka Woolen Manufacturing Company, Mishawaka, Ind.

[9]

"The House That Pays Millions For Quality."



Make Money

Growing Fruit in the Northwest

You can realize \$500 to \$1,000 per acre per year from apples, pears and peaches, \$300 to \$500 per acre per year from berries; \$300 to \$600 per acre from grapes. Gratifying returns from vegetables, grains and alfalfa, also.

The Northern Pacific extends into or through Minnesota, Wisconsin, North Dakota, Montana, Idaho, Washington, Oregon. New, rich territory being opened up by extensions now building. The Homeseeker's Chance!

The irrigated lands in Montana, Idaho, Washington and Oregon reached by the Northern Pacific offer you the most profitable opportunities for farming and fruit-growing to be found anywhere in the United States.

The prize-winning fruits almost invariably come from orchards in the Northwest. The climate and the soil are great factors in the popularity of this

country. People are constantly buying Northwestern lands. Don't delay too long—write tonight for information about the State that interests you

The Scenic Highway Through the Land of Fortune

Northern Pacific Railway

L. J. Bricker, General Immigration Agent
Dept. 28, St. Paul, Minn.

A. M. Cleland, General Passenger Agent, ST. PAUL



Free and Clear to Your Depot on 30 Days' Trial

NO MONEY DOWN—NO CONTRACT

This big money-maker is yours, for 30 days' use, anyway, no matter where you live, without a penny of expense to you. I'll pay the freight. I don't want any money in advance—any deposit—any contract. All I want is your permission to ship you a—

CHATHAM FANNING MILL, SEED GRADER and CLEANER

Then, if you want to keep it, pay me my bedrock, factory price—on easy terms. I think you'll want it for keeps when you know how fast it makes money by giving you clean, graded seed to plant and sell. One means full crops—necessary when land is so high; the other means top prices when you sell. MY FREE BOOK, No. 167, will tell you all about it. Send your name and address, now, so I can make you my remarkable offer. Ask for Book No. 167. Use nearest address.

Manson Campbell, President, THE MANSON CAMPBELL CO., Detroit, Mich.; Portland, Ore.; Kansas City, Mo.; St. Paul, Minn.



If you keep it—take a year to pay me.

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Direct To You from our own factory at lowest factory prices. We are manufacturers and handle no 2nd hand nor short length stuff. Every part of our roofing and siding is made in our factory from genuine Charcoal Iron, Double Refined Puddled Iron or Steel. Put on the kind of roof that wears. Ours is guaranteed. It isn't the best you can buy anywhere, don't pay for it. Easy to lay. No experience needed. Tell us about your building and let us quote you factory prices. Write for Metal Goods Catalog. It is free.

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THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY

in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It is FREE.

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New Rupture Cure

Don't Wear A Truss.



Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lymphol. No lies. Durable, cheap. Sent on trial. Pat. Sep. 10, '01. CATALOGUE FREE. C. E. BROOKS, 2749 Brooks Building, Marshall, Michigan.

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WOMAN AND HER NEEDS

WHAT IS EMMANUELISM?

Relating What the Leaders of this Movement Claim for Their Doctrine.

THIS is pre-eminently the day of new ideas. Anybody with a new suggestion, no matter how wildly impossible that idea may be, is sure of respectful attention, simply because his idea is new. In business, in science, in philosophy, in religion, in the home, this fact holds true, the new idea is studied carefully in the hope that it will prove the panacea for which mankind is looking.

In things religious the new comes to us under various names, Christian Science, New Thought, Emmanuelism, all three claiming many faithful adherents. And all are worth a thorough understanding, even if we are to reject all three as heresies after getting to the bottom of their teachings. Of the three, the Emmanuel doctrine is the most surprising, as it comes from that most conservative of all established churches, the Episcopalian.

This new doctrine, which its founders claim is merely a revival of an old one, first came into light in 1906. It derives its name from the Emmanuel church in Boston, whose rector, Dr. Worcester, and assistant rector, Dr. Samuel I. McComb, are the fathers of the movement, and like the other two cults its theme is the power of the mind over the body. It does not go to the extent of claiming there is no such thing as disease; instead it admits the idea of organic diseases, and before taking patients for treatment, the leaders insist that they shall have a thorough medical examination. Then if there is no organic disease, that is, any disease caused by the breaking down of the tissue of some organ, but the trouble is purely functional, the sufferers are admitted to the classes, or clinics as physicians would call them, and the effect of mind treatment, or mind cure is tried.

The theory upon which Drs. Worcester and McComb have built up their doctrine of mind cure is very simple. Everyone knows how quickly the mind acts upon the body. You are terribly frightened and your heart stops beating, as you say, or perhaps you become deathly sick, and could not retain a mouthful of food if you were to take it. You are worried, and you lose your appetite, become weak and listless, and run down. The cause of the worry is removed and immediately you pick up. A mother loses her baby by death and her grief is so great she has a sick spell. Her organs are perfectly sound, but she is sick bodily, sick because her mind is sick. Perhaps she dies, and then we read in the papers, "Died of Grief." Her life was wiped out, not because of a diseased body, but because of a diseased mind, and this disease of the mind was powerful enough to stop the bodily functions.

On the other hand, when your mind is at rest, you feel well physically. You know by experience how much more you can accomplish when you are happy and contented, than when you feel worried and discontented. If you are well mentally, you have a good appetite, your food digests well, you sleep well, and all the organs of the body perform their work, their functions, in other words, harmoniously. This is true because all the work of the body is controlled by nerves, which, as we know, are in turn controlled by the brain. The brain in its turn is controlled by our thoughts, so that if we think morbid thoughts, the brain becomes diseased, reflects its troubles on the nerves which in turn affect the body, and we have a diseased state of body, which can be altered only by thinking the right sort of thoughts.

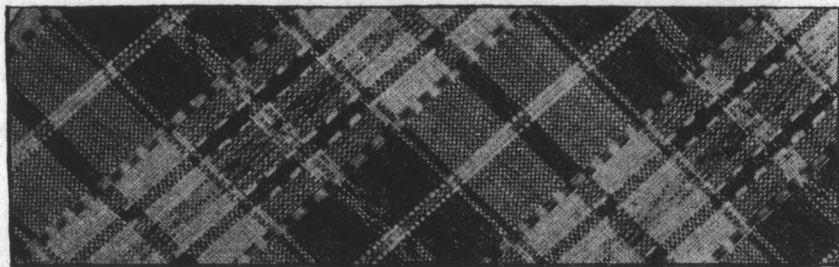
The whole idea in a nutshell is worded by Dr. McComb in the book, "Religion and Medicine." "All functions of the bodily organism are controlled by nerves, which end in the brain mechanism, which in turn is dependent on ideas. If, then, mischievous ideas create a morbid state does it not follow that good ideas will neutralize these first and thereby dissipate the nervous or mental trouble? In other words, if one state of mind can produce a disease, another state of mind can affect a cure."

All sorts of nervous troubles are treat-

ed by these leaders in the Emmanuel movement, neurasthenia, which we have long termed nervous prostration; hypochondria, or the dwelling on one's state of health; psychasthenia, absurd imaginings, like a dread of narrow places or broad open spaces, the fear to be left alone, etc.; melancholia, and other phases of functional neuroses. Alcoholism, it is claimed, has also been treated with good results.

The cures depend upon "suggestion," which has been ably explained in Mrs. Charlotte A. Aikens' paper in the Michigan Farmer. In many cases the patient is first placed in an hypnotic condition and while in this state suggestions are addressed to him which tend to change his state of mind. He is told the truth regarding his condition and instructed as to his procedure in future. The talk is usually positive, and the patient is told that his trouble is already diminishing. In many cases the patient receives immediate benefit, while others take frequent and many treatments, say the leaders.

The cure depends upon the action of the subconscious mind over the body.



The Parkhill Zephyrs Come in Plaids.

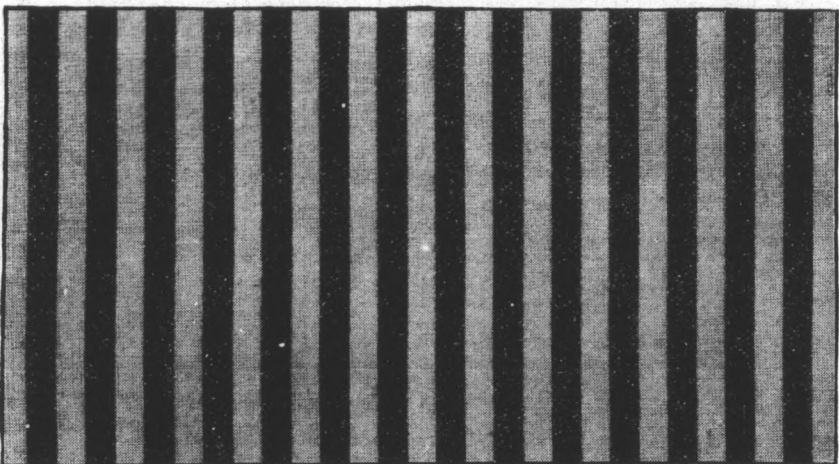
As this is a rather dark subject to those of us who have concerned ourselves only with the conscious mind, or that part of the mind whose actions we can actually perceive, another paper will be devoted to the subconscious mind.

DEBORAH.

What's What In Summer Cottons.

"Man works from sun to sun,
But woman's work is never done,"
Runs the old couplet. We are used to the idea that man's work doesn't drag along like woman's, but it was something of a surprise to me to learn that one class of men are so forehanded that their work is all done a year in advance! The cloth manufacturers are such thrifty, hustling people that not only are next summer's cotton goods all manufactured and disposed of to the wholesalers, but next year's woolsens are already being shown by their advance men. Verily great is American enterprise.

It is not with next winter's woolsens we



Showing the Pronounced Tendency to Stripes.

are concerned, however, but with this season's cottons. For, altho some weeks yet must elapse before we can don our pretty wash dresses, the wise woman is already planning her summer's sewing. So skilled in the art of imitating have the cotton weavers become, that many of the fine cottons so closely resemble silk that one has to look twice before she can tell

if some of the new things are the real silk or imitation cotton. The illustration shows a good example of one of these imitation silks.

Every season sees new names rung on the woman who goes to buy a dress, tho the fabric may be the same old weave. This year's new cloth is "Flaxon," which is nothing more or less than a linen-finish organdie. Of course, it is very sheer and dainty as all organdies are, and comes in all sorts of pretty colors, white striped with delicate pinks, blues, etc., being a favorite design. And, by the way, more stripes seem to be shown than anything else. There are checks and plaids, but of all the goods shown me in a big wholesale house, there was not a single piece with a floral design. This will be sad news for the girls who like summer dresses covered with posies.

We have been accustomed to thinking of handkerchief linen as a fine white cloth meant to be embroidered and made into pretty shirtwaists. Now handkerchief linen comes in colors, if you please, in blues, tans and even black. It is sheer like the white and may be either in a solid color or in stripes and checks.

Poplin promises to have a run this season, and it is appearing in many varieties and under many names. There is "Melba" poplin, named after the great singer. This is a heavy piece of goods, not at all in texture like the two above described, but rather like the once popular vesting. It has a satin finish, and comes in plain colors striped in self color. Blue is popular, and there is old rose, tan and the usual list of shades. Then there is "satin" poplin, which has a shiny metallic stripe. The woman who likes a black dress would do well to buy a piece of this satin poplin

in black, which, with its metallic stripe, looks very much like silk. Brocade stripe poplin is just what its name implies, a poplin with a brocade stripe. It is very pretty in old rose and navy blue, and is also shown in white. Silk striped poplin is, however, one of the prettiest of all. It comes in all colors, with a silk stripe giving it a pretty finish. The colors are delicate shades, pinks, blues, greens, etc., making this an ideal cloth for a dainty summer dress. The Lorraine poplins are in solid colors, white, pink, blue, Nile green, old rose and black. Victoria silver stripe and Francesca silver stripe are alike in everything but color, the Victoria cloth running in light colors while the Francesca comes in dark. These are sheer fabrics with a silver stripe alternating with a stripe of some color. In the Victoria cloth a pretty piece had a white ground, striped with red alternating with the silver stripe which distinguishes the cloth.

If you wanted a rough silk dress last summer and did not get it, try a Bokhara cloth this season. This is a cotton goods

A Good Change A Change of Food Works Wonders.

The wrong food and drink causes a lot of trouble in this world. To change the food is the first duty of every person that is ill, particularly from stomach and nervous troubles. As an illustration: A lady in Mo. has, with her husband, been brought around to health again by leaving off coffee and some articles of food that did not agree with them. They began using Postum and Grape-Nuts food. She says:

"For a number of years I suffered with stomach and bowel trouble which kept getting worse until I was very ill most of the time. About four years ago I left off coffee and began taking Postum. My stomach and bowels improved right along, but I was so reduced in flesh and so nervous that the least thing would overcome me.

"Then I changed my food and began using Grape-Nuts in addition to Postum. I lived on these two principally for about four months. Day by day I gained in flesh and strength until now the nervous trouble has entirely disappeared and I feel that I owe my life and health to Postum and Grape-Nuts.

"Husband is 73 years old and he was troubled, for a long time, with occasional cramps, and slept badly. Finally I prevailed upon him to leave off coffee and take Postum. He had stood out for a long time, but after he tried Postum for a few days he found that he could sleep and that his cramps disappeared. He was satisfied and has never gone back to coffee.

"I have a brother in California who has been using Postum for several years; his whole family use it also because they have had such good results from it."

Look in pkgs. for the little book, "The Road to Wellville." "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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This great catalog is handsomely illustrated, a considerable portion of goods being reproduced in colors. It contains everything to furnish and beautify the home—quotes factory prices on furniture, carpets, rugs, curtains, draperies, pianos, crockery, sewing machines, clocks, silverware, stoves, ranges, pictures, mirrors, lamps, go-carts, refrigerators and washing machines. Write for this big catalog at once—today.

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USE **MENDETS** PATENT PATCH

They mend all leaks in all utensils—tin, brass, copper, graniteware, hot water bags, etc. No solder, cement or rivet. Any one can use them; fit any surface; two million in use. Send for sample pkg. 10c. Complete pkg. assorted sizes, 25c postpaid. Agents wanted. Collette Mfg. Co., Box 176, Amsterdam, N. Y.

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SHADE ROLLERS**

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Malted from choicest Montana Barley, shipped in strong air-tight drums, at **6c per lb.**

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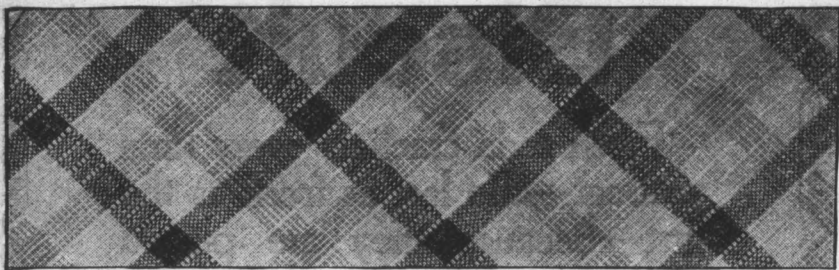
THE "BEST" LIGHT

Makes and burns its own gas. Costs 2c. per week. Gives 500 candle power light and casts no shadow. No dirt, grease, nor odor. Unequalled for Homes, Stores, Hotels, Churches, Public Halls, etc. Over 200 styles. Every lamp warranted. Agents wanted. Write for catalog.

THE BEST LIGHT CO.
280 E. 5th St., Canton, O.

soisette. This has been worn for several seasons, but has grown in grace rather than in disfavor. It comes in solid colors in all the shades. The basket linens are good in white, all the shades of blue, pink and green, and in the natural color of linen. Shrunken cotton under its various names, shrunken cotton, Indianhead and shamrock is seen in all colors. The three names mean the same cloth, but the shamrock is finished a little better than the others. Ducking will still be chosen by many women for tub suits.

Two other pieces of goods, must be mentioned before the domestic gingham. These are Parkhill zephyrs and braided novelties in zephyrs. The former come in plaids and stripes, in all the usual colors of fine zephyrs and gingham. The latter are striped with a lace-like stripe which reminds one of fine drawnwork, the cloth not being cut out under the stripe. Of course these are in all colors. In domestic goods we find small checks, fine stripes and fancy plaids. You see them every summer, and you will always see them because women have found out the value of gingham. Just to show the popularity of percale, more has been sold this year than in any two years previous since it was first manufactured. It is



Every Summer Sees the Standard Gingham.

popular because it is not expensive and is a good cloth.

The imported goods first described run in prices from 25 cents to 50 cents the yard. The domestic goods retail at a shilling. There will probably be no advance this year as the prices are made for the entire season and the manufacturers are already sold out.

SHORT CUTS TO HOUSEKEEPING.

This department is opened as a means for the exchange of new and successful ideas in housekeeping. Every housekeeper is anxious to learn the quickest and best way of doing her work, and is constantly looking for new ideas. If you have what you consider a good idea send it on for the benefit of your sisters. They will do the same by you. Please do not send recipes. Every housekeeper now has more than she can use. But if you think you have the quickest and best way of washing, ironing, sweeping, dusting or doing anything else about the house, please write and tell us about it.

A baked dinner is a time saver. Have a good roast, baked potatoes, baked squash, and a baked dessert, mince pie you can warm, bread or rice pudding, or anything that needs oven heat. There are fewer dishes afterwards.—Mrs. S., Okemos.

I find it saves time to plan my work the night before. I sit down after the supper dishes are washed and make a list of everything that must be done, and then add things I should like to do but which could go over. Then I hurry the "musts" out of the way, and try to do as many of the other tasks as possible. This saves me time because I need not think what I had better do next.—Mary B., Flint.

When I married, all the relatives on "his side" said I would never make a good housekeeper. I dirtied so many dishes in baking and in getting a meal. This put me on my mettle and I started in to do better. In baking now I use only one mixing dish, one measuring cup and one spoon of each size. I make white cookies first, of course, measuring dry ingredients first, then white cake, then dark cookies and then dark cake, and in this way I do not need to wash the mixing bowl. After the cup has been wet for the white cookies, I wash it and dry and use it again for the next cake, and so on. I have running water in the house, so this is easy to do, but if I hadn't, I should keep a pan of hot water on the stove. It only takes a second to wash cup and spoons as I work, and I haven't a big pile of dishes to wash at the close of baking.—Mrs. L. A. M., Birmingham.

THE USEFUL OUTING FLANNEL.

BY E. E. R.

Possessing, as it does the comfort of wool at a fraction of the expense, outing flannel has proven to be a fabric of more than ordinary value. An outgrowth of the old-fashioned canton flannel, it is superior by far to that material, yet costs even less. In sleeping rooms not evenly warmed the outing sheets which come in attractive styles are a real comfort. They are soft and warm to the touch, while so light in weight that laundering is an easy matter. These vary in price from 50 cents to one dollar or more per pair, according to quality. By using care in washing not to have the water very hot the colors do not fade. These sheets or blankets are especially recommended for the use of old people and children.

Mothers appreciate this soft, fluffy fabric in making underwear for little folks. It is extensively used for diapers, in plain white, while nighties and slips made of it are very comfortable. For petticoats it has almost entirely taken the place of wool. The pretty patterns in such a pleasing variety of colors offer an opportunity for selection to suit any taste.

The more expensive outing blankets are

employed for making bath robes, using the bordered portion down the fronts and for collar and cuffs. Finishing with heavy cord and tassels in the prevailing color completes the robe, which is extremely good to look at as well as comfortable to wear. These robes may also be worn as a kimono or wrapper. Nothing more convenient could be imagined for an invalid or convalescent to wear when able to sit up, than one of these garments.

A word of warning should be uttered however, to those who wear this cloth in outer garments. It is highly inflammable and positively dangerous when worn where there is proximity to a blaze or open fire. The nap of the goods catches like tinder and fire runs over it in an instant. Such an accident nearly cost a life in one instance, where the wearer was carrying a lighted candle from one room to another. Women who wear house jackets of this material should bear this fact in mind. The long loose sleeves are particularly apt to be dangerous when working in such a garment about the kitchen.

VARIOUS USES FOR SALT.

BY PANSY VIOLA VINDER.

Salt is one of the simplest of all household remedies, and one that we always have on hand, yet many do not know how effective it can be made in many instances. It is an excellent remedy to allay all neuralgic pains in the head. Make a small bag out of flannel and fill with salt and then heat thoroughly and apply to the afflicted parts as hot as can be borne. Hot salt in a bag is fine to relieve all inflammation in different parts of the body, and also good in cases of sore throat. Flannel cloths wrung out of salt, vinegar and hot water is an excellent remedy to apply to chest, stomach or bowels in cases of inflammation or congestion. Renew the cloths as fast as they begin to get a little cool. Salt placed on the gums when teeth have been extracted will keep them from bleeding too profusely. A little salt and alum combined, put in cotton and inserted in an aching tooth will often remove the pain when nothing else will. Simple salt and water or salt and vinegar makes an excellent gargle for the throat. Vinegar, salt and water makes an excellent wash for the eyes. Salt in water that is tepid is a good emetic, and is also a good dentifrice, keeping the teeth white and the gums hardened. There are many kinds of poultices, some good and some not, but the old-fashioned flaxseed is one of the best to relieve congestions, and is good for tonsillitis. To make it have water boiling and stir in ground flaxseed meal until it is thick; add a teaspoonful of olive oil, and spread on a piece of muslin twice as large as needed, apply as hot as can be borne.

ENTERPRISE

Meat and Food Chopper

The only true Meat Chopper—the only chopper that has razor-edge, four-bladed steel knife and perforated steel plate that actually cuts meat, fish, vegetables, fruits, bread, etc. without crushing or mangling.

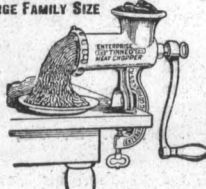
The "ENTERPRISE" is the strongest chopper made—has the fewest parts—is the simplest in construction. Easily cleaned. Cannot rust.

For Sale at Hardware and General Stores Everywhere.

No. 5, Small Family Size Chopper, \$1.75. No. 10 Large Family Size Chopper, Price, \$2.50.

"ENTERPRISE" Meat and Food Choppers are made in 45 sizes and styles for Hand, Steam and Electric Power. We also make cheaper Food Choppers but recommend the above. Illustrated catalogue FREE.

No. 10
PRICE \$2.50
LARGE FAMILY SIZE



Sausage Stuffer and Lard Press

The quickest way, the easiest way, the cheapest way to make the best sausage and lard is to use the "ENTERPRISE" Sausage Stuffer and Lard Press—two machines in one. It is an absolute necessity at butchering time.

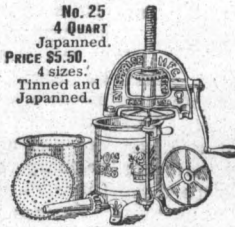
It is strongly made and every part does its work without a hitch. Plate fits perfectly and cylinder is bored absolutely true. Pressure will not cause meat to rise above plate. The patent corrugated spout prevents air entering the casing, thus assuring perfect filling and preservation of sausage.

Can be changed into a Lard or Fruit press in a jiffy.

Sold by Hardware Dealers and General Stores everywhere.

Write for catalogue.

No. 25
4 QUART
Japanned.
PRICE \$5.50.
4 sizes.
Tinned and
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Bone, Shell and Corn Mill

A necessity to farmers, poultrymen and all who keep poultry. A splendid general, all-round mill. Grinds poultry feed and makes bone meal fertilizer.

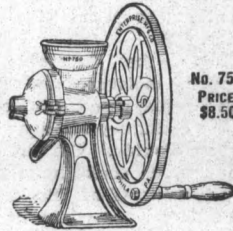
Grinds dry bones, oyster and other shells, corn, etc. Pays for itself in a short time. Size shown in illustration (No. 750, Price \$8.50, weight 60 lbs.) grinds 1 1/4 bushels corn per hour.

Look for the name "ENTERPRISE" on the machine you buy.

We also make other household specialties—all bearing the famous name "ENTERPRISE"—Coffee Mills, Raisin Seeders, Food Choppers, Fruit, Wine and Jelly Presses, Cherry Stoners, Cold Handle Sad Irons, etc., etc.

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—is stamped on the sole of every shoe made by these well known makers of shoes for Mother, Father and the Children. Look for it—if you want shoes that are correct in style, that fit better, look better and wear better than any shoe you have ever worn—shoes that are conscientiously made by expert workman of selected leather—all leather throughout, no substitutes—soles genuine oak tanned—insist on your dealer supplying Wells Shoes.

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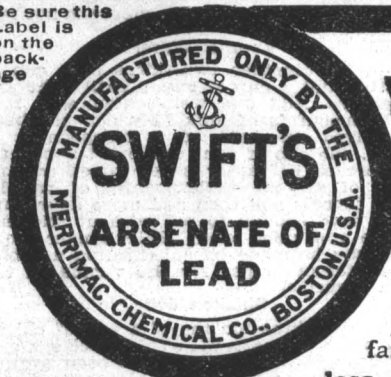
Free We have laid aside a very interesting booklet for every reader of this paper, entitled "Mother, Father and the Children." Yours is waiting for you—send for it today.

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Losses of fruit and vegetables through leaf-eating insects are enormous, and unnecessary. Thousands of farmers have cut down that loss ninety percent by spraying

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Swift's kills all leaf-eating pests, is washed off the leaves only by heaviest rains, cannot scorch or burn foliage, mixes readily with water and stays in suspension, and does not clog the pump. It increases both quality and quantity of yield.

Send for valuable book on leaf-eating insects. Give your dealer's name.

Merrimac Chemical Co., 23 Broad Street, Boston, Mass.

BREAD MAKING.
No. 5.

THERE may be some few people in the world who do not like bread, but the average person will tell you he can make a meal from good bread and butter and be quite content. Bread is the oldest of made foods, and the loaf of antiquity was little like the baker's white loaf of the twentieth century, it was still bread. The making of good bread is one of the most important of arts, and like every other important art it is one of the hardest to master. Many women never master it, no matter how painstaking they may be.

The essentials are a good bread flour and good fresh yeast. Spring wheat flour is held by many cooks to be the best for bread, while others prefer a mixture of two parts spring wheat to one part winter wheat. To determine if your yeast cake is fresh break it. If it breaks clean and crumbly and is light-colored and free from dark spots it is fresh. It is old when it is sticky and has a bad odor.

Yeast is a microscopic plant of fungus origin and is the lowest form of vegetable life. It lives at a temperature two degrees below freezing and is killed at a temperature of 212 degrees, the boiling point of water. It grows best at from 67 to 72 degrees and in making bread the sponge and dough should be kept at about this heat. Moisture and sweetness are necessary to its growth and that is why we start our yeast with sugar and warm water.

Under the favorable conditions of warmth, moisture and sweetness, yeast grows rapidly and produces fermentation, or the changing of sugar into alcohol and carbon dioxide. Carbon dioxide is a gas about which cooks hear a great deal, and it is the efforts of this gas to escape from the sticky mass which causes the bubbles on the yeast so that we know it is light.

Most cooks now days use compressed yeast for baking instead of the old-fashioned hop yeast. The usual procedure is to mash fine three or four medium-sized potatoes at noon, and for yeast old potatoes are better than new because they contain more sugar, which is essential to the growth of yeast. Then the water in which the potatoes were boiled is added with enough more to make two quarts, two level tablespoonfuls each of sugar, salt and flour, and, when the mixture is lukewarm, one compressed yeast cake which has been dissolved in warm water.

This is allowed to stand until night and then flour kneaded into it to make a stiff dough. It should be kept in a warm place, but not near a stovepipe as it gets too warm on one side. In the morning it should have doubled its bulk. When it has risen to twice the original size, knead and form into loaves and let stand until the loaves have doubled their bulk. Then brush the loaves with milk or water to get a rich crust and bake. If flour will brown in the oven in five minutes it is at the right temperature. Quick baking gives a white loaf, slow baking a yellow loaf. If your bread is full of large holes it shows you let it rise too long before putting in the oven. If it is soggy it did not rise long enough. If there is a dark streak near the bottom of the loaf it stood in too hot a place to rise. If it gets too light before you put it in the oven, see that your oven is extra hot. A crust will form quickly and prevent further rising. Ordinarily bread should rise for the first 15 minutes of baking. The oven should be kept at an even temperature for the first half hour and then the heat should be decreased. To tell if bread is done, try handling it with your bare hands. Bread that is not done will burn your hands, while you can handle well-done bread without burning. Bread that is done will shrink from the sides of the pan.

We have seen that yeast starts fermentation, or the changing of sugar into alcohol and carbon dioxide. If this fermentation continues too long another kind sets in, the changing of alcohol into acetic acid, a substance akin to vinegar, and then the bread is sour. So we bake the bread to kill the yeast plant, which dies at 212 degrees, and thus we stop fermentation. Baking also drives off the alcohol and the carbon dioxide endeavors to escape, thus puffing up the loaf. The starch in the flour is also made digestible by the baking and a sweet, nutritious, easily digested loaf of bread is the result, or should be.

If you make biscuit, have the oven hotter than for bread. They should only rise for five minutes after going into the oven.

HOME QUERIES EXCHANGE.

A number of recipes for oatmeal cookies were forwarded for Mrs. G. S., of South Branch. Only a few will be given.

In printing recipes in this department the following abbreviations will be used: "c." for cup; "tsp." for teaspoonful, and "tbsp." for tablespoonful. "Pt." of course, stands for pint and "qt." for quart. I must ask contributors to use only one side of the paper. Otherwise much time is taken up in this office copying communications before they can be set up.

Plain oatmeal cookies: One c. of brown sugar; 1 c. shortening (half lard and half butter); 2 eggs; 2 c. oatmeal; 2 or more c. flour; 1 tsp. cinnamon, baking powder and soda; 4 tbsp. sour milk. I often omit eggs when they are scarce, and double the quantity of sour milk. Another recipe for oatmeal cakes, while more expensive, is most delicious. The little ones call them oatmeal candies, and they are certainly more healthful and just as good or better. Nutless nut cakes: Beat 1 egg, $\frac{1}{2}$ c. of sugar, add $1\frac{1}{2}$ c. rolled oats, 1 tbsp. melted butter and 1 tsp. almond or vanilla extract. Drop by spoonfuls on buttered pans and bake a golden brown. Let cool on pans. Lemon drops: One lemon rind grated and the juice; $\frac{1}{4}$ lb. citron chopped; 4 eggs; 1 lb. sugar; 2 tsp. baking powder; 1 tsp. cinnamon and cloves, and flour to stiffen. Care should be taken not to get too stiff. I often use two eggs and add a few tbsp. of cold water instead and omit the citron. They are fine anyway, and are a change from ordinary cookies.—Mrs. C. B. M., Bay City.

Recipes were also furnished by Mrs. C. G., of Clio, and Mrs. G. G., of Gara, who also furnished the recipe for Nutless Nut Cakes. Thanks are due these ladies, but we will not use theirs at this time. Mrs. W. H. D., of Lowell, furnished a recipe for oatmeal hermits and one for Trilbys, which follow: Hermits: One c. raisins; 1 c. brown sugar; $\frac{3}{4}$ c. part lard and part butter, measured and then melted; 3 large tbsp. sweet milk; 1 t. soda in the milk; 2 c. flour; 2 c. rolled oats; 2 eggs; 1 tbsp. cinnamon; pinch salt. Put in dripper by the spoonful and pat down. This was very similar to one furnished by Mrs. C. G. Trilbys: One c. white sugar; 1 c. lard; $\frac{3}{4}$ c. buttermilk; 1 tsp. soda; $\frac{1}{2}$ tsp. salt; $2\frac{1}{2}$ c. flour; 2 c. rolled oats. Mix stiff, roll very thin. Make a filling of dates, sugar and water or raisins, spread on a Trilby and place another on top. These are delicious. I, for one, enjoy the "Woman and Her Needs" page. (I suppose the Trilbys are to be baked before putting together with the filling? —Ed.)

CONTRIBUTED RECIPES.

Cheese Croutons.

To one cup of grated cheese add one-fourth teaspoonful each of salt and mustard, a few grains of cayenne and one tablespoonful of butter, heat a little and mash till a smooth paste. Cut bread in strips three inches long and one wide, or cut into crescents. Butter slightly and toast till a delicate brown. Spread with the cheese mixture, replace in the oven and serve as soon as the cheese is hot and brown.

Vanilla Wafers.

Cream together two-thirds of a cup of butter and a cup of sugar until light and creamy. Add one well-beaten egg, four tablespoonfuls of milk in which has been dissolved one-half of a teaspoonful of soda, one cup of flour and one teaspoonful of cream of tartar sifted together, and last of all one tablespoonful of vanilla. Mix thoroly and then add more flour until you have enough to roll without sticking. Bake in a quick oven. Fairly ginger cookies may be made by substituting a tablespoonful of ginger for the vanilla in the above recipe.

Chicken Jelly.

Season three-fourths of a cup of chicken broth to taste with salt and celery salt and pepper. Cover one teaspoon granulated gelatine with one tablespoon of cold broth. Heat the remainder of the broth to the boiling point; add the softened gelatine and stir until dissolved. Add a few drops of lemon juice. Strain thru double cheese cloth into a cold, wet mould or cup. Put in a cold place until solid. Serve cold. It may be garnished with parsley or celery tips. Beef tea or lamb broth may be used in the same manner.

Nut Sandwiches.

Mix equal parts of grated Swiss cheese and chopped English walnut meats. Season with salt and cayenne. Spread between thin slices of bread slightly buttered and cut in fancy shapes. A delicious sandwich is also made by cutting very thin slices from a round loaf of white or brown bread. Spread with a cooked salad dressing in which a little thick cream and a generous amount of finely cut cherries have been stirred.

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

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The farmer, he garners from the soil the primal wealth of nations.

OUR SOCIAL DUTIES—WHAT ARE THEY?

Paper read by Mrs. Emily Mosher, before the Hickory Farmers' Club.

I do not know just what the author of this subject had in mind but I have chosen to deal more especially with "Our Duties as Confined to the Farm."

Nature seems to demand some form of diversion in the old as well as the young. In the cities and towns there are a great many forms within the reach of all, which demand comparatively little effort, and yet a great deal of what "society" considers its duties is not only undesirable but altogether impractical for the farmer. At the same time there is a social side to the farm, and this important factor in our life demands honest consideration and the courage of conviction to make its influence felt for the good of the commonwealth. Many of the clearest minds and strongest constitutions in public were from the farm. We are proud and glad to thus serve our country, yet there remains our duty to the many who remain with us.

Often we find a home where the young people leave as soon as they are able to earn a bare livelihood and choose most any occupation rather than stay at home. In another home they are not only satisfied to stay, but their home is the center of attraction for the whole neighborhood. In the first there is something vitally wrong, in the other a condition worth careful study, and what is true of these homes is true of neighborhoods at large. Perhaps in the one home not even one good paper is allowed, or a batch of taffy is too dear a price for an evening's pleasure. A noisy game is not to be thought of, because it would disturb the slumbers of people who are satisfied to go to bed with the chickens. A glance at the other and we see parents, children and neighbors enjoying all sorts of games, a new book, music, and a discussion of the daily paper with perhaps a pan of popcorn sandwiched in. I am sure no one will deny the good influence of such a gathering, nor yet preclude a possibility for every home.

The home is the vital spot and the things that will tend to develop its social atmosphere are the things to be desired, such as good literature, music, cultivation of the different abilities of its inmates and time for recreation.

It is not necessary to separate the old and the young in this matter. In fact, the friendly interest, appreciation and encouragement of parents and elders are the greatest safeguards of the young. Who is to be more admired than the older person to whom the young people go, sure of sympathy and help, or who exerts a greater influence? None should be too old to be young at heart—to be comrades of the young.

In this day and age man's chief aim seems to be the accumulation of wealth, and the farmer spends the winter laying plans to be carried out in the summer for making his farm more profitable each year. But, to provide comfortable homes and an education for our children is not all. The home has not fulfilled its mission unless it purposes to become a center of influence. We can't accomplish much by simply opening our doors and telling our neighbors to come in. Custom demands the observance of certain rules, but there is such a thing as a wholesome independence. A friendly interest will do wonders. Women, as a rule, are more socially inclined than men, who dread to leave their own firesides to go visiting, especially in the evening. We, as women,

appreciate the compliment but beg of you a little unselfish consideration for others. It is not enough to wait until our neighbor lies sick upon his bed to call, or to enter another home for the first time to attend a farewell reception. Young people are not satisfied with such a condition, and how much better for parents to know more about the homes their children are bound to enter. The person who is musically inclined has many advantages, for they are always welcome. There are others who read well and a good story is their only introduction. Others can recite. For the men folks, there are numberless topics of common interest, from something new in farm methods to the new horse. The women can always find something to talk about, if it is only an exchange of recipes.

"Bread cast upon the waters is not in vain," and a friendly exchange of ideas and methods is sure to result in the good of all concerned. To surround our young people with clean, elevating pleasures, that they may have no desire, is worth every effort, and every plan that helps to improve the social conditions of the neighborhood should be met with hearty cooperation. Even one home may be an inspiration to a whole neighborhood.

In the winter season we have more leisure than at any other time of year, so let us plan to know our neighbors better; let us enlarge the circle of the influence of our own homes. Let us do all that we can to broaden and strengthen our own character, not for our own good but rather the good of every one with whom we come in contact.

It is the "little things" that take the drudgery out of life and we have only fulfilled our social duties when we

"Try to do all the good we can,
In all the ways we can
To all the people we can,
When, and wherever we can."

GRANGE

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

THE MARCH PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Ways in which home may be made more attractive.

Farm Business—III. Rural Law, (relating to real and personal property, deeds, tenants' rights, etc.)

Recitation (in costume), "Over the Hills to the Poorhouse."

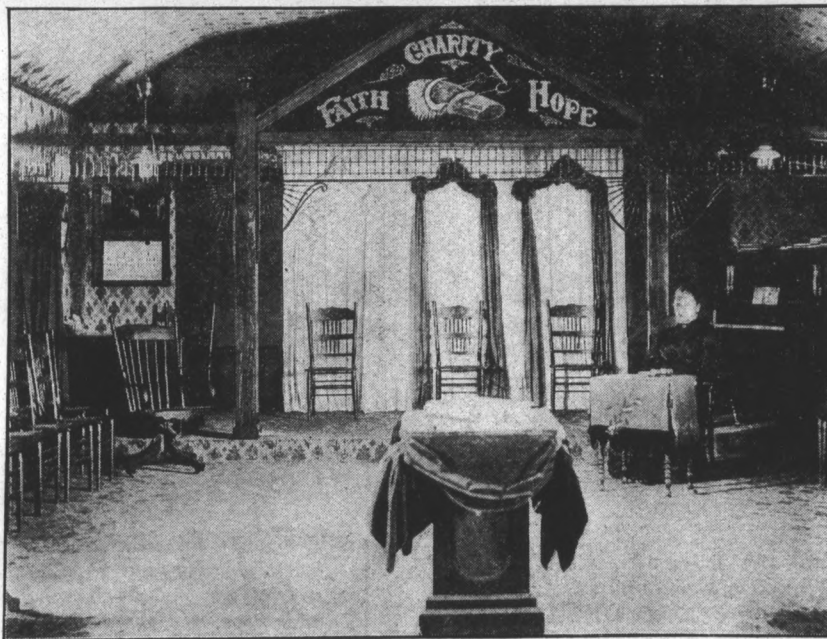
How does local option affect business? Facts collected and presented by two men and two women.

Recitation (in costume), "Over the Hills from the Poorhouse."

Music and recitations in charge of a committee of two young ladies and one young man.

THE GRANGE COURT.

The accompanying cut shows "the court" arrangements in the hall of Madison Grange, Lenawee county. The soft, harmonious colors of the draperies—gold,



Attractive "Court" of Madison Grange, one of Lenawee's Strong Subordinates. on subordinate Grange meetings during the year was 270,265. In 180 Granges some phase of town improvement had been considered, and 201 had devoted an evening to patriotic themes, and the children had been remembered in 194 Grange evenings all their own. State Lecturer Chas. M. Gardner was promoted to the position of State Master at this meeting. The lecturers' conference was attended by 242 lecturers and 299 candidates took the sixth degree. This year's State Grange will be held at Worcester.

result of the Woman's Work committee in that effort trying to make of the Grange hall a neighborhood home. Care had been taken to select tints in draperies that were soft and artistic; their hanging was graceful, and pains were also taken in other details. The resulting impression upon every person who enters the hall is one of attraction, which is really a matter more worthy of attention than seems to occur to many lady officers. The eye of the member or visitor upon entering, rests first upon the court, since the master's station is near to it. It is an opportunity to make "first impressions" count on the side of warmth of welcome and the good taste of the Grange.

There are other facts noticed in a visit to Madison Grange; for instance, the lady shown in the cut was master last year, when all of the officers were women. This is one of the largest, most capable Granges in the state and its members attribute much of their development and, as a Grange, its ability to carry out successfully various undertakings to the fact that for years no person has held the same office for two consecutive terms. By this system, which is made obligatory with them by by-laws, many persons are developed in efficiency, and leaders are in constant process of training. Members of this Grange presented the fourth degree before State Grange at Grand Rapids in a way that will never be forgotten by those who saw it. Their displays at the Adrian fair, their contribution to Pomona Grange success, and their regular routine work all rank high and make it advisable to investigate the methods that have contributed to such results.

JENNIE BUELL.

THE GRANGE IN OTHER STATES.

A Producers' and Consumers' Exchange has recently been formed by Patrons in the vicinity of Brunswick, Me., for the benefit of farmers in marketing crops and buying supplies. It was decided to fix the capital at \$10,000, divided into 10,000 shares at \$1 each. It was also voted that the stockholders or members of the company should be confined to members of the Patrons of Husbandry, excepting those who had already subscribed for stock or did so before Nov. 10 last. By-laws were adopted which fully protect the stockholders.

Many Fairs in Old Bay State.—At the last meeting of Massachusetts State Grange, held at Springfield, Mass., the lecturer reported that over 40 Granges had held fairs of their own, and 65 had assisted in agricultural fairs in their vicinity last season. The secretary reported the total number of Granges in the state at 282 and the total membership 26,782, a net gain of nearly 2,200. The state lecturer's statistics showed that during the twelve months ended Oct. 1, 1909, 1,954 discussions were held and participated in by 17,402 Patrons; 1,647 papers had been read and discussed by over 2,300 members; 1,386 speakers had addressed Granges on different topics; as entertainment features nearly 6,800 vocal and nearly 5,000 instrumental selections had been rendered and readings to the number of 6,117. The total attendance

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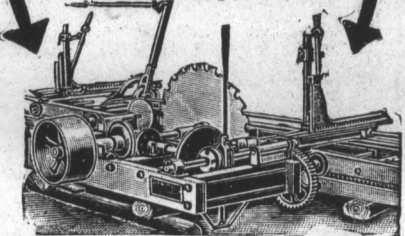
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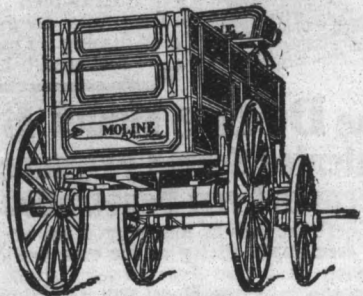
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KALAMAZOO CANCER INSTITUTE,
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(Continued from page 236).

powers with a proposition that the proposed road be moved much farther to the west than was originally planned, taking it thru Unga and Kiakhta to meet the Siberian road near the Baikal line. The proposal has not met with approval among the powers, and what disposition will be made is not at all clear.

The royal geographical society of Italy voted a medal to Commander Peary for his achievement in reaching the North Pole, and others to his companions for their valuable service in aiding the explorer.

Mrs. Roosevelt and daughter, Ethel, arrived in Naples, Sunday, after a stormy voyage, on their way to meet former Royal circles in Germany are much disturbed over the finding of a lower court that Duke Ernest Guenther is not of the royal lineage and that since the Empress is a sister of Ernest it naturally follows that she, too, is without the royal lineage and that her son is not the successor to the throne.

President Roosevelt at Khartoum, Egypt. Col. Roosevelt and his son, Kermit, with the other members of the party, are resting at Gondokoro, Soudan, after their fatiguing experiences in that section. The party is reported as being in the best of health.

William Jennings Bryan, who has been making a tour of South America, has just left Buenos Ayres for the United States by way of England.

The French government has ordered a cruiser to proceed to Guadeloupe immediately where there is reported much rioting. The cruiser carries 400 men.

The sugar crop of Cuba for 1909 is reported to be a big one, the largest in the history of the industry in the island.

Arrangements are being made in London, England, for a reception to Colonel Roosevelt when he arrives there from his trip to the wilds of Africa.

President Cabrera, of Guatemala, has issued an order which provides that the English language shall be taught in the public schools of that republic, the study to be made compulsory. The President and his advisory staff believe that the English language is the coming language of the commercial world, and for this reason desires his people to be conversant therewith.

Boulos Pacha Ghali, the Egyptian premier and minister of foreign affairs, was shot and seriously wounded by a student at Cairo, Egypt, recently. The crime was of a political nature, the student believing the official to be responsible for many acts that were oppressive to the nationalists, to which party the student belonged.

The political situation in England has apparently not been settled by the recent elections, as the majority of the government is uncertain and should it be that the new cabinet is supported by a minority, it is probable another election will follow the recent strenuous campaign.

National.

A New Jersey grand jury indicted 21 beef packers and six beef packing companies last week. The men and companies are located, for the most part, in Chicago and are charged with combining to control the price of meat.

Riots have forced the Bethlehem Steel Company, of Pennsylvania, to suspend business until the police can provide protection.

Molders of the Advance Thresher Company, of Battle Creek, went out on strike Feb. 25. Trouble arose over a foreman not reinstating men that had been dismissed.

Associate Justice Moody of the United States Supreme Court is seriously ill at his home at Haverhill, Mass. For some time he was showing signs of improvement but during the past few days a change for the worse has increased the concern of his physicians and friends.

Arthur Spear, who was imprisoned for making false entries in bank books while cashier of the Citizens' National Bank, of Oberlin, O., in connection with the Cassie Chadwick case, was pardoned by President Taft from serving the remainder of his term.

The federal grand jury in session at Chicago investigating the beef trust situation expects to complete its work this week.

The flood situation in Ohio is the worst in the history of that state. Hundreds have been rendered homeless and scores of manufacturing plants are closed because of high water. The melting snow and rains are responsible for the condition. Towns and villages and even whole counties are reported under water.

The strike situation in Philadelphia has become very serious during the past week. The street car men who are demanding higher wages for their services are successfully keeping the cars from operating by derailing and destroying those sent out by the company. Now that it has become evident to other labor organizations that the strike is not a bluff, sympathy is being extended, and trouble is likely to expand to every large industry of the city should the operators of the street car line hold out in their stand. That the strike may extend to outside places, tho to date no definite move in that direction is reported, is very probable unless the operators grant the demands made by the men.

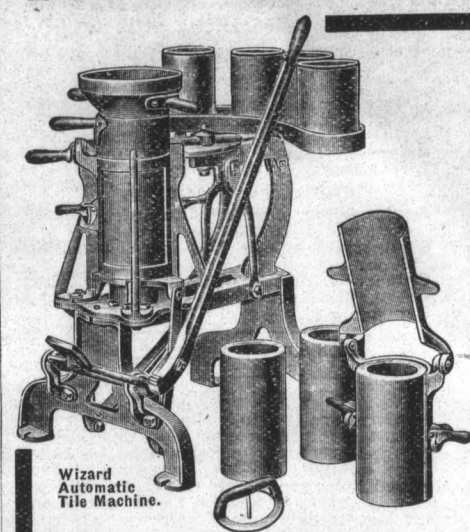
Twenty-four persons are known to be dead as a result of snowslides in the mining district of Northern Idaho. The town of Mace is said to be nearly wiped out. Burke, another place also suffered much damage. One train was caught and carried down into a canyon by an avalanche which filled the gorge to a depth of 45 feet.

The United States senate will vote on the bill authorizing the establishment of a postal savings bank this week.

The senate committee on high cost of living has definitely decided to call the packers and storage men to appear before the committee.

The house committee having under advisement the bill introduced by Representative Loud, of Michigan, providing for the raising of the battleship Maine has agreed upon a favorable report of the measure.

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Wizard Automatic Tile Machine.

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two of these Wizard Tile Machines operated by five men have turned out as many concrete tile in one day as the big \$1,000 machines which require an engine and seven men to operate. A day's output of the Wizard Tile Machine is from 900 to 1,200 perfect tile 10 inches long with 4-inch opening and 5/8-inch wall, and selling readily for 7 cents each. \$63.00 to \$84.00 is the value of your day's product, and the profit above cost of material and labor is about \$35.00 a day.



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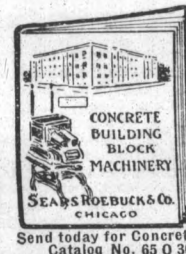
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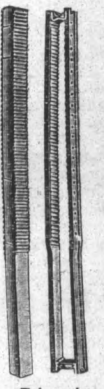
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Sears, Roebuck and Co., Chicago

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We Can Guarantee to Protect You

from lightning. We have the proof, clearly demonstrating that D. & S. Lightning System will not only protect, but you can secure fire insurance at a saving of one-fourth to one-half present rates.

D. & S. System is Not Expensive

They are put up by our men trained and experienced in the work—not by men who are the lightning rod agent kind. Geta D. & S. System which lasts forever, costs you hardly any more than inferior you can be safe from loss.

and split lightning rods. Write us to-day for the proof. All we ask is a fair, open, unbiased judgment. Don't prejudge us.

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Twin Auto-Seat, Auto-Top and Full Brass Mounted

PRICE \$59⁵⁰

MARKETS

DETROIT WHOLESALE MARKETS.

March 2, 1910.

Grains and Seeds.

Wheat.—A review of the quotations for the past two weeks shows cash grain to be easier with a tendency downward due to millers being fairly well supplied with wheat to carry them thru till the new crop is offered, and to the heavy receipts and a general advance in futures where damage to the growing crop appears to be sustained by information from numerous sources from the southwest, thus widening the margin between cash goods and futures. The reports from the winter wheat sections where ice is general over the plants, all carry a discouraging tone, and farmers are fearful that much of the crop is gone beyond hope of recovery. Liverpool was bullish on Tuesday. One year ago the price for No. 2 red wheat was \$1.25 per bu. Quotations for the week are:

	No. 2	No. 1	May	July
Thursday	1.24½	1.24½	1.24½	1.08
Friday	1.24½	1.24½	1.24½	1.09
Saturday	1.24	1.24	1.24½	1.09½
Monday	1.24	1.24	1.25½	1.11
Tuesday	1.23½	1.23½	1.24½	1.10½
Wednesday	1.23	1.23	1.23½	1.09½

Corn.—The corn market is weaker. Occasionally when it is feared that bad roads will prevent farmers delivering to primary points, the values are advanced but the general trend of the deal is downward. The local trade is dull, there being a very slow demand. Receipts are fairly large. One year ago the price for No. 3 corn was 67½¢ per bu. Quotations are as follows:

	No. 3	Yellow
Thursday	63½	64½
Friday	63½	64½
Saturday	63½	64½
Monday	63	64
Tuesday	63	64
Wednesday	63	64

Oats.—With wheat and corn, oats have declined. The market is ruling easy with a less active demand. The price fluctuations are usually of much narrower margin than for the other grains. The visible supply shows a very small increase. One year ago the price for No. 3 white oats was 55½¢ per bu. Quotations for the past week are:

	Standard	No. 3
Thursday	48¾	48¾
Friday	48¾	48¾
Saturday	48¾	48¾
Monday	48¾	48¾
Tuesday	48¾	48¾
Wednesday	48¾	48¾

Beans.—Prices here are nominally unchanged except that a decline of 3¢ was agreed upon for March delivery. There have been no deals reported here for a long time. Nominal quotations are as follows:

	Cash	March
Thursday	\$2.15	\$2.20
Friday	2.15	2.20
Saturday	2.15	2.20
Monday	2.15	2.17
Tuesday	2.15	2.17
Wednesday	2.15	2.17

Cloverseed.—Better prices marked the opening of the cloverseed market Monday and at present there is a tendency upward. Demand is fair, and sales are in fair number. Market active. Quotations are as follows:

	Prime Spot	Mar.	Alsike
Thursday	\$8.00	\$8.00	\$7.50
Friday	8.05	8.05	7.50
Saturday	8.10	8.10	7.50
Monday	8.20	8.20	7.50
Tuesday	8.30	8.30	7.50
Wednesday	8.15	8.15	7.50

Rye.—Market quiet, demand moderate. No. 1 is quoted at 83½¢ per bu., which is a decline of ¼¢.

Visible Supply of Grain.

	This week	Last week
Wheat	25,516,000	27,827,000
Corn	13,481,000	12,294,000
Oats	8,740,000	8,689,000
Rye	771,000	737,000
Barley	2,873,000	3,000,000

Flour, Feed, Provisions, Etc.

Flour.—Demand is slower at unchanged prices. Quotations are as follows:

Clear	\$6.00
Straight	6.05
Patent Michigan	6.25
Ordinary Patent	6.15

Hay and Straw.—Prices unchanged. Quotations are: No. 1 timothy, new, \$17.50@18; No. 2 timothy, \$16.50@17; clover, mixed, \$16.50@17; rye straw, \$8.50; wheat and oat straw, \$7 per ton.

Feed.—Market steady with last week's range of values. Carlot prices on track: Bran, \$28 per ton; coarse middlings, \$26; fine middlings, \$30; cracked corn, \$28; coarse corn meal, \$28; corn and oat chop, \$25 per ton.

Potatoes.—There is no hopeful news for those having tubers to sell. Demand is fair and supply ample. Market weak and dull. Michigan grown are selling in car lots at 30@32¢ per bu.

Provisions.—Family pork, \$26@27; mess pork, \$25.50; medium clear, \$26.50@27.50; pure lard, 14½¢; bacon, 17½¢; shoulders, 12¢; smoked hams, 16½¢@17¢; picnic hams, 12½¢.

Hides.—No. 1 cured, 10¢; No. 2 cured, 9¢; No. 1 bulls, 8¢; No. 1 green calf, 14¢; No. 2 green calf, 13¢; No. 1 cured calf, 15¢; No. 2 cured calf, 14¢; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, as to wool, 50¢@2.

Dairy and Poultry Products.

Butter.—There was an improvement in the butter deal the past week and creamery values are advanced. Dairy is steady. Quotations are: Extra creamery, 31¢; first do., 30¢; dairy, 22¢; packing stock, 20¢ per lb.

Eggs.—Continued heavy receipts is the

characteristic feature of the egg deal, and lower prices prevail as a result. The decline amounted to 2½¢ during the past week. Current offerings, cases included, are quoted at 21½¢ per dozen.

Poultry.—There is no heavy dealing in poultry because of the light stocks. Prices are altered with chickens a fraction lower and other kinds steady or higher. Quotations are as follows: Live—Spring chickens, 16½¢; hens, 16½¢; geese, 14¢; turkeys, 18¢@19¢. Dressed—Chickens, 17¢@18¢; hens, 17¢@18¢; ducks, 18¢@20¢; geese, 15¢@18¢; turkeys, 20¢@23¢.

Cheese.—Prices are about steady with those of last week. Michigan fall made 15¢@17¢; York state, 19¢; limburger, 18¢.

Calves.—Higher. Choice to fancy, 12¢@12½¢; ordinary, 11½¢@12¢ per lb.

Fruits and Vegetables.

Apples.—Spy, \$3@3.50; Baldwin, \$2.50@3; common, \$1.50@2.50 per bbl.

Cranberries.—Cape Cod berries selling at \$2 per bu.

Onions.—Domestic, 70¢@75¢ per bu; Spanish, \$1.25 per crate.

Cabbage.—\$1.75@2 per bbl.

OTHER MARKETS.

Grand Rapids.

Dealers are paying the country merchants 22¢ for fresh eggs this week. Both dairy and creamery butter are up 1¢, dairy being quoted at 25¢, creamery 30¢. Dressed hogs are worth 11½¢@12¢. Chickens and fowl up nearly 1¢ as compared with last week's prices. Prices to farmers are as follows: Turkeys, 18¢@20¢; chickens, 16¢@17¢; hens, 15¢@16¢; ducks, 16¢@17¢; broilers, 14¢@15¢ each, 30¢ per lb. Growers of vegetables under glass are getting the following prices: Lettuce, 10¢ per lb; radishes, 20¢ per doz; pieplant, 8¢ per lb. Grain prices are as follows: Wheat, \$1.19; corn, 64¢; oats, 48¢. The bean market is dull, dealers paying farmers \$1.90 for white pea, and \$2.60 for red kidneys.

Chicago.

Wheat.—No. 2 red, \$1.23@1.25; May, \$1.15; July, \$1.07½.

Corn.—No. 3, 62½¢@63¢; May, 65½¢; July, 67½¢ per bu.

Oats.—No. 3 white, 46½¢@47½¢; May, 47½¢; July, 44½¢.

Butter.—Creamery prices got back to the 30¢ level before last week's close and a strong effort is being made to maintain that range of values this week. Despite the fact that trading is not active, best creameries advanced 1¢ on Tuesday. Creameries, 26¢@31¢; dairies, 21¢@25¢.

Eggs.—Increasing receipts and rather indifferent demand have brot further reductions in prices. Prime firsts, 23½¢; firsts, 22½¢; at mark, cases included, 21½¢ per doz.

Hay and Straw.—Hay strong at former values; straw materially lower. Quotations: Timothy, choice, \$18.50@19; No. 1, \$17@18; No. 2 and No. 1 mixed, \$16@17; No. 3 and No. 2 mixed, \$12@13.50; rye straw, \$8.50@9.50; oat straw, \$7.50@8; wheat straw, \$7@7.50.

Potatoes.—Top grades are quoted at 2¢ lower, while medium lots are a trifle stronger. Choice to fancy quoted at 38¢@40¢ per bu; fair to good, 33¢@37¢.

Beans.—Kidney beans are again higher; others 1¢ lower. Choice hand-picked, \$2.22 per bu; fair to good, \$2.17; red kidneys, \$2.80@3.10.

New York.

Butter.—Creamery goods higher and market firmer. Western factory firsts, 22¢@23¢; creamery specials, 33¢.

Eggs.—The decline put a wide margin between the prices of this week and last. Arrival of fresh goods is the cause of the lower values. Western firsts 24½¢@25¢; seconds, 23½¢@24¢; fancy refrigerator stock, 21¢@23¢ per doz.

Poultry.—Dressed, quiet. Western chickens, broilers, 16¢@17¢; fowls, 14¢@18½¢; turkeys, 18¢@25¢.

Elgin.

Butter.—Market firm at 31¢ per lb., which is 1¢ above the quotation of a week ago. The sales for the week amounted to 433,600 lbs., compared with 439,400 for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

February 28, 1910.

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 150 loads; hogs, 9,600; sheep and lambs, 16,000; calves, 1,400.

The general cattle market today was from 10¢@15¢ higher than last week. All kinds of good handy butcher stuff sold at this advance. One fancy load of cattle sold at \$7.25. The coarse rough cattle didn't sell much higher than last week. Shippers should be careful in judging the quality, as it is the quality that makes the difference in price. Lots of cattle weighing less than 1,200 lbs. sold better than those weighing more. We look for the trade to improve from now on. Fresh cows and springers sold good at strong last week's prices.

We quote: Best export steers, \$6.75@7; best 1,200 to 1,300-lb. shipping steers, \$6.50@6.75; best 1,100 to 1,200-lb. do., \$6@6.25; medium 1,050 to 1,100-lb. butcher steers, \$5.50@5.80; light butcher steers, \$5.25@5.60; best fat cows, \$5.25@5.75; fair to good do., \$4.60@4.75; trimmers, \$2.75@3; best fat heifers, \$5.50@6; fair to good do., \$5@5.25; common do., \$4.50@4.75; best feeding steers, 950 to 1,000 lbs., \$4.75@5; do., 800 to 900 lbs., \$4.60@4.75; 700 to 750-lb. dehorned stockers, \$4.25@4.50; 60 to 650-lb. do., \$4@4.25; little common stockers, \$3.50@3.75; best bulls, \$5.50@5.75; bologna bulls, \$4.50@5; stock bulls, \$4@4.25; best fresh cows and springers, \$5.50@6.50; fair to good do., \$4.50@5; common do., \$2.50@4.

The hog market today opened strong to 5¢ higher than Saturday's close and closed 5¢@10¢ higher than the opening.

Favorable reports from Chicago caused a strong feeling here.

We quote: Mixed, medium and heavy, \$9.95@10.05; best yorkers, \$9.90@10; light yorkers and pigs, \$9.75@9.85; roughs, \$9.25@9.35; stags, \$7.75@8.

The lamb market this morning opened slow with most of the best native lambs selling at \$9.40 and westerns from \$9.30@9.35. Market closed firm with the tops selling at \$9.40. Should the receipts be moderate the balance of the week we anticipate some improvement but if liberal we can't expect any higher prices.

We quote: Best lambs, \$9.35@9.40; fair to good, \$9@9.30; culls, \$8@8.50; skin culls, \$6@7; yearlings, \$8@8.60; wethers, \$7@7.65; ewes, \$6.25@7; cull sheep, \$3.50@5.50; best calves, \$10@10.50; fair to good do., \$9@9.75; cull to common, \$7.50@8.50; heavy, \$4@5.50.

Chicago.

February 28, 1910.

Received today 22,000 33,000 17,000
Same day last year..24,547 63,503 21,214
Received last week ..56,850 116,929 51,134
Same week last year..45,575 149,721 71,396

A new week opened this morning on a wildly excited hog market, with a lively general demand and buyers bidding 10¢@15¢ higher. Prime hogs were purchased by a speculator as high as \$9.92½, and there were rumors that \$9.95, and even \$10, had been paid. The previous high price was \$9.77½ paid last Saturday afternoon, and Monday a week ago the top was \$9.50. The range today was \$9.40@9.82½ for light packing and selected shipping hogs weighing 140 to 195 lbs.; \$9.47½@9.87½ for heavy packing and selected shipping averaging 255 to 325 lbs.; \$9.40@9.85 for mixed packing, mediums and butchers weighing 195 to 255 lbs.; \$9.85@10.35 for stags; \$6@6.25 for boars and \$8.75@9.50 for pigs.

Cattle were active and largely 10¢ higher today for steers and butcher stock, but outside quotations were not changed. Sheep and lambs showed very little change, altho some early sales of lambs looked a little lower. Woolled lambs were salable at \$6.50@9.40, feeding lambs at \$7.50@8.85, wethers at \$7.25@8, ewes at \$4.50@7.50 and yearlings at \$8@8.50.

Cattle had some good advances last week based on decreased supplies and a good general demand, a large share of the beef steers selling at \$5.75@7.10, compared with \$5.40@6.75 a week earlier. There were increased sales above \$7 as a result of the advance, and the best steers went at \$8.10. Good cattle sold at \$6.50@7, with exporters paying \$6.60@6.85 for steers averaging 1,275 to 1,400 lbs., and \$5.90@6.50 for steers weighing 1,150 to 1,250 lbs. There was a decline by Thursday, but the reaction was not marked, and the sentiment of the trade was that cattle were in a firm position and would sell higher as the season advances, rather than lower. There were provoking delays of stock trains on account of the cold weather, and this interfered with business, but it tended to distribute the cattle more evenly over the week. Butcher stock averaged considerably higher, with an active demand for cows and heifers at \$3.65@6.40, and a few heifers sold at extremely high prices, a consignment of 19 head that tipped the scales at \$1,259 lbs, fetching \$7.10. Even canners and cutters sold remarkably well, advancing sharply under a strong demand, canners going at \$2.35@3 and cutters at \$3.10@3.60, while bulls were lively sellers at \$3.25@5.75. There was a large attendance of country buyers on several days in search of stockers and feeders, and the greatly inadequate offerings caused hardening prices, sales being 60¢@75¢ higher than a month ago. Stockers brot \$3.25@5.40 and feeders \$5@5.85, with buyers ready to pay as high as \$6 when any fancy feeders could be had. Milkers and feeders were again in limited supply and demand at \$25@65 per head, the best call being for choice cows at \$50 and over.

Another active and advancing week in hogs was experienced, the smaller supplies than a week earlier and in recent years enabling sellers to bring \$10 hogs much closer. The packers did all they could to check the persistent upward movement, and a left-over supply of nearly 10,000 hogs helped them to force a decline of 5¢ on Thursday in the face of aggressive competition from shippers, but the week as a whole was a mighty trying one for buyers. General features of the market do not show much change, and it is still a case of not enough swine to go around, eastern shippers taking a liberal share of the offerings, as supplies of hogs are short thruout the east. It is still simply a question of how much higher prices will go, and the situation is almost unparalleled, there being such a lack of provisions that recent sales of pork have been made not very much less than \$7 per barrel higher than a year ago and similar advances shown in lard, bacon, hams, etc. It must be admitted that the recent upward movement in hogs has been more rapid than most stockmen had expected, but the receipts have not come up to expectations, and it takes a great many hogs to supply the requirements for the trade in lard and cured meats. Heavy hogs have been selling at a larger premium, and light hogs were discriminated against.

Sheep and lambs have continued to follow an upward course because of limited supplies and a good local and shipping demand, with clipped flocks forming a rapidly growing percentage of the offerings and selling at a discount of about 75¢ to \$1 per 100 lbs. Michigan-fed western lambs went at the highest price ever recorded, and western feeding lambs were taken back to the country to be sheared and finished, buyers paying what looked like dangerously high prices. Some feeder ewes brot \$5, and a bunch of 84-lb. western yearling feeders sold at \$7.10. Little occurred to give variety to the market, it being simply a case of great shortage of mutton on the hoof at a time when the demand was particularly strong. Even woolled bucks and stags sold readily at \$5@6.25, anything in the sheep line being valued at a high figure. There is nothing in sight, so far as can be seen.

that points to other than small supplies and extremely high prices for some time to come, and sheepmen have no excuse for failing to make their holdings prime, provided they can get the feed.

Horses have continued in strong demand for another week, the special sale lasting the whole week being the great feature. The offering of these light harness horses swelled the receipts a good deal and attracted many buyers from various points.

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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. March 3, 1910.

Receipts, 950. Market active at Wednesday's prices; 10@15c higher than last week.

Best steers and heifers, \$5@6.25; steers and heifers, 1,000 to 1,200, \$5.50@5.85; steers and heifers, 800 to 1,000, \$5.25@5.50; steers and heifers that are fat, 500 to 700, \$3.75@4.50; choice fat cows, \$5; good fat cows, \$4@4.50; common cows, \$3.25@3.50; canners, \$3; choice heavy bulls, \$5@5.50; fair to good bolognas, bulls, \$4.50@4.75; stock bulls, \$3.50@4; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Bishop, B. & H. sold Kamman 1 cow weighing 900 at \$4.50, 1 do weighing 1,050 at \$4.75, 2 heifers av 800 at \$5.25, 2 cows av 1,075 at \$4; to Kamman B. Co. 8 steers av 843 at \$5.40, 2 cows av 1,040 at \$4.50, 1 heifer weighing 670 at \$3.25, to Mich. B. Co. 1 cow weighing 1,320 at \$4.60, 6 do av 900 at \$4.25, 4 butchers av 770 at \$5; to Hammond, S. & Co. 6 steers av 1,240 at \$6.25, 3 do av 980 at \$5.35, 4 do av 717 at \$5, 3 do av 1,003 at \$5.75, 2 cows av 975 at \$4.35, 3 butchers av 736 at \$4.25; to Mich. B. Co. 3 bulls av 1,283 at \$4.90, 2 cows av 960 at \$3.50, 3 do av 1,097 at \$4.50, 1 do weighing 870 at \$3.50; to Sullivan P. Co. 8 steers av 875 at \$5.60, 3 do av 626 at \$5, 1 bull weighing 1,070 at \$5.50, 11 steers av 970 at \$5.75, 4 cows av 925 at \$4.75, 1 bull weighing 2,230 at \$5.25, 2 do av 1,290 at \$5, 5 steers av 950 at \$5.50, 2 cows av 1,150 at \$4.75, 4 steers av 867 at \$5.30, 1 do weighing 1,240 at \$6, 1 cow weighing 850 at \$3.50, 4 do av 1,035 at \$4.50; to Mich. B. Co. 6 steers av 670 at \$4.75, 15 butchers av 951 at \$4.50; to Hammond, S. & Co. 2 heifers av 775 at \$3, 8 cows av 975 at \$4.75, 11 butchers av 856 at \$5.50, 5 do av 830 at \$4.25, 5 cows av 800 at \$3.25, 1 do weighing 1,030 at \$4.50, 8 do av 925 at \$3.50, 3 bulls av 1,016 at \$4.50; to Kamman B. Co. 1 bull weighing 1,900 at \$5.30.

Roe Com. Co. sold Kamman B. Co. 17 steers av 900 at \$5.60, 2 do av 655 at \$5; to Mich. B. Co. 1 bull weighing 870 at \$4.75; to Hammond, S. & Co. 1 cow weighing 800 at \$3; to Sullivan P. Co. 22 steers av 1,147 at \$6, 2 oxen av 1,630 at \$5, 2 cows av 975 at \$3.50, 8 do av 1,046 at \$4.60; to Mich. B. Co. 22 steers av 985 at \$5.75.

Spicer & R. sold Newton B. Co. 2 cows av 815 at \$3.25, 1 do weighing 1,150 at \$4.65, 4 steers av 827 at \$5, 9 do av 992 at \$6; to Sullivan P. Co. 9 butchers av 964 at \$5.20.

Haley & M. sold Mich. B. Co. 1 bull weighing 1,430 at \$5, 1 cow weighing 900 at \$3.35, 35 heifers av 678 at \$4.45, 1 bull weighing 930 at \$4.60, 1 do weighing 1,130 at \$5; to Breitenback Bros. 8 butchers av 757 at \$4.30, 4 do av 800 at \$5, 2 cows av 950 at \$4; to Sullivan P. Co. 1 bull weighing 890 at \$4.60; to Hammond, S. & Co. 1 steer weighing 830 at \$5.50, 1 cow weighing 560 at \$3, 1 do weighing 920 at \$3.50, 3 heifers av 493 at \$4; to Fronn 2 cows av 835 at \$3.25, 1 do weighing 940 at \$3.50; to Rattkowsky 4 do av 912 at \$4.35.

Rosenham sold Mich. B. Co. 3 cows av 1,053 at \$4.50.

Lowenstein Bros. sold same 9 do av 1,033 at \$4.25.

Veal Calves.

Receipts, 645. Good grades 25@50c higher than last week; steady with Wednesday; best, \$9.50@10; others, \$4@9.

Cheney & H. sold Newton B. Co. 5 av 105 at \$7, 11 av 140 at \$9.25.

Merritt sold same 5 av 125 at \$9.25.

Spicer & R. sold Nagle P. Co. 1 weighing 110 at \$8.50; to Rattkowsky 4 av 140 at \$9.

Roe Com. Co. sold Nagle P. Co. 4 av 155 at \$8, 18 av 140 at \$9.50.

Bishop, B. & H. sold Parker, W. & Co. 8 av 145 at \$10, 1 weighing 90 at \$6, 8 av 135 at \$10, 4 av 135 at \$9.50, 2 av 110 at \$7, 3 av 130 at \$8.50, 2 av 140 at \$9, 22 av 135 at \$9; to Swift & Co. 2 av 135 at \$7, 4 av 120 at \$9, 5 av 125 at \$9.50, 1 weighing 130 at \$9; to Strauss & A. 18 av 135 at \$9, 5 av 160 at \$9.50, 1 weighing 140 at \$9, 1 weighing 130 at \$9; to Parker, W. & Co. 8 av 140 at \$10, 8 av 145 at \$10; to Swift & Co. 15 av 135 at \$9.25.

Sheep and Lambs.

Receipts, 4,397. Market 25c higher than last week; steady with Wednesday.

Best lambs, \$9; fair to good lambs, \$8.50@9; light to common lambs, \$7@8; fair to good sheep, \$5.50@6.50; culls and common, \$4@5.50.

Ardner sold Nagle P. Co. 25 lambs av 140 at \$9.50.

Bergin & W. sold same 6 lambs av 155 at \$9.

Waterman sold same 17 lambs av 135 at \$9.25.

Haley & M. sold Rattkowsky 2 sheep av 240 at \$4, 4 lambs av 130 at \$8.

Bishop, B. & H. sold Mich. B. Co. 100 lambs av 61 at \$8.50, 20 do av 60 at \$8.50; to Nagle P. Co. 75 do av 85 at \$9, 23 do av 65 at \$8, 189 do av 65 at \$8.50, 38 do av 55 at \$7, 147 do av 83 at \$9; to Parker, W. & Co. 62 do av 88 at \$9.15, 29 do av 73 at \$8.85, 1 buck weighing 160 at \$5; to Nagle P. Co. 151 lambs av 80 at \$8.90, 31 sheep av 110 at \$6.25; to Mich. B. Co. 5 lambs av 80 at \$8.50; to Halse 19 do av 60 at \$8; to Swift & Co. 39 sheep av 109 at \$5.50, 18 lambs av 84 at \$8.90, 17 do av 90 at \$9, 7 do av 60 at \$7, 108 do av 88 at \$9, 13 sheep av 115 at \$6.50, 43 lambs av 85 at \$9, 3 do av 55 at \$7; to Nagle P. Co. 114 lambs av 75 at \$8.50; to Fitzpatrick Bros. 62 do av 65 at \$8.40, 13 sheep av 110 at \$6.50; to Nagle P. Co. 222 lambs av 77 at \$8.75; to Strauss & A. 75

do av 77 at \$9; to Sullivan P. Co. 27 do av 50 at \$7.50; to Halse 38 do av 55 at \$8. Spicer & R. sold Nagle P. Co. 51 lambs av 78 at \$8.90, 145 do av 80 at \$8.90, 27 do av 75 at \$8, 11 do av 68 at \$8, 5 sheep av 80 at \$5; to Mich. B. Co. 2 sheep av 115 at \$5, 19 lambs av 65 at \$8.75, 15 do av 60 at \$8.25; to Thompson 3 sheep av 125 at \$5.25.

Hertler sold Nagle P. Co. 128 lambs av 80 at \$8.85.

Lewis sold same 40 lambs av 85 at \$8.90, 55 sheep av 90 at \$5.25, 5 do av 115 at \$6.80.

Bergin & W. sold same 46 lambs av 75 at \$8.75, 4 sheep av 100 at \$4.50.

Ardner sold same 48 lambs av 70 at \$8. Bennett & D. sold same 12 do av 75 at \$8.25.

Berry sold Hammond, S. & Co. 8 sheep av 85 at \$4, 14 do av 75 at \$6.50, 23 lambs av 60 at \$8.25.

Kendall & D. sold Sullivan P. Co. 15 lambs av 50 at \$6.75, 43 do av 70 at \$8.65.

Roe Com. Co. sold Nagle P. Co. 1 lamb weighing 100 at \$8.50, 1 sheep weighing 150 at \$5.50; to Mich. B. Co. 23 lambs av 73 at \$8.75.

McBride sold Newton B. Co. 14 lambs av 80 at \$8.75.

Hogs.

Receipts, 2,333. Good grades steady with last Thursday, 10c lower than Wednesday. Pigs and light yorkers 10@15c lower.

Range of prices: Light to good butchers, \$9.80@9.90; pigs, \$9@9.40; light yorkers, \$9.50@9.60; stags, 1/2 off.

Spicer & R. sold Parker, W. & Co. 157 av 190 at \$9.90, 185 av 185 at \$9.80, 31 av 170 at \$9.75.

Roe Com. Co. sold same 158 av 195 at \$9.90.

Haley & M. sold same 98 av 200 at \$9.90, 112 av 180 at \$9.85, 60 av 140 at \$9.50, 38 av 160 at \$9.65.

Spicer & R. sold Sullivan P. Co. 36 av 170 at \$9.50.

Roe Com. Co. sold same 10 av 156 at \$9.65, 21 pigs av 120 at \$9.35.

Haley & M. sold same 48 hogs av 130 at \$9.50.

Bishop, B. & H. sold same 150 av 220 at \$10.

Same sold Hammond, S. & Co. 351 av 170 at \$9.80, 85 av 180 at \$9.85, 25 av 160 at \$9.65, 171 av 185 at \$9.75, 17 av 260 at \$10, 621 av 200 at \$9.90, 114 av 175 at \$9.60, 38 av 155 at \$9.70.

Friday's Market. February 25, 1910.

Cattle.

The market opened at the Michigan Central yards Friday with a light run in all departments. In the cattle division the trade was steady with Thursday on all grades, but there was nothing on sale good enough to bring over \$5.60 per cwt.

Best steers and heifers, \$5.50@5.60; steers and heifers, 1,000 to 1,200, \$5@5.50; steers and heifers, 800 to 1,000, \$4.75@5.25; steers and heifers that are fat, 500 to 700, \$4@4.75; choice fat cows, \$4.50@4.75; good fat cows, \$4@4.50; common cows, \$3@3.50; canners, \$2.50@3; choice heavy bulls, \$4.75@5; fair to good bolognas, bulls, \$4@4.75; stock bulls, \$3.50@4; choice feeding steers, 800 to 1,000, \$4.25@4.75; fair feeding steers, 800 to 1,000, \$4@4.25; choice stockers, 500 to 700, \$3.75@4.25; fair stockers, 500 to 700, \$3.50@4; stock heifers, \$3.50@4; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Bishop, B. & H. sold Bresnahan 5 heifers av 646 at \$4.50; to Thompson Bros. 4 cows av 1,070 at \$4; to Hammond, S. & Co. 5 do av 872 at \$4, 4 do av 887 at \$3.25, 2 do av 825 at \$3.25, 5 do av 860 at \$3.25, 5 do av 934 at \$4.50, 1 bull weighing 880 at \$4, 1 do weighing 1,440 at \$4.75, 3 do av 850 at \$4.25, 2 steers av 1,165 at \$5.60, 2 heifers av 825 at \$4.50, 1 do weighing 790 at \$4.50; to Sullivan P. Co. 1 bull weighing 1,640 at \$5, 6 do av 870 at \$4.40, 1 do weighing 1,570 at \$5, 13 steers av 939 at \$5.50, 11 do av 993 at \$5.50, 5 cows av 1,000 at \$4.40, 1 do weighing 830 at \$3.

Haley & M. sold Mich. B. Co. 1 bull weighing 1,790 at \$4.90, 1 cow weighing 600 at \$3, 3 do av 903 at \$4, 6 heifers av 666 at \$4.65.

Veal Calves.

The veal calf trade, quality considered, was about the same as on Thursday. Best grades, \$9@9.50; others, \$4@8.50.

Spicer & R. sold Nagle P. Co. 1 weighing 150 at \$7, 10 av 123 at \$9.50.

Roe Com. Co. sold same 15 av 140 at \$9.

Bishop, B. & H. sold same 13 av 135 at \$9.

Haley & M. sold same 5 av 125 at \$8, 8 av 145 at \$9.

Bishop, B. & H. sold Hammond, S. & Co. 2 av 110 at \$7, 11 av 140 at \$9.50, 3 av 125 at \$8.75, 7 av 135 at \$9.

Sheep and Lambs.

The sheep and lamb trade was strong at Thursday's prices. A few of the best went to Swift & Co., New York, for \$8.90.

Best lambs, \$8.80@8.90; fair to good lambs, \$8.50@8.75; light to common lambs, \$7.75@8.25; fair to good sheep, \$5.50@6; culls and common, \$4.50@5.50.

Bishop, B. & H. sold Street 25 lambs av 70 at \$8.50, 57 do av 77 at \$8.50, 62 do av 75 at \$7.75, 60 do av 77 at \$7.75, 5 do av 110 at \$7.75, 41 sheep av 95 at \$6.50, 20 do av 75 at \$6.50, 14 do av 85 at \$5.

Haley & M. sold same 7 lambs av 55 at \$7.50, 17 sheep av 90 at \$5.75.

Bishop, B. & H. sold Swift & Co. 181 lambs av 80 at \$8.90, 47 do av 75 at \$8.80.

Same sold Breitenback Bros. 30 lambs av 60 at \$7.75, 29 do av 60 at \$8.25.

Giles sold Hammond, S. & Co. 10 sheep av 81 at \$3.50, 66 lambs av 65 at \$7.75.

Hogs.

The hog market was 15@20c lower than on Thursday, \$9.60 being the top. Light to good butchers, \$9.60; pigs, \$9.25@9.40; light yorkers, \$9.40@9.50; stags, 1/2 off.

Roe Com. Co. sold Parker, W. & Co. 67 av 160 at \$9.55.

Sundry shippers sold same 105 av 180 at \$9.60.

George Brown, of Illinois, who has been a regular shipper of hogs and cattle to the Chicago market for the past quarter of a century, marketed a load of hogs recently at \$8.75 per 100 lbs. He is a great admirer of pure-bred Herefords, and is the proud owner of forty "white-faces" of his own breeding.

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BECAUSE it has the lightest bowl of equal skimming capacity of any machine, and you know it takes less power to keep 3 lbs. in motion than 6 lbs. Our gearing is so arranged that it does away with the old worm principle used on other separators. Note the slant given the wheel which drives the bowl. This eliminates the friction of the old style worm wheel. Each bearing has a reservoir of oil, in which no dust or dirt can collect. This is different from any oiling system used in any other separator. THE IOWA MACHINE HAS PROVEN IN ALL EXPERIMENT STATION TESTS TO BE THE EASIEST RUNNING MACHINE MADE.

THE IOWA IS EASIEST AND QUICKEST CLEANED

BECAUSE it is the only machine in which the skimming device can be washed by centrifugal force. The washing is done by simply running water through the bowl. It has a self-draining bowl and all milk drains out of it at the end of the run. The skimming device consists of only two pieces. The heaviest piece a woman has to lift in washing this machine weighs only 3 lbs., while in other machines she has to lift from 10 to 15 lbs. THE IOWA SEPARATOR IS CLEANED IN JUST ONE-HALF THE TIME IT TAKES TO CLEAN ANY OTHER MACHINE.

The Iowa is the most durable.

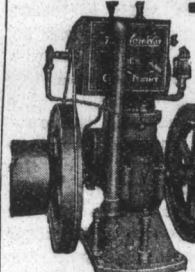
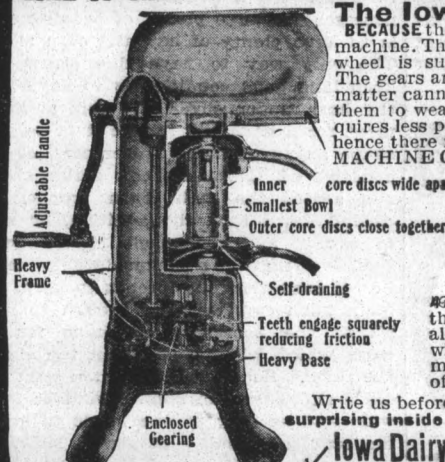
BECAUSE the frame is heavier than that of any other machine. There are no overhanging bearings, every wheel is supported by a bearing on each side. The gears are tightly enclosed so that dust or other matter cannot get to them to clog them and cause them to wear. The IOWA bowl being lighter, requires less power to maintain its proper speed and hence there is less wear on the gears. NO OTHER MACHINE CAN LAST SO LONG BECAUSE NO OTHER MACHINE CONTAINS THE ABOVE FEATURES.

We have the largest separator factory in the world and it is a fact that you cannot buy a separator anywhere at any price that will equal the IOWA in all the above points.

If you can find any other separator that will skim to its rated capacity under all conditions as closely as the IOWA, we will make you a present of one of our machines. There are no strings to this offer and it is not limited in any way.

Write us before you buy and we will give you some surprising inside information on separators.

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from every second hill means a loss of 14 bushels to the acre; every third hill, 10 bushels; every fifth hill, 6 bushels.

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It's cheaper than bran. Cost \$15.00 ton less than oil meal.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

PLAN FOR DAIRY BARN.

I am intending to build a cow barn next spring and I would like you to send me a plan to build, also stating how to put it up. I intend putting in cement floors.

Alcona Co.

M. R. S.

Mr. Sloan does not say how large he wants his barn, how many cows he wants to accommodate, or anything about it, so that it is practically impossible to give any definite plan with regard to his proposed new building. I do not believe that a plan for a dairy barn can be devised that will be any better, all things considered than a T shaped barn. That is, build the main barn and then end another barn up against it in the form of a T. Have the main barn large enough for ample storage for hay, and then room enough for the grain that one raises on the farm to be put in on top of the hay mow and on scaffolds over the drive floor. Then the other part of the barn that ends up against this in the form of a T can be used to put the straw in when one threshes. On a dairy farm it is just as necessary to have plenty of bedding as it is to have plenty of hay and corn silage. The only way to have this straw and keep it in good condition is to have it in the barn under cover and this arrangement for a barn will handle it in as good shape as any scheme I ever saw, or can conceive of. Now, the cow stable should run across the main barn proper, and extend down thru the addition, or stem of the T and the whole should be of sufficient length to accommodate the number of cows that one intends to keep. The main barn can be large enough to store all of the necessary roughage for the cows which will depend upon the size of the farm. Supposing this main part was 45x60 ft. Then the stem should be 36 ft. wide and as long as one needs to get in the required number of cows. Now, the cow stable would extend the whole length of the stem of the T and cross the main barn, making one continuous stable, the cows facing the outside with a broad alley between the two rows of cows so that one can drive thru with a manure spreader or manure truck, and load the manure directly onto this wagon. By this arrangement the cows face the outside where they will get fresh air to breathe, your hay chutes will be on the outside of your barn and will not interfere with your basement, while if you stand the two rows of cows with their heads together, the feeding alley comes in the center and the hay chutes above will necessarily come in the center of the barn and right in the way. Of course, the cow stable proper extending across the main barn will leave a space on either end of the big barn which will not be utilized for cows, but this can be utilized by making it into box stalls for the purpose of keeping calves and for a hospital for cows when necessary. I have seen a great many dairy barns and have thought of this question considerably and I do not know or cannot think of any better plan. Make the basement entirely above the ground. Let the wall come simply a foot above the ground and then board it the rest of the way for the basement. Double board, with tar paper between, and it ought to be sheeted on the inside. Then, for the barn proper I would use the plank frame. Any carpenter will tell you how to make that. And I would also have a hip or sprung roof. The floor between the stable and the storage part of the barn should be double boarded, with the cracks mismatched, else you cannot keep your stable warm and cannot prevent dust and dirt from rattling down from overhead. If Mr. Sloan will write me the number of cows he wants to keep, I can give him more specific figures as to the size of the barn.

IMPROVEMENTS IN BREEDING BY GRADING.

If I breed a thoroughbred bull to a mongrel cow will I get a half-blood and what fraction will I get the next time? Can I get a thoroughbred dairy herd in this way? My neighbors tell me that I can get a 7/8-blood the second service, but I did not think so.

New York.

F. BIXBY.

The system of breeding known as grading consists in mating common, or relatively unimproved cows to a pure-bred sire. The first cross would result in one-half blood, that is, the calves would contain 50 per cent of the blood of the sire.

The second cross would be three-fourths blood, or contain 75 per cent of the blood of the sire. The third generation would be seven-eighths blood, or contain 87 1/2 per cent of the blood of the sire. The fourth generation would be 15/16, or contain 93.75 per cent of the sire. The fifth would be 31/32 pure, or 96.87 per cent of the blood of the sire. The sixth generation would be 63/64 pure, or contain 98.44 per cent of the blood of the sire. Hence in the sixth generation we would have only 1.56 per cent of unimproved blood in the herd. Accurately speaking, we could never have pure-bloods by the system of breeding known as grading, because there would always be a small portion of the unimproved blood in the offspring, though as we proceed it can readily be seen that this amount would be exceedingly small. Indeed, it is exceedingly small even in the sixth generation. Nevertheless, it would always be divided and never be blotted out. For all practical purposes, however, the animals would be the blood of the sire.

GOOD HERD RECORD.

As I take pleasure in reading reports of dairy cows I thought this might be of interest to some one. My cows could not be called Holstein grades but they are a good grade of black and white cows. The year's record is as follows:

Average number of cows for year...	7
Total number of lbs. of milk delivered at station	50,951
Lbs. milk used and sold to neighbors	4,745

Total for herd for year	55,696
Average per cow for year	7,956 1/4
Price paid, 4 mos. at \$1.50; 2 mos. at \$1.40; 1 mo. at \$1.35; 3 mos. at \$1.25; 2 mos. at \$1.	

Checks from station	\$688.86
Milk used and sold at \$1.33 1/4 a cwt. 63.27	
Calves sold, males, \$20; heifer raised, \$10	30.00

Total received from cows	\$782.13
Average gross profit per cow	111.73
Cost, grain, \$26.92; pasture, \$10; cornstalks, 7 mos., \$21, making total cost per cow	57.92

Profit per cow in year	\$53.81
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It always helps us if we know what someone else is doing with a good herd of common cows. This grain for the year was 2 1/4 tons of cottonseed meal, and 5 1/4 tons of dried beet pulp.

(This is certainly a good record for a herd of cows. There is, however, one item that makes the record rather unsatisfactory. Mr. McLaughlin says average number of cows is seven. Now, as explained before, if a cow is kept until she is nearly dry and sold and a fresh cow purchased to take her place, and so on, and by this means there are seven cows kept giving milk continuously during the year, it is hardly a fair comparison with a herd where the same seven cows are kept for the whole year, and this would bring down the average yield of milk somewhat and consequently reduce profits also.—Ed.)

OATS AND RYE FOR GRAIN FEED.

Will you please criticize thru the medium of your paper, my formula for feed and method of feeding my milk cows, and mention such changes as you deem advisable. I have plenty of bright-shredded corn fodder and good clover hay, corn, oats, and rye. At present am feeding mornings all the corn fodder they will clean up, with grain ration consisting of corn meal, 75 lbs.; oats, 65 lbs.; rye, 120 lbs.; bran, 192 lbs., figuring 1 lb. of feed to 4 lbs. of milk; noons, what clover hay they will clean up, with 1/2 peck of potatoes per cow; night, feed the same as morning. Any suggestion on improvement of above ration will be greatly appreciated. Also, please give me your opinion as to what potatoes are worth as a succulent feed for cows where no other roots or ensilage are available.

Kalamazoo Co. H. M. B.

I think Mr. B.'s system of feeding is excellent and the ration is a good one. Clover hay and good corn fodder make a good roughage, that is, if they are fed liberally. I think, however, that he can change his grain ration somewhat and get better returns for the money invested in feed. I would not feed the oats or the rye in the ration. Cut them out entirely and increase the corn and cob meal to 100 lbs. instead of 75 and then I would put in 100 lbs. of oil meal in the place of 65 lbs. of oats and 120 lbs. of rye and feed in the same manner as before. I am quite positive that this will cheapen the ration and that you will get fully as good, if not better, results, from your cows than you are getting now. I think the practice of feeding a small ration of potatoes to the cows where you have no ensilage, a most excellent one to keep the cows in good thrifty condition, and I am sure that potatoes fed under these

Are They Afraid?

Twice this year we have publicly and widely made the following fair offer to manufacturers of common cream separators. We again repeat it:

If any maker of common cream separators will print the names and addresses of all persons who—for any reason whatever—exchanged Tubulars for his machine during 1909, we guarantee to print a list AT LEAST TEN TIMES AS LONG of those who discarded his class of machines for Tubulars during 1909.

No manufacturer has accepted this offer. Are they afraid? Is not their silence the best proof that Sharples Tubular Cream Separator sales exceed most, if not all, others combined—that Tubulars probably replace more common separators than anyone maker of such machines sells? Could you ask any better reason for choosing the simple, sanitary, easy-to-clean Sharples Dairy Tubular—The World's Best?

World's biggest separator factory. America's oldest separator concern. Branch factories in Canada and Germany.



To oil the Dairy Tubular, pour a spoonful of oil into the gear case once or twice a week. Self oiling. No oil c.p., tubes or holes.

Write for New Catalog No. 152.

30 yrs

THE SHARPLES SEPARATOR CO., WEST CHESTER, PA.
Chicago, Ill. San Francisco, Cal. Portland, Ore. Toronto, Can. Winnipeg, Can.

Which is the Better Roof



3 Years After Laying?

A composition of tar paper roofing which dries out in a few months, rots, and is a constant fire menace—or a galvanized, fire-proof Edwards Steel Shingle Roof which outlasts composition roofing six times and wood shingles four times.

Yet Edwards Steel Shingles cost half as much as best cut wood shingles and about the same as high-grade 3-ply prepared roofing.

Edwards "REO" Steel Shingles

Easy to Put On—Cheapest Fire Insurance
Come in stamped sheets of finest Bessemer Steel, 5 to 10 feet long, covering width 24 inches, either galvanized or painted. Can be laid with hammer and nails. No soldering—no tarring—no trouble.
\$10,000 Guarantee Bond Against Lightning. We will refund amount paid for our steel shingles if your roof is damaged by lightning.
Buy at Factory Prices. We are largest makers of iron and steel roofing and pay the freight on all Steel Shingles; Plain, Corrugated, V-Crimp Roofing; Imitation Brick Siding, etc. Send for our lowest factory prices delivered, also for free catalog No. 250. Write today.

The Edwards Manufacturing Co.
220-250 Lock Street (11) Cincinnati, Ohio

BOWSHER

(Sold with or without elevator)
CRUSH car corn (with or without shucks) and GRIND all kinds of small grain. Use Conical Shape Grinders. Different from all others.

LIGHTEST RUNNING.

(Our Circular Tells Why.)
Handy to Operate. 2 Sizes—2 to 25 h. p. One size for wind-wheel use.

Also Make Sweep Grinders; both Geared and Plain.

D. N. P. Bowsheer Co.
South Bend, Ind.

FEED MILLS

ONE MAN DOES WORK OF TWO

With Iron Age Riding Cultivators. You can do it easier and better, because they are built on lines that make this possible. Hoes are under perfect control. Can regulate depth and keep hoes desired distance from growing plants. More advantages in our IRON AGE FREE.



BATEMAN MFG. CO., Box 104C GRENLOCH, N. J.

CALVES RAISE THEM WITHOUT MILK

BOOKLET FREE. J. E. Bartlett Co., Jackson, Mich.

What Ails You?

Do you feel weak, tired, despondent, have frequent headaches, coated tongue, bitter or bad taste in morning, "heart-burn," belching of gas, acid risings in throat after eating, stomach gnaw or burn, foul breath, dizzy spells poor or variable appetite, nausea at times and kindred symptoms?



If you have any considerable number of the above symptoms you are suffering from biliousness, torpid liver with indigestion, or dyspepsia. Dr. Pierce's Golden Medical Discovery is made up of the most valuable medicinal principles known to medical science for the permanent cure of such abnormal conditions. It is a most efficient liver invigorator, stomach tonic, bowel regulator and nerve strengthener.

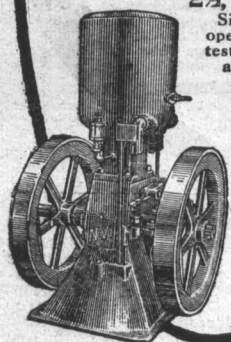
The "Golden Medical Discovery" is not a patent medicine or secret nostrum, a full list of its ingredients being printed on its bottle-wrapper and attested under oath. A glance at these will show that it contains no alcohol, or harmful habit-forming drugs. It is a fluid extract made with pure, triple-refined glycerine, of proper strength, from the roots of native American medicinal, forest plants. World's Dispensary Medical Association, Props., Buffalo, N. Y.

No Tank, No Fan No Freezing

Water cooled too—but no separate tank to cart around.
Water cooled—but couldn't be injured if the water froze solid—and guaranteed so.
Strong as any engine made—but weighs one third less; easy to handle.
Always pulls more than promised.
All these things are true of

NOVO Gasoline ENGINES

2½, 3½ and 5 H. P.
Simplest possible to operate—all thoroughly tested and guaranteed as represented.



Send for the NOVO BOOKLET (it's free) and will explain the Novo improvements.
HILDRETH MFG. CO.,
J. Willow St., Lansing, Mich.

GOITRE

Did you ever try Dr. Warren's Goitre Remedy, the remedy that removes the unsightly Goitre while you sleep. Or Dr. Warren's Asthma Catarrh and Hay Fever Remedy, the remedy that cures you at home. The remedy that is Guaranteed. Write for testimonials. Prepared and manufactured by DR. F. A. WARREN & Co., Tekonsha, Mich.

DEHORN YOUR CATTLE

With the quick, easy, painless KEYSTONE DEHORNER Dehorned cattle are quicker and better money makers. Any one can do it. Write for Free Booklet on Dehorning. M. T. PHILLIPS, 125 Main St., Pomeroy, Pa.

WANTED—A married man to work on dairy farm and operate B. L. K. Miler. Good wages, steady work. F. G. HACKER, Mt. Clemens, Mich.

conditions are well worth 25c per bushel and I believe even more for food. Perhaps their chemical analysis would not show more than this value with the present price of other feed but the succulency and added palatability to the ration is of considerable value and ought to be reckoned.

SHALL THE CREAM BE RIPENED BEFORE CHURNING?

Referring to an article from your issue of 5th inst., which advises heating separator cream to 180 degs., should it be churned immediately after cooling to proper temperature, or should the cream be ripened to proper acidity before churning. Would it be necessary to use a starter? I have been unable to ripen cream under 36 to 48 hours this winter without starter. Will heating to 180 degs. affect quality of butter?

Cheboygan Co.

H. T. R.

If you have been making ripened cream butter and your trade demands it, and it probably does, you will have to ripen the cream after heating it, or pasteurizing it. If you cool the cream to 70 degs. it will be much better, in fact, almost necessary to use a starter. If your last churning was all that it should be, you could use some of the buttermilk for a starter. Of course, it is better to have a starter made from pure culture but if you only have a small amount of butter to make, it is not very practical to have this. It will not injure the butter to heat the cream to 175 or 180 degs., provided you cool at once to 70 degs. Many creameries now pasteurize the cream, which is simply heating it to 170 to 180 degs. and cooling it quickly. Many of them churn at once and produce sweet cream butter.

STORING TURNIPS—BUCKWHEAT BRAN.

Please let me know the best way to store turnips for stock; they seem to heal and rot. Also, do you consider buckwheat bran equal to wheat bran to be fed to milk cows, mixed with corn meal and turnips?

Mecosta Co.

G. E. S.

Turnips can be stored in cool cellars. The tops should all be carefully removed as a few tops will cause the turnips to heat and spoil. If the cellar is properly ventilated early in the season large quantities of turnips can be stored together without any danger of heating, but the cellar must be kept cool. Sometimes in the absence of a good root cellar, turnips and other roots are stored in pits in the field and then hauled to the barn a load at a time as wanted.

If by buckwheat bran is meant the hulls of buckwheat, they are of little value as food. They consist largely of crude fibre and are consequently not very digestible. Buckwheat middlings are a splendid dairy food, containing a high per cent of protein (over 20 per cent), and of greater value, consequently, than wheat bran.

TEOSINTE FOR COW FEED.

I would like to know what you think of teosinte as a green or dry feed for cows or any other farm stock. How would it be to put it in a silo with corn, or alone? Last year we raised a small patch of teosinte. It was planted about the middle of June and cut for cows in September. We estimated that it produced about 40 or 45 tons of green feed on an acre. The cows ate it as readily as corn. We did not have enough to give it a thoro test and find actual benefits.

Kalamazoo Co.

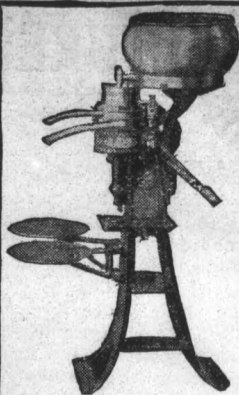
H. G. H.

This plant is a relative of the corn plant. The two plants will mix if grown close together. It is not usually supposed to be of great value as far north as Michigan. Our experiment station grew some several years ago and report that it only grew four or five feet high. In some other places it has done better, depending largely on the season. This plant wants a hot, moist climate. It makes good feed either green or dry, and can be safely put in the silo, but from what I have heard of the plant, I would not grow any considerable acreage until I had tested it carefully.

MILKING THE HEIFER.

Some care and discrimination is required in breaking in young animals to the milking operation. It is not to be expected that a heifer should allow without protest the same liberties taken with her udder as does an animal that has several times been thru the mill. In her first experiences with the milkman the young animal should be petted a little and talked to before milking and her udder gently handled and rubbed. Tremors and shivers will possess her at the new experience, but as soon as she learns that the milking relieves the pressure her confidence will increase.

G. E. M.



THE Business Man's CREAM SEPARATOR

The DE LAVAL is the BUSINESS MAN'S Cream Separator and the men who use cream separators AS A BUSINESS use the DE LAVAL. Ten years ago there were a dozen different makes of creamery or factory separators in use. Today over 98 per cent of the world's creameries use DE LAVAL separators alone, and no effort is longer made to sell any other kind.

It means a difference of several thousand dollars a year whether a DE LAVAL or some other make of separator is used in a creamery, and users of factory separators have found that they either had to use DE LAVAL separators or get out of business. They could not meet competition otherwise. Thousands of other makes of separators have been thrown onto the scrap heap in consequence.

Exactly the same differences exist, on a smaller scale, in the use of FARM separators. But the farm user doesn't know it. Nine time out of ten he can't tell when he is wasting \$50, or \$100, a year in quantity and quality of product through the use of an inferior separator.

But every FARM user of a separator KNOWS that if it is absolutely necessary to use a DE LAVAL separator with the milk of a creamery it must PAY relatively well to do so on the farm. No amount of argument can get around that unanswerable conclusion.

THE DE LAVAL SEPARATOR CO.

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\$15.95
AND UPWARD

THIS OFFER IS NO CATCH.

It is a solid, fair and square proposition to furnish a brand new, well made and well finished cream separator complete, subject to a long trial and fully guaranteed, for \$15.95. It is different from anything that has ever before been offered. Skims 1 quart of milk a minute, hot or cold, makes thick or thin cream and does it just as well as any higher priced machine. Any boy or girl can run it sitting down. The crank is only 5 inches long. Just think of that! The bowl is a sanitary marvel; easily cleaned and embodies all our latest improvements. Gears run in anti-friction bearings and thoroughly protected. Before you decide on a cream separator of any capacity whatever, obtain our \$15.95 proposition.



THE LOW DOWN AMERICAN SEPARATOR

EXCELS ANY SEPARATOR IN THE WORLD

OUR LIBERAL TRIAL ENABLES YOU TO DEMONSTRATE THIS. While our prices for all capacities are astonishingly low, the quality is high. Our machines are up to date, well built and handsomely finished. Run easier, skim closer, have a simpler bowl with fewer parts than any other cream separator. Thousands of machines in use giving splendid satisfaction. Write for our 1910 catalog. We will send it free, postpaid. It is richly illustrated, shows the machine in detail and tells all about the American Separator. Our surprisingly liberal long time trial proposition, generous terms of purchase and the low prices quoted will astonish you. We are the oldest exclusive manufacturers of hand separators in America and the first to sell direct to the user. We cannot afford to sell an article that is not absolutely first class. You save agent's, dealer's and even catalog house's profits by dealing with us and at the same time obtain the finest and highest quality machine on the market. Our own (manufacturer's) guarantee protects you on every American Separator. We ship immediately. Western orders filled from Western points. Write us and get our great offer and handsome free catalog. ADDRESS.

AMERICAN SEPARATOR CO., Box 1061, BAINBRIDGE, N. Y.

Which One Will You Test on Your Farm for Ninety Days? Freight Prepaid

Which will you try, 30 Days' Free or 90 Days' Approval Test?

—Any capacity from 200 to 950 pounds per hour, according to your needs, and I'll save you from \$25.00 to \$50.00 on the price.

—The only Separator whose gearing runs in a "Bath of Oil" like a \$5,000 automobile—Feature worth \$50.00 alone.

—Automatically oils itself—Pour oil at the top, once a month from your oil jug or can—No danger of running dry, or ruining it like others—No oil cups to remember to fill or turn up twice a day.

—Dust-proof—Danger-proof—All gears enclosed—simple but standard built and absolutely dependable.

GALLOWAY'S New "Bath in Oil" HIGH GRADE STANDARD CREAM SEPARATORS

—Has the only revolving supply tank—worth \$15.00 alone. —Easiest to clean and the few parts come out easy and can't get back out of place.

—Easiest to run—high crank—low tank. With no high lifting and no "back-breaking" cranking.

—Gets the finest quality cream and all of it—no lumps or churning, as Nature's true principle is followed without forcing either the milk or cream the wrong way up or down.

—Skims closest in any climate or season, no matter whether your milk is warm or cold.

—Is as handsome a machine, compact and substantial, as you ever saw or could find. Beautiful finish.



Only \$33.50 and Up

I'll Save You \$25 to \$50

MORE BUTTER MONEY

Whether you keep one cow or fifty, you are now losing at least ONE-FOURTH of your butter money. You can't possibly get more than three-fourths of the cream by hand skimming or water separators. You lose enough butter money every few months to more than pay our factory price for the size of cream separator you need. A New Butterfly Jr. No. 1 price for you only \$14.85 and gets all the cream as soon as the milking is done, just the same as any \$100.00 machine. It purifies the milk for your table, does away with washing dirty pans and crocks, skims 1 quart of milk per minute; runs so smoothly and easily a child can operate it; cleans more quickly and perfectly than any other cream separator. Read why in our free 1910 catalog just printed. Every New Butterfly Cream Separator made in our own factory, shipped direct to you on 30 days' free trial and guaranteed a lifetime. Write for catalog today. It is free. Address ALBAUGH-DOVER CO., 2190 Marshall Blvd., CHICAGO



\$14.85 AND UPWARD

A New Butterfly Cream Separator will pay for itself in just a few months. After that it will make \$10.00 to \$15.00 a year extra profit on each cow you own. Five other sizes. Prices from \$14.85 up to \$40.00. Write now for 1910 Catalog.

Just Say "Saw your ad. in the Michigan Farmer" when writing advertisers.

"THE NAME TELLS A TRUE STORY."

Superior Grain Drills are used with success, satisfaction and profit by the most successful farmers in all parts of the world where grain is grown. It matters not where you live, what your seeding conditions are, what seeds you wish to plant, or if you use fertilizers, how obstinate they are to handle, you can get a Superior Drill that will do your work in the best possible manner with the least labor for man and team. Superior Drills must do all that is claimed for them, for they are sold with a plain, honest guarantee that means much to the purchaser. Write today for a Superior catalogue to The American Seeding-Machine Co., Incorporated, Springfield, Ohio. Then go to your retail implement dealer and insist on seeing the Superior Drill. Take no substitute.

9 Large Potatoes to the Hill



That is what you get from our seed. We have perfected several varieties of potatoes that are unequalled in quality and yield. Our customers have had wonderful success with our potatoes, beans and peas—they are our specialties—been years developing them to their present state of perfection. Let us send you our 112 page catalog of hardy, Northern-grown field, vegetable and flower seeds. Write to-day.

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Apples, Peaches, Pears, and Plums; Currants, Gooseberries and other small fruits; vegetables of all kinds—all yield better and more profitable returns each year if sprayed properly. Insects and fungi cannot exist on properly sprayed trees and plants. We'll prove to you as we have to hundreds of others, that when used right

Orchard Brand Tested Spray Mixtures Will More Than Double Your Fruit Crops

These products include Arsenate of Lead, Bordeaux Mixture and Bordeaux-Arsenate-Lead; Soluble Oil and Lime-Sulphur Solution; Bluestone and Sulphur. Ready to use by adding cold water. Our Booklet E is full of interesting spray facts. We'll send it on request. Write today.

Thomson Chemical Co., Baltimore, Md.

GOOD SEEDS BEST IN THE WORLD

PRICES BELOW ALL OTHERS

I give a lot of new sorts for trial with every order I fill. A Grand Big Catalog **FREE** Illustrated with over 700 engravings of vegetables and flowers. Send yours and your neighbors' addresses.

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CHOICE NURSERY STOCK

FOR ORCHARD, LAWN and GARDEN, From Grower to Planter—LOW PRICES. Forty years' Experience in well-known GREAT NURSERY CENTER. Write for catalog. SEND WANT LIST. THE MUTUAL NURSERIES, CHAS. A. ILGENFRITZ, Monroe, Michigan.

SEED CORN

WING'S IMPROVED WHITE CAP. 45 acres in 1908 produced 4505 bu.; 100 acres in 1909 produced 9000 bu. WING'S 100-DAY WHITE. Splendid early white. WING'S 120-DAY YELLOW. Yields close to the Improved White Cap. and is a splendid, reliable variety. We also grow REID'S YELLOW DENT, CLARAGE and other choice varieties. Write for Catalog No. 42 WING SEED CO., Box 442 Mechanicsburg, Ohio

The FARMERS' GARDEN

A Seed Drill and Wheel Hoe is indispensable—not only in a village garden but on largest farms. Farmers should grow all manner of vegetables and "live on the fat of the land." Should provide succulent roots for Cattle, Swine, Poultry, and save high priced feed stuff. Great labor-saving tools of special value for the home as well as the market garden. Send for free book.

IRON AGE

Only One of Many Iron Age Tools. The most complete tool made.

BATEMAN MFG. CO., Box 104G, GRENLOCH, N. J.

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

HORTICULTURE

BOXES FOR FANCY MICHIGAN APPLES.

The movement now well under way to abandon the barrel for the box, as a package to market the fancy product of Michigan apple orchards, is certainly to be commended. While the movement has the largest number of supporters in the western part of the state where fruit is a more important part of agriculture, than in other sections, yet it is true that the leading apple growers thru the center and eastern portions are likewise looking to the box as the proper receptacle for shipping their best grade of apples. The question has been agitated for some time. Isolated parties have practiced it and



Black Knot on plum twigs. The affected parts should be cut out and burned.

found that the profits from their orchards were considerably increased thru this superior method of marketing. Should the practice become general, the individual shipper will not only receive the benefit naturally coming from his individual crop, better "put up," but he will inherit an added benefit from the community reputation that would follow. Progressive fruit growers are certain that the practice will become a necessary part of the work of the best producers. Progress demands it. It is therefore essential that packing in boxes be not abused as it can be, for should the public lose confidence now by improper packing, as it has lost confidence in the past by unscrupulous buyers and growers "deaconing" their packages, it will delay the day when Michigan apples will again enjoy the high standard which her fruit merits. We believe that a state law could be made to contribute to the success of this movement by compelling the grading of fruit according to certain required standards. It is not only expedient but right that the fruit growers of Michigan be protected and we believe it a duty on the part of the commonwealth to give at least reasonable relief when their business and reputation are open to this danger of allowing every person who lacks moral honesty to palm off upon the public a package of fruit that is fraudulently marked without making himself liable to the law. A measure of this nature would help every honest person, whether buyer or producer.

ORCHARD FERTILITY.

The past season's bountiful fruit crop and its highly remunerative returns will prove an almost irresistible incentive to the fruit grower and general farmer who is so fortunate as to be located well within the fruit zone of western Michigan, to enlarge the area devoted to this (without doubt) the best paying of the great diversity of crops to which her climatic conditions and varying soils have proven so specially adapted. While fruit growing is bound to become more of a specialty in this highly favored region, we certainly do not think it advisable for the average farmer to rush headlong into the fruit business to the exclusion of everything else, as such an extreme might possibly prove in coming years, as disastrous to our resources as the production of cotton exclusively has proven to the south.

If, as has been claimed, that a 250 bushels per acre crop of apples will remove from the soil as much fertility as an average crop of wheat, it is plainly evident that fertility must, from time to time, as the growth of tree and production of fruit demand, be restored to the soil. As potassium, nitrogen and phosphorus are the elements of fertility most

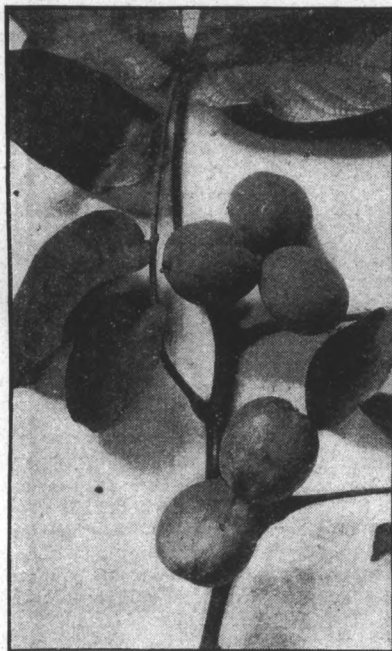
rapidly exhausted, these can be most cheaply restored to the soil by the application of stable manure, if the supply is adequate to the demands of the orchard in addition to those of the remainder of the farm. While these elements can be restored to the soil by application of the commercial forms, yet to rely upon them exclusively we do not think results would prove perfectly satisfactory, as under the clean culture method the soil would soon become practically destitute of humus, the great value of which as an aid in the conservation of soil moisture and in mechanically improving the condition of soils we should by no means underestimate.

As will prove the cast with the average farmer, as he increases the area devoted to fruit, he decreases in the same ratio the area devoted to diversified farming consequently the number of live stock and the quantity of manure manufactured, the annual application of which with a short and judicious rotation of crops in which clover has figured most conspicuously, has been barely sufficient to maintain the fertility of the soil under a well managed system of diversified farming and live stock production or dairying.

The question presents itself, how is the fertility of these rapidly increasing areas devoted to fruit growing going to be maintained or added to. In many instances the land to be so utilized is a sand hill, the soil of which has become so depleted as to render its devotion to the ordinary field crops no longer profitable. By the thoro culture method as practiced by most successful growers, little or no opportunity is afforded to add humus and fertility by the growing and plowing under of crops excepting as is afforded by the brief period of growth intervening the last cultivation and the end of the growing season, it is plainly to be seen that the fertilizing material will have to come from the balance of the farm—which will prove a "rob Peter to pay Paul process"—or the commercial forms will have to be used.

In our judgment the problem of the maintenance of soil fertility is to the fruit growers as well as to the general farmer a most vital one and demands our best thought and closest attention to every detail. For upon its proper solution depends as much as upon any other one essential, the future success of orchard growth and fruit production.

Indications are that there will be more fruit trees planted in most sections of



English Walnuts matured in latitude of Grand Rapids.

this fruit belt the coming season than in any previous three. While it is encouraging to know that fruit growers and farmers are awakening to the great possibilities of fruit growing, it is apparent that many mistakes will be made in the planting of these new orchards to avoid which we think the only safe plan for the amateur would be to consult some good, reliable authority as to kinds and varieties best suited to location, soil, market, etc.

Mason Co.

HOMER SHIRLEY.

MANURING AND FERTILIZING TRUCK CROPS.

Information recently received from the Maryland experiment station concerning the results of several manuring and fertilizing experiments with truck crops in which it was sought to bring out the relative values of stable manure and com-

NURSING MOTHERS

show the beneficial effects of

Scott's Emulsion

in a very short time. It not only builds her up, but enriches the mother's milk and properly nourishes the child.

Nearly all mothers who nurse their children should take this splendid food-tonic, not only to keep up their own strength but to properly nourish their children.

FOR SALE BY ALL DRUGGISTS

Send 10c., name of paper and this ad. for our beautiful Savings Bank and Child's Sketch-Book. Each bank contains a Good Luck Penny.

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Vick Quality Seeds

You may be able to save a few cents by buying ordinary seed instead of Vick Quality Seed, but you will count your loss in dollars when you come to gather in your crop. We have been proving this to thousands of gardeners during the past sixty years. Get your seed this season from us and we will prove it to you, too, by the crop.

Vick's Garden and Floral Guide, 1910, is ready. We've made it bigger, better, more helpful than any we have issued in the past 60 years. Everybody interested in gardening or farming should have it. We send it free on request.

Write for your copy to-day.

JAMES VICK'S SONS, 438 MAIN ST., ROCHESTER, N. Y.

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If you will write for our big seed catalog at once and send us an order amounting to One Dollar or over within thirty days from the date you receive our catalog, we will send you absolutely free with your order, a large collection of new varieties of seeds, sufficient to grow \$50.00 worth of vegetables and flowers. Hunkel's Seeds are known everywhere—sow them in 1910 and grow record crops. Our 1910 catalog of Farm and Garden Seeds is bigger and better than ever. Write for catalog today and take advantage of our big \$50.00 free offer.

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307 Chestnut St.
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To grow the finest flowers and most luscious vegetables, plant the best seeds. Ferry's Seeds are best because they never fail in yield or quality. The best gardeners and farmers everywhere know Ferry's seeds to be the highest standard of quality yet attained. For sale everywhere.

FERRY'S 1910 Seed Annual
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Seeds, Plants, Roses,

Bulbs, Vines, Shrubs, etc. Hundreds of car lots of FRUIT and ORNAMENTAL TREES. 1200+ acres, 50 in hardy Roses, none better grown. 44 greenhouses of Palms, Ferns, Ficus, Geraniums and other things too numerous to mention.

Seeds, Plants, Bulbs, Roses, Small Trees, etc., by mail postpaid. Safe arrival and satisfaction guaranteed. Immense stock of SUPERB CANNAS, the queen of bedding plants. 50 choice collections cheap in Seeds, Plants, Roses, etc. Elegant 168-page Catalog FREE. Send for it today and see what values we give for your money. Direct deal will insure you the best at first cost. 56 years.

THE STORRS & HARRISON CO.,
Box 204, PAINEVILLE, OHIO

TREES THAT GROW

Apples 6c., Peach 5c., Plum 12c., Cherry 15c. Best quality, good bearers, grafted stock, not seedlings. Concord of Vegetable, Grapes \$2.50 per 100. Forest Tree Seedlings \$1.00 per 1,000 up. We pay the freight.

German Nurseries & Seed House. Complete line of Vegetables, Flower and Farm Seeds. Our large illustrated catalogue free. Also free Sample packet of "New Coreless" Tomato, the best of all tomatoes.

German Nurseries,
Box 127, Beatrice, Neb.

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will reduce living costs and give better living. Vaughan's 1910 Catalogue will show you a straightforward talk about all the best kinds of vegetables and flowers that expert growers in America and Europe can raise.

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Bargain Flower Novelties

To put our Book in the hands of everyone who makes a garden we mail it with these 9 splendid flowers for 20 cents—two dimes.

- 9 Good Things 20c**
- 35 seeds Sweet Peas, Spencer Mixed
 - 15 seeds Kudzu Vine
 - 100 seeds Poppy Cornell
 - 100 seeds Pansy Giant Mixture
 - 15 seeds Fall Nasturtium, New Coquette
 - 25 seeds Marigold Eldorado
 - 15 seeds Japanese Morning Glory
 - 25 seeds Cosmos Lady Lenox
 - 100 seeds Feathered Coxcorn

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On Free Trial NO MONEY IN ADVANCE. No bank deposit. Shipped to you at dealers' wholesale prices. We pay freight and guarantee Sprayers five years.



The Hurst Potato and Orchard Sprayer doubles your crop. IT SPRAYS ANYTHING—trees, potatoes, vineyards, truck, etc. High pressure. Easy to operate. Cheap in price, light, strong, and durable. BRASS valves, plunger, strainer, etc. HURST HORSE-POWER SPRAYER for orchards, vineyards, potatoes, etc. "No tree too high, no field too big for this king of sprayers." All HURST sprayers sold on same liberal No-money-in-advance plan. Write to-day for our FREE Spraying Guide, Catalogue and SPECIAL FREE OFFER to FIRST BUYER in each locality. H. L. Hurst Mfg. Co., 242 North St., Canton, O.

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The Iron Age 4-row Sprayer gives perfect satisfaction. Puts solution just where needed and in fog-like mist. Pump delivers spray under high pressure, thus reaching every part of vine, effectually killing bugs and preventing blight. Has Orchard Spraying attachment. Write for free catalog illustrating this and other Iron Age tools.



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mercial fertilizer, plowing under commercial fertilizer as compared with using it as a top-dressing harrowed into the soil just before planting the crop, heavy and light applications of commercial fertilizers and of fresh and rotted manures, rotted manures turned and unturned while in the compost heap, commercial fertilizers derived entirely from mineral sources and those derived entirely from animal and vegetable sources, and the use of stable manure as compared with commercial fertilizer for sweet potatoes.

The manures and commercial fertilizers were used in connection with green crops turned under. As nearly as possible, the same amount of actual plant food was supplied in the chemical fertilizer as was found in the stable manure. The results briefly summarized, are as follows:

Stable manures always increased the yields, but valued at \$2 per ton did not give as much profit as commercial fertilizer.

Fresh manure spread in winter did not give as much increase as the same amount rotted and plowed down at the same date in the spring.

Turning the manure while rotting was better than heaving it without being turned.

Commercial fertilizers plowed under in the spring invariably gave larger yields than when sowed on the surface just before planting in the summer.

About 750 pounds of commercial fertilizers seemed to be more profitable than three times that amount.

Continuous crops of sweet potatoes on the same land does not appear to be bad practice.

The quality of the crops, cabbage and potatoes especially, grown upon the check plots, was of very poor grade.

The soil on plots heavily dressed with mineral fertilizers does not seem to have been changed or injured any more than where the organic fertilizers were applied.

RABBITS DO DAMAGE.

The usual number of complaints are now being made of rabbits gnawing the bark of young fruit trees. It is practically impossible to keep the rodents off the premises but much can be done by removing all brush piles and rubbish heaps where the animals can establish headquarters. Tree protectors should be provided for young trees during the first few seasons. These are inexpensive and easily applied. Mounding the soil about the trunks of the trees is beneficial here as well as in other ways, and especially assists when the protectors are used. Better avoid using tar preparations. The application of fresh cow manure to the gnawed parts when the sap starts to move often assists trees in living thru experiences of this kind when, without the aid of the material they would likely succumb. Bridge grafting is also recommended, but this practice can hardly be advised for ordinary commercial trees because of the difficulty in doing a successful job. But do not destroy the damaged trees until they have had a chance to grow, since a thin layer of growing tissue will often replace the whole growing surface.

SOME COLD FACTS IN ONION CULTURE.

In an article recently published in an esteemed contemporary, entitled "Good Onions Grown From Seed," we heartily agree with the writer in many points: as to thoro soil preparation, culture, discarding all but fresh and vigorous seed, early sowing, etc.

One point to which we desire to call attention is the following: "No beginner should attempt to grow onions from seed on a large scale." "Practice makes perfect," is an old saw, but nevertheless very true in general and especially so in onion culture. There is a "know how" to the work that can only be gained by practice, and no amount of telling or advising on paper will land the beginner at the goal of success. The writer of the article suggests that a quarter of an acre should be the maximum limit for a grower with no previous experience. Now, I would not set the limit so close as this, but it is best for the novice to look twice before leaping into a large field for the detail of growing a successful crop involves much of labor and forethought and the uninitiated will very likely let many important things slip thru his fingers. This by no means is set up as a bugbear or to discourage any in the enterprise of onion-growing; but rather to counsel moderation and caution against venturing too far on an un-



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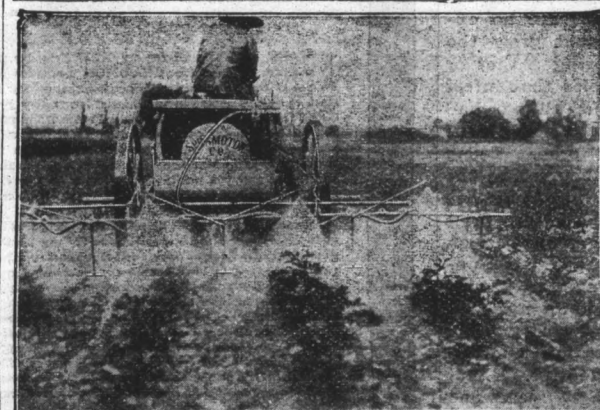
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known sea. It is a profitable crop when well grown, but peculiar in the detail as it seems to require more practical knowledge for successful growing than almost any other ordinary crop.

There is one point in the article, however, with which we cannot agree, and to warn growers of its fallacy was our particular reason for discussing the article. "Once a plot is selected for onions it should be set apart from year to year for that purpose with successive expectations of greater yield. This takes into consideration appropriate annual fertilization. Unlike other crops rotation is not important, unless it be to eradicate some persistent foul weed slowly gaining ground. The safe conclusion is that onions may be planted from year to year on the same ground with impunity." We grant that this was the old theory, and we believe thoroughly well grounded, too. It was the old practice to grow from year to year on the same ground and the successful growers of years ago agreed that with proper culture and fertilization the twentieth crop on the same ground would be better than the first. This, we believe, was true under the conditions of years ago, and it is exceedingly unfortunate for the onion growers of the present day that those conditions have so radically changed. But insect pests and fungus diseases have wrought radical changes in the culture and management of almost every crop, and onions are no exception. Years ago we could grow the apple crop without ever giving a thought or care to the numerous enemies that infest the orchards today. About all we had to do was to plant the trees and at the proper season gather the crop. Today it is a fight for your life to preserve the crop until gathering time, and thus with all crops external vigilance is the price of success. Years ago the onion maggot, its thrips, the smut and rust were unknown quantities in onion culture. Today they are all in evidence and in most localities are getting in their work with a vengeance, and it is generally conceded that the best known preventive, if not cure, is change of location. I recall one extensive seed farm where at one time the largest crop of onion seed ever grown east of the Rocky Mountains was produced, but successive years of growing the onion crop in its various forms induced these pests and diseases until the enterprise had to be abandoned and other fields of operation were sought. So, under present conditions, we cannot grow the crop from year to year upon the same ground and it is unwise to attempt it. While the fact is much to be regretted, rotation is the only safe method and the writer would hesitate to plant two successive seasons upon the same ground.

Wayne Co. J. E. MORSE.

HOW TO MAKE A GOOD STRAINER.

A part of the mixing station that deserves a word of attention is the strainer. Cheese cloth, burlap, or the small brass strainers which are so commonly seen are not what the man who has considerable spraying to do wants to bother with. I do not need to speak of their poor qualities; you know them. A far more satisfactory strainer is made something like this: Make a water-tight box with slanting sides so that it is about fifteen inches square at the top and ten inches square at the bottom. Have a piece of three-inch gas pipe or suitable outlet fitted in at the bottom; then fasten an eighteen or twenty mesh brass wire screen in this box so that it has an angle of about 30 degrees. Such a strainer is large enough to accommodate any sized sprayer and has the advantage of being a self-cleaner on account of the angle of the screen.

Agri. Col., Mich. O. K. WHITE.

MICHIGAN FRUIT GROWERS AT FREMONT.

The present great horticultural awakening in Michigan will be further stimulated by the mid-winter meeting of the State Horticultural Society, at Fremont, Newaygo county, on Tuesday and Wednesday, March 15-16. In place of the usual program of lengthy addresses, all but the evening session will be devoted to the answering and discussing of nearly 100 practical questions that will be printed in the program and most of them will be assigned to practical fruit growers for answers. Much time will be devoted to latest experiences in spraying, including making and use of the lime-sulphur solutions. There will be a fine display of machinery, as well as of fruit. Those who attend will get the most improved ideas right down to date and will secure enthusiasm for undertaking the work of producing another bumper fruit crop this coming season. Drop a card for a program to Secretary C. E. Bassett, Pennville, and then arrange your work so as to attend.

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have overlooked entirely the one most important point—the one thing that absolutely insures even, uniform, exact spreading at all times and under all conditions in which manure is found. No farmer can afford to invest in a spreader of any kind without first investigating this important discovery.

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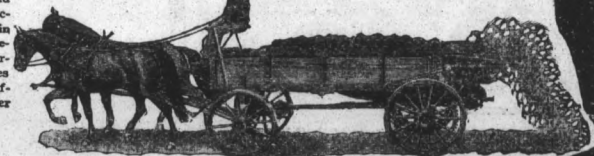
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WESTERN CANADA Senator Dolliver, of Iowa, says: "The stream of emigrants from the United States to Canada will continue." Senator Dolliver recently paid a visit to Western Canada, and says: "There is a land hunger in the hearts of English speaking people; this will account for the removal of so many Iowa farmers to Canada. Our people are pleased with its government and the excellent administration of law, and they are coming to you in tens of thousands, and they are still coming."

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PLANTING AND CARE OF THE ORCHARD.

This was a subject discussed by Prof. Wendell Paddock, of the Ohio State University, at the Round-Up Institute last week. Prof. Paddock expressed his preference for two-year-old trees which can be trained as desired from the start. He illustrated his talk by showing how he would prune the young trees, of which he had several specimens, the first, second, third and fourth year, at which time he would have the foundation laid for all future pruning, by having the head of the tree properly formed. He would head the trees down close to the ground and then prune so as to leave four or five main branches, so located as to leave no crotches which might split and thus injure the tree. These main limbs he would head back to a length of about 14 inches so that other branches would occur low down, using judgment at all times to have them properly spread, and in future pruning would keep the ends of branches well cut back so as to form a compact but low tree, easy to work upon in spraying and picking. Proper root pruning was also mentioned as an essential in preparing trees for planting. This was emphasized in a lecture given by Prof. Paddock in the evening, following his first talk, which was illustrated by stereopticon views. In this lecture his subject was, "Training Fruit Trees," and his talk included the proper training of older trees as well as young trees upon and immediately subsequent to planting and to which the same principles are applicable, except that each individual tree presents a problem by itself which must be solved by the exercise of the judgment of the operator.

FREE SCHOLARSHIPS FOR EVERYBODY Rochester, N. Y., March 2, 1910.—The Directors of Franklin Institute, today voted to prepare candidates for the next Railway Mail Clerk Examinations free of charge. A postal, containing the applicant's name, addressed Dep't R 48, is sufficient application.

CATALOG NOTICES.

Sweet Peas Up-to-Date is the title of an 80-page book published by W. Atlee Burpee & Co., of Philadelphia, Pa. It is destined to give both amateur and professional the benefit of their more than 20 years' experience in growing this favorite flower at Fordhook Farms.

Ernst's Nurseries, Moscow, Ohio, publishes a fine 32-page catalog, precisely illustrating and fully describing their large line of fruit tree and vines, ornamental shrubs, etc.

Ellwanger & Barry, proprietors of Mt. Hope Nurseries, Rochester, N. Y., are sending out a new general catalog of 100 pages. This is a large and comprehensive catalog, fully describing and illustrating many of the fruit and ornamental trees and shrubs listed by this company.

D. M. Ferry & Co., Seedsmen, Detroit, Mich., are publishing a 1910 seed annual of 100 pages, fully describing and illustrating their complete line of farm, garden and flower seeds. No Michigan home should be without this catalog.

German Nurseries and Seed Houses, Beatrice, Neb., are publishing a catalog book of over 100 pages, describing their full lines of seeds, plants and trees. The booklet is all its name implies.

Woodbine Nurseries, operated by W. A. Allen & Sons, Geneva, Ohio, F. D. 3, send an illustrated catalog showing their lines of shrubs, roses, grape vines, small fruit and ornamental trees.

How to spray, when to spray, and what sprayer to use are some of the things told in the handsome catalog of the Goulds Mfg. Co., Seneca Falls, N. Y. This catalog is printed in colors and shows a full line of hand and power spraying outfits, manufactured by this company.

The Elkhart Carriage & Harness Mfg. Co., of Elkhart, Ind., have issued a new booklet for 1910, which illustrates and describes their line of vehicles and harness and tells about their direct selling plan.

Thorburn's high class seeds are listed and their products described in the profusely illustrated 144-page 1910 catalog of J. M. Thorburn & Co., 33 Barclay St., New York, N. Y.

Wm. Galloway & Co., Waterloo, Iowa, are sending out a new 90-page catalog describing the large line of farm machinery and implements, gasoline engines, etc., manufactured by this well known company and sold direct to the consumer. Every farmer should have this catalog which lists practically everything needed for the operation of the farm.

The Electric Wheel Co., Quincy, Ill., publish a 50-page illustrated catalog showing their line of goods, including steel wheels and wagons, farm, log, and lumber wagons of all sorts, special wheels and trucks, etc.

The Bateman Manufacturing Co., of Grenloch, N. J., manufacturers of the well known "Iron Age" farm and garden tools, have just issued their 1910 catalog describing this standard line of implements—Michigan Farmer.

The Chicago common council passed an ordinance prohibiting bakery establishments from locating in basements, and also commanding that they provide proper sanitation.



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