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FARM NOTES

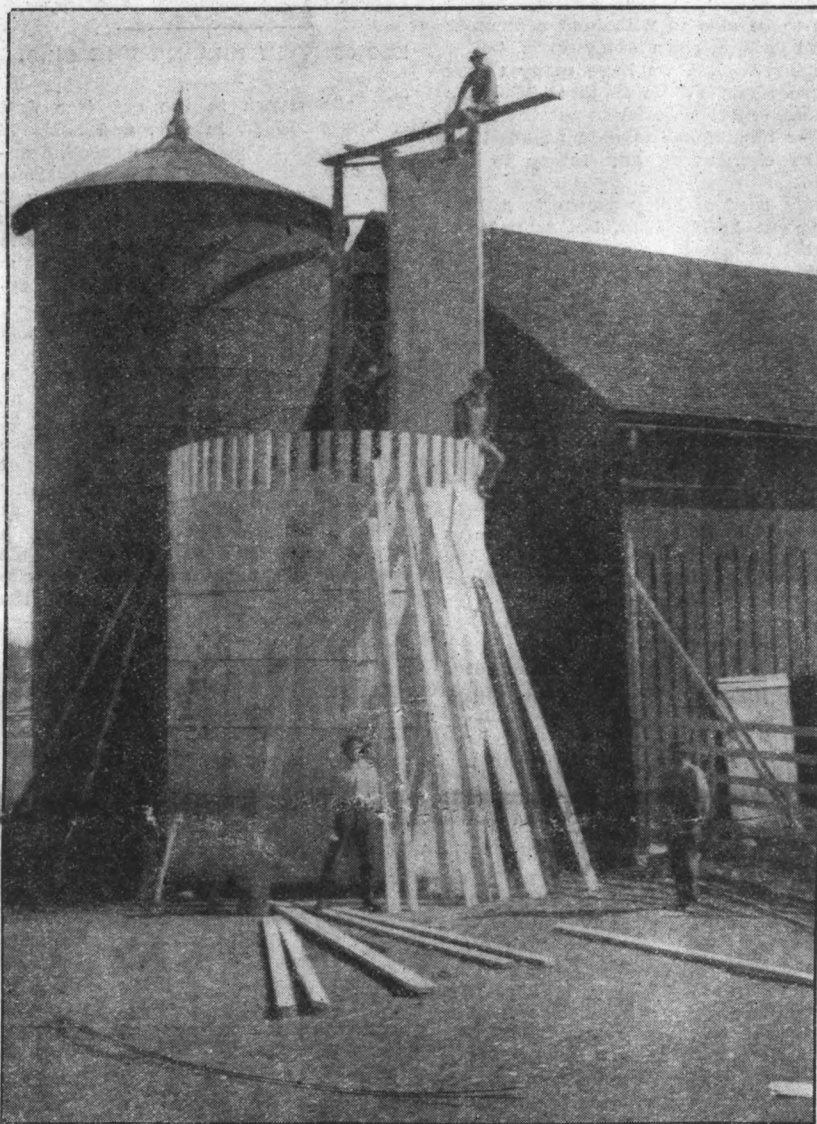
Farm Buildings and Equipment.

Any discussion of this subject, if it is to be of the greatest value to the average reader, must take into account the conditions which are apt to prevail upon the average farm. Most Michigan farmers are not starting the farm plant new, but on the contrary, have more or less permanent buildings on their farms, as well as such equipment as is absolutely necessary for the growing of the ordinary farm crops. For this reason the problem, particularly as it relates to farm buildings, must be studied by the average reader with a view to the improvement of the present plant, rather than to the ideal which would be followed if an entire new plant were to be built. In this study of what must be an individual problem in each separate case, the first essential is adaptability of the buildings and equipment to the particular line of farming to be followed, while convenience and economy in the doing of necessary work is a close second as a factor which makes for good management in the arrangement or improvement of the farm plant and in the providing of proper equipment for the operation of the farm.

But this does not simplify the problem for the average farmer. In fact, it makes it more difficult. It is not nearly so great a task to plan a new building that would approximate the ideal as it is to remodel old buildings to approach the ideal in these essential points. But it can, in most cases, be done at far less expense than would be required to build new from the ground up, and the time and thought expended on the problem will be well invested. The writer wrestled with this problem of rearranging his farm barns long and unsuccessfully before he hit upon a plan which was satisfactory, but the result finally attained fully compensated for the effort expended in the added degree of efficiency and economy secured, and the changes made have paid a dividend in this way which has not only exceeded the interest on the investment required, but has as well easily wiped out the investment itself during the first ten years after the remodeling was done.

But it would not avail to recount the problems met with nor the methods followed in their solution, since they would not be the same as the problems which would confront the average reader in the making of needed alterations or improvements in his farm buildings. There are, however, some essential points which may be mentioned which will apply to a sufficient proportion of these cases to prove helpful to the average reader.

One of the most important of these essentials is the making of such alterations in existing barns as will permit of the use of modern equipment for the handling of hay and grain from the wagon to the mow. In case the buildings need a general remodeling, it would be well to plan on making such needed changes at the same



An Economical Method of Erecting a Stave Silo. (See description on page 170).



Filling the Silo on the farm of Jake Lefingey, of Macomb Co. (See "Economy in Filling the Silo," page 170).

time, but in case such a general improvement is to be delayed for any length of time, it will pay to make any needed alterations for the installation of some labor saving device for this purpose at once. The old-fashioned timber frame barn with its purline beams right in the way has deterred many farmers from installing a device for this purpose. But this should not be allowed to stand in the way of such an improvement. These purline beams can be safely cut out after properly bracing the frames in some other manner, and the comparatively small investment required in making the change and in installing some one of the many modern devices for the unloading of hay and grain will save much expensive hand labor, and make it possible to rush the work of getting in the crops, with a possible large saving in their quality in many cases.

Then there is the question of water for the stock, which is a most important and frequently neglected improvement which need not require a large expenditure. In his younger days the writer passed through the experience of drawing water from an open well, with two buckets attached to a chain which ran over a pulley hung above the well. A good hand-pump seemed like a great improvement after handling that wet chain in the frosty winter days, but the labor of pumping water for stock by hand is no small item and in most cases the stock will often suffer for the lack of water when it is supplied them in this manner. Later a windmill was erected and water was more easily supplied in a large tank at which the stock was watered or from which it was carried in pails to stables and pens in which stock were kept that did not have access to the tank. This was a much pleasanter task, but was still hard on the stock which did not get its supply of water automatically. To overcome this difficulty, pipes were laid from the main supply tank and drinking fountains were placed in all stables and yards where stock was kept. The expense was not large, as the labor was done with the regular farm help, but the results were most satisfactory. This is an improvement which is needed on a majority of farms, and which should be one of the first things to be done in the bettering of the farm plant. It is not an expensive improvement, and by making the drinking basins of concrete the work will be permanent, and the investment will pay a very large dividend in the benefit to the live stock maintained on the farm.

Another improvement which is badly needed in most farm barns and stables is more windows. It is not at all difficult to find stables in which stock is kept throughout the winter without a single window in them and in far the larger proportion of the stables to be found in the older barns there is nothing like adequate lighting. Sunlight is the first essential of stable sanitation, and pure air is the second. If no better means are provided for the ventilation of the stables it

can be accomplished through the medium of the windows, but this is neither a satisfactory nor an economical method, and while the new windows are being installed where needed it will pay to provide for ventilation at the same time. In many of the more modern barns which are now being built the fresh air intakes for the King system of ventilation are the opening on the outside of the stable made right in the window frames, with at the bottom of the frame and that on the inside at the top of the frame. Then, by providing a main ventilating shaft for the removal of the bad air in the stable, adequate ventilation will be provided for at small expense. But if the King system is not installed, the windows may be hung to swing in from the top or out from the bottom and provide for a degree of ventilation that will be beneficial to the stock confined in the stables, although such ventilation will be secured at the expense of a lowering of the temperature of the stable to a greater degree than by the King system.

There are many other needed improvements about the barns and stables that can be made quite cheaply with the home labor, such as the laying of concrete floors in the stables, the building of concrete water tanks, etc. Another improvement in connection with the barns and stables which is sorely needed on the average farm is a more convenient arrangement of yards and small lots about the barns and stables. The sheep yards, particularly, should be large enough to provide for an adequate amount of exercise for the breeding flock, and there should be paddocks into which the horses can be turned and small barn lots for convenience in handling the calves, the brood sows and other farm stock. In fact, there are so many ways in which the average farm plant could be improved at small expense, that it is difficult to determine why the average man puts off the making of many improvements until such time as he can see his way clear to remodel the farm plant entirely, and it has been with the hope that the direction of Michigan Farmer readers' attention to a very few of the many essential things which make for utility, convenience and economy in the portion of the farm plant mentioned might lessen this general tendency that the above has been written.

Preparing for Alfalfa.

I am a steady reader of the Michigan Farmer and expect to be as long as I can read, for it is the most loyal paper I ever saw to the ambitious farmer. I have two acres on which I want to try alfalfa. This plot was cleared about 15 years ago, and is a clay loam with heavy clay bottom and with average care has grown over 300 bu. of potatoes per acre. I plowed down a good sod, part clover. The next spring worked it well and planted to corn, keeping it clean. Last spring I plowed and made a good seed bed for potatoes and kept it clean again. Before plowing the last time I applied a good covering of manure. Next spring I want to plow the manure up, work it up fine and try alfalfa. Should I sow a light seeding of spring wheat as nurse crop, or is oats better? Or do you advise sowing alone. I never have lost a catch of clover on this land. Do you think it best to inoculate this plot with pure culture, or try it as it is. If so, please advise me where to get the pure culture. Where can I get good hardy seed close at home? I am after alfalfa and I am going to get it before I quit.

Osceola Co.

L. V.

From the description it would appear that this land should be in fine shape for alfalfa. The plan which it is proposed to follow in fitting it for the alfalfa crop is a good one, providing the soil is well firmed after plowing so as to provide a good seed bed for the alfalfa. In case a nurse crop is to be used it is perhaps as good a plan as could be followed, but if the case were the writer's he would disk or cultivate this potato ground instead of plowing it, for the reason that the cultivation of the potato crop has killed the weeds in the surface soil pretty thoroughly, and the young plants will be crowded by weed pests less than would be the case if a fresh supply of weed seed were turned to the surface where they could germinate and grow, on an even basis with the alfalfa plants. However, if the land is plowed early and worked for a few weeks to secure a good seed bed many of the weed seeds that would be turned up will have germinated and the young plants destroyed before the alfalfa is sown.

While it is possible that inoculation will not be needed on this land there is no certainty of it, and it would be the safer plan to inoculate either the soil or seed with the bacteria peculiar to the alfalfa plant. If there is a field of alfalfa successfully established within reach of you the best method of inoculation would be to get about 300 lbs. per acre of the

soil from such a field and sow it on this land when it is being fitted. This soil should be sown on a cloudy day and immediately harrowed into the surface for best results. If this is not practicable, however, it will pay to inoculate with the pure culture. This is provided at a nominal cost by the bacteriological department of the Agricultural College for experimental purposes, and is a liquid which is applied to the seed.

Regarding the nurse crop, opinions vary as to the better plan to follow. If it is desired to sow the alfalfa seed comparatively early in the spring the best authorities recommend the sowing of a light nurse crop, which is cut for hay before maturity. Beardless barley is generally recommended for this purpose because it does not grow a heavy straw and does not draw heavily on the soil moisture. Spring wheat might be just as good. In favorable seasons many Michigan growers have allowed the grain sown for a nurse crop to mature and harvested it without apparent injury to the alfalfa, which seems to be able to withstand a summer drought where sown early even better than clover. But we have many things to learn about alfalfa in most Michigan localities, and it is better to cut the nurse crop for hay, if one is used at all, than to take chances on any injury to the alfalfa.

Alfalfa seed is being grown to a limited extent in Michigan, but is not yet available in quantities outside the neighborhoods where it is grown. The best one can do at present is to buy of responsible dealers who sell northern grown seed, several of whom advertise in the Michigan Farmer.

Amount of Alsike to Sow.

Please advise me through the columns of your paper as to the proper amount of alsike clover seed to sow on a black clay loam to insure a good catch. I have never raised any alsike and would like to seed 20 acres after oats this spring.

Lena-wee Co.

SUBSCRIBER.

This is a question upon which farmers disagree as widely as they do upon the rate of seeding for best results with other crops. Alsike seed is about one-half the size of clover seed. In the writer's opinion four quarts per acre is sufficient for this kind of soil, although some seed more heavily than this where alsike is sown alone. The heavier the seeding the finer the hay.

Sowing Alsike on Dry Soils.

I would like information on sowing alsike clover on high sand and gravel soil and the time and way of putting it on the ground.

Barry Co.

A SUBSCRIBER.

While alsike clover can be profitably made a factor in the mixture of grasses to be sown on high, open soils, it is not well adapted to growing alone on such soils. It needs a rather moist soil for its best development, and while it is hardy on high and open soils, it will not grow large enough to make a heavy crop. It may be more profitably used in a mixture with June clover, using about one-third or one-half as much alsike as clover seed. Used in this way it will help the quality and yield of hay or pasture. Grass seed should be harrowed or drilled into the soil on this kind of land for best results.

AN ECONOMICAL METHOD OF ERECTING A STAVE SILO.

During the past year a large number of silos have been erected in Michigan and in all probability a good many more will be put up this year. In view of this I thought an illustration of how we erected a stave silo might be interesting and instructive to your readers. The picture was taken on the farm of C. K. Farley, of Lapeer Co., last September, while the silo was in process of construction. All the other new silos I saw last fall were incased in a scaffold put up at considerable expense and labor. We found that the scaffold was quite unnecessary.

The door frame was first fastened together, raised into place and securely fastened. Then we started on either side of the door frame putting the staves in place. There were five men working, one carrying staves and two on ladders at the top of the staves to fasten them in place as the other two placed them. The staves were fastened together by means of barrel staves nailed on the inside and were braced on the outside with boards every four or five feet. The two sections met on the opposite side and we had only the ordinary amount of trouble getting them in place and the first hoop on. Five hoops were put in place, the top ones being left rather loose. We then started on the top half, working only one way. The staves being all in two lengths, 14 and 16 ft., made the work easy. The man at the

top had the easy job, having to drive every other stave into place and fasten them all together, as on the lower half.

The work was started at seven o'clock in the morning and the photograph was taken at noon. At 10 minutes to six the staves and hoops were all in place and as tight as we could get them. The top was not put on until after the silo was filled.

This seemed to us to be an easy, cheap way and we know a quick way of putting up a silo. Two of the men had had experience in putting up a neighbor's silo a few days before but experience is not necessary. Nearly any one could do it, and we think it is away ahead of the other method. We tried that on the other silo shown in the picture.

This method of putting a silo into place will save a lot of work this coming year if used throughout the state, and we all know that the farmer can stand that. The scaffold cannot be used in painting the silo but that can be done nearly as quickly from a 30-ft. ladder.

Lapeer Co.

F. A. FARLEY.

ECONOMY IN FILLING THE SILO.

The silo shown in the cut (see first page) is 14x26 ft. in size, and holds 74 tons. I have an eight-horse gasoline engine and a half interest in a large ensilage cutter. Two men cut the corn, drew it and run it through the cutter into this silo in 4½ days, with a third helping the last half day. Six acres of corn filled the silo. We cut it with a corn binder, cutting twice each day, morning and noon. The corn was hoed by hand, so there is not a weed in the ensilage.

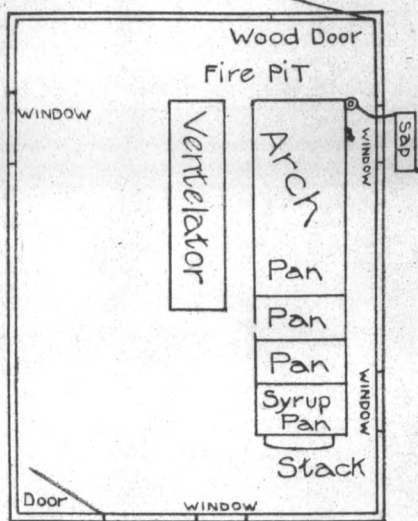
The total cost of filling this silo, aside from the labor above mentioned, was as follows: Gasoline, \$2.50; 30 lbs. twine at 8c, \$2.40. This made the total expense of filling the silo \$4.90, aside from a total of about 10 days' labor and 4½ days for one team, which might be charged up at current local prices, although the help was that regularly used on the farm. We have used this outfit and filled our silo by this method for three years, with the same economy and good results.

Macomb Co.

JAKE LEFINGEY.

THE SUGAR HOUSE AND ITS EQUIPMENT.

In reply to inquirer from Tuscola Co., "Problems in Maple Sugar Making," I would say that if soft coal is used for fuel grates would be necessary. Several manufactured evaporator arches would handle soft coal or wood, or both together, and my impression is that coal and wood mixed would make a dandy heat for evaporating. If you are using a home-made arch, see that the ash pit is good and deep, say 18 or 20 inches below the grates,



Relative Position of Arch and Ventilator

and full size of grate surface, built up of brick, stone or cement. Have good damper to ash pit and good, tight fire doors.

It depends some on the size of the evaporator as to the correct size of sugar house. A 3x12-ft. arch would work nicely in a 12-18-ft. building, with 6-ft. sides and half-pitch roof. Set arch about 24 inches from one side, so as to have the working side of pans near center of floor. Put ventilator in the peak, say 20 inches wide and two-thirds the length of arch, in line with firing end of same, as 70 per cent of the evaporating is accomplished on the front half of arch. The object of placing arch between wall and ventilator is so the drip from condensed steam will not fall in pans.

Montcalm Co.

M. J. NEWSOME.

ANOTHER VIEW OF "UNNOTICED AND NEGLECTED THINGS."

The article in the Michigan Farmer of Feb. 4, by L. J. Bradley, was to the mind of the writer, well worthy of careful consideration. The purpose of this article is not to combat Mr. Bradley, but to "Second his motion," with additions. However, I must, in part, disagree with him in advocating the common use of the pocket memorandum on the farm. It is surely better to keep track of needed odd jobs by the use of the pencil, and attend to them than to forget and neglect them, but I must strenuously object to the idea of depending largely on the memo. For young men especially the cultivating of memory is quite as important, to my mind, as the cultivation of growing crops. The memorandum may well be used, like quinine pills, as a necessary evil, to be resorted to in an emergency, but for every-day use I would much sooner, as a principle, counsel the improvement of memory by using the memory.

I fully agree with Mr. Bradley, that the average farmer works too many hours, and if this is true of the farmer is it not fully as true of the average farmer's wife? But perhaps it is not so much that either work too many hours in a day, as too many days in a year. I am not offering this as a suggestion to the farmer to attend every auction within ten miles or every circus that comes to town, even though he takes his family with him. There is reason in all things—a good, healthy, medium ground on which it is well for all to stand. The farmer and his wife, (especially the wife, for her duties are more monotonous than his), need to get away sometimes—out of sight of the daily sound of home duties and, if possible, forget for a few hours, a day, or a week, that there is such a thing as work. I am not overlooking the fact that with the difficulty of obtaining reliable help, (perhaps that word reliable is nearly superfluous), it is in many cases difficult—not to say impossible—to take these little vacations, especially for the wife and mother, without serious neglect of home affairs. But how shall this difficulty be overcome?

We can have good tools and implements; we can keep our eyes open to see that our wives are properly provided with labor-saving devices which, if they only save a little time each day, will mean a great deal in ten years to an overworked woman. But it is not my purpose to encourage reckless investments in all the new-fangled fixings that are offered on the market as wonderful labor-savers. It requires good, level headed judgment to properly discriminate between articles that are of practical utility and those that, like the peddler's razors, "Were not made to shave but to sell."

We, and our wives as well, can carefully plan our work—try to make every step count—try to see where lies "The golden mien," and ask (and if necessary, demand), of our children—the girls as well as the boys—such assistance as it is proper for them to render, and no more. We should aim to do our work well, without being "fussy" and if, after all, work still piles up faster than we can take care of it—why, let's just do the best we can.

Is it not a fact that many of our farmers are making a mistake in overloading themselves, (and their wives as well), with work and care in an undue effort to add to their possessions, property that they or their families do not really need? However, I am not advocating that any farmer, if such he may be called, should settle down in perfect contentment on a few acres of land, or a larger acreage of poor land, and eke out a bare existence for his family, while the busy, hustling world goes hurrying by, leaving him and his family farther and farther in the rear.

"All should seek the golden mien
And live contentedly between
The little and the great."

Among the "Unnoticed and neglected things on the farm," too much can hardly be urged concerning the care of farm implements. But it may seem like singing a worn-out song to mention the many farms on which implements, all the way from a corn marker to a binder, may be seen at all seasons standing exposed to the elements, and who among is fully prepared to answer "not guilty?"

Another among the neglected things on too many farms, is some systematic plan of book-keeping. Brother Farmer, was your education along this line so entirely neglected that you feel that you are hardly prepared to properly perform this work? If so it is the best reason in the world why you should see that your son's education is not similarly neglected. Then, Kalamazoo Co. L. H. STODDARD.

HOW POTATOES ARE GROWN IN ST. JOSEPH COUNTY.

I have been much interested in the discussion in the Michigan Farmer, of the method of raising potatoes which Mr. C. C. Lillie writes about and Mr. Jason Woodman talks about at the farmers' institutes. Mr. Woodman was over to our town last week and explained his methods and I have decided to write this article because our way of growing potatoes is so different. Now, over here at Burr Oak we have grown some potatoes for the last 30 or 40 years and have experimented in many ways, and while we have not always succeeded in raising so large crops as Mr. Woodman and his neighbors, we have succeeded in gaining a reputation for quality which has caused Burr Oak potatoes to sell for higher prices than those from other places.

We raise potatoes for the early market while Mr. Woodman and Mr. Lillie raise them for the late market or store them in pits or cellars. Our crop is nearly all drawn directly from the field to the car and goes to market the last of August or first of September, or as soon as they are ripe enough to handle without peeling. In nine seasons out of ten the prices are better for early potatoes and we save the cost of storage and loss by shrinkage, freezing and rotting and we have found that a good crop of wheat can be grown after potatoes dug with a digger with but little labor as the ground only needs harrowing once or twice and drilling. Mr. Woodman and his neighbors raise Rural New Yorkers, or some variety of that kind, while we raise Green Mountains or Delawares. We found that the Rurals were a later potato, that the skin was too thin on them to handle well if not thoroughly ripe, and that they were not mealy when cooked, if they were the least bit green, and also that they did not sell as well as some other varieties.

Our method of preparing the ground for potatoes has been to cover the clover sod with manure from the stables during the fall and winter and plow the ground early in the spring, but I think Mr. Woodman's method of covering the ground with manure the year before it is plowed is a better one. Mr. Woodman told us that they do not plant the same field to potatoes oftener than once in seven or eight years, while we often plant the same ground to potatoes every four or five years, and I think we would get better yields if we did as he does on this point.

There are many different kinds of soil in the vicinity of Burr Oak, from the low, heavy beech and maple timber land to the higher, lighter soil that was covered with scrub oak, and we who live on the higher, sandier soil have to use care in selecting seed potatoes. We usually try to get seed from the lower, heavier land and prefer new ground and late planted potatoes. We do not select by picking out single potatoes of a certain size or by taking hills that have a certain number of good-sized potatoes in them, but we select whole fields, that is, we get seed potatoes from those fields which yield the largest number of good-sized and good-shaped potatoes and if any of the potatoes show a tendency to be run out or grow long they are sorted out and not planted.

We cut our seed potatoes with one or two eyes in a piece and try to get a good sized piece of potato with the eye as near the middle as possible, while Messrs. Woodman, Lillie and others plant whole potatoes about the size of a hen's egg and weighing about three ounces. As we get large potatoes for seed it often happens that the pieces with one eye on are larger than the whole potatoes that they plant.

We plant our potatoes in hills two feet nine inches apart each way, and use six or seven bushels of seed per acre, while they plant theirs one foot apart in rows three feet four inches apart, which takes about 25 or 30 bushels of seed per acre, which would be quite an item of expense if seed potatoes were a dollar a bushel, as they often are here. We have found that whole potatoes planted the last week in April or the first week in May, (the usual time of planting here), would start a sprout from nearly every eye and the result would be a large growth of vines and if the season was dry a crop of undersized potatoes, but Mr. Woodman told us that whole potatoes planted in June would start a sprout from only two or three eyes next to the seed and we have noticed that the eyes near the stem do not grow as quickly as those near the seed end. We have also found out that the amount of moisture in the ground at the time the potatoes are setting has a good deal to do about the number in a hill

and in ordinary seasons one or two eyes in a hill will start as many potatoes as our soil will bring to marketable size.

I will conclude by giving the story of a crop of potatoes grown last year on a small lot back of my cousin's blacksmith shop in the village of Burr Oak. These Green Mountain potatoes were planted about the middle of May, one or two eyes in a hill, two feet nine inches apart each way and were cultivated only twice. The vines grew to three or four feet in length and covered the ground and the root stocks with the potatoes on grew each way until they met in the space between the rows and further cultivation was out of the question. On several occasions in the fall we dug and weighed several average hills that yielded from six to 10 good-sized potatoes and figuring 36 hills to the square rod they yielded over 300 bushels per acre. Now, the most remarkable thing about this crop of potatoes was that this was the 14th year this lot had been planted to potatoes, and was the best crop of the 14. The secret of this large yield was that the ground was low enough to be moist all the time and that it was near a stable from which the manure was scattered over it during the fall and winter.

This proves conclusively to my mind that the fertility of the soil and right amount of moisture have more to do about growing large crops of potatoes than the size of the potatoes that are planted, whether cut or whole, and so I say to Mr. Lillie, if you want to raise 200 or more bushels of potatoes per acre, get your land fertile enough and keep it moist enough and plant whole potatoes if you want to, or one or two eyes in a hill and you will succeed just the same. For my part I cannot see the benefit in raising more potatoes when the price is so low now. If we raised fewer the price would be higher and we would get the same amount of money and not have so many potatoes to handle.

St. Joseph Co.

R. BORDNER.

MY WAY VS. THE WAY.

The controversy now on regarding selection of seed potatoes grew out of the state sending out a man to instruct in farmers' institutes who, instead of instructing along the broader line of well established principles, and well tested methods, contented himself with giving "my way." It seems to me that we have reached the time where "my way" should give place to "the way" as established by unquestioned tests and evidence. The items that enter into potato culture: e.g., selecting seed, cutting seed, planting, rowing, hilling, cultivating, spraying, treating, have all been tested out at our experiment stations, not only hundreds, but thousands of times. Now, should not the average results obtained by these numerous tests as touching any one item of potato culture, be given more weight than the "my way" of any man, where his way differs from such results? We must admit that there is a "the way" as regards each item in the culture of any plant. It is at this "the way" that the work of these stations is aimed, and after 50 years of continuous effort they should be able to speak with very much authority on any of these cultural items. If the preponderance of evidence furnished by these institutions is to have no more weight than the "my way" of this or that man then they are surely not worth the price we are paying for them and the sooner they are sold to the junk man the better.

What I mean by "average results" and preponderance of evidence is well illustrated by a bulletin I have just read in which results of 6,394 tests of fertilizers on corn plants have been collected and the average results given. Now, is not the average results of so large a number of tests of great weight and importance than the few tests that can be made by any one man?

To show the wide difference in doctrine of the "my way" talkers I wish to give some of Mr. Tyler's of five years ago and Mr. Woodman's of last year.

1. Tyler said, select your seed from best seed hills at digging time. He told of the increase of good seed hills from 14 per cent to 71 per cent in five years on his own farm, with substantial increase in yield per acre.

Woodman said hill selection of seed had been tried out and there was nothing in it. Said plant small potatoes.

2. Tyler said, cut seed to two eyes and plant one piece in a hill. Woodman said plant small potatoes whole.

3. Tyler said, treat seed for scab by soaking one to one and a half hours.

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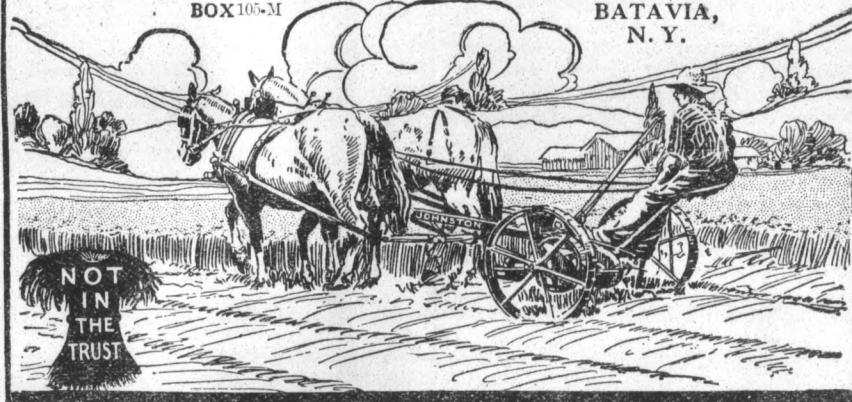
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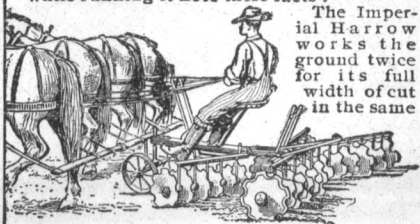


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The Imperial Harrow works the ground twice for its full width of cut in the same

time it takes the old style harrow to do it once. Four horses hitched to an Imperial will do twice as much work as three horses with an ordinary harrow.

The specially designed, scalloped blade cuts to greater depth and more perfectly pulverizes the soil. The flexible frame lightens the draft and leaves a perfectly level seed bed.

Write for all the facts about the Imperial double disc Harrow, and we will send you some printed matter that we know will be of value to you. Write to-day.

The BUCHER & GIBBS PLOW CO.
806 E. Seventh St., Canton, Ohio

A Remarkable Fuel Saving Farm Engine 15 Days FREE

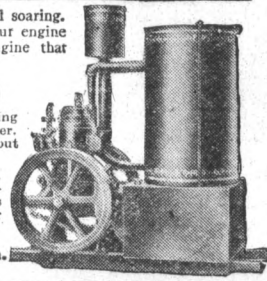
GASOLINE is way up now, from 6 to 16 cents more than kerosene, and is still soaring. The big automobile demand is responsible for it. What will you do if your engine won't run on kerosene? Better be on the safe side. Better own an engine that will operate on either kerosene or gasoline.

Record Breaking PERFECTION Kerosene Engine

The PERFECTION does what no other engine can do. It vaporizes kerosene, drawing slight mist through the carburetor so that it has the same force as gasoline in the cylinder. The Perfection is light, portable, has only three moving parts, runs everything about the place, operates on any engine fuel, is priced lower than others of the same size.

15 Days' Free Trial You can have one of these engines for 15 days' free trial. Call on your dealer, ask him to show you the "Perfection." He'll let you use one on your farm for 15 days and if you find that it is not as represented, we will refund cheerfully every dollar paid for it by you. Ask for our Free Engine Book or if your dealer does not carry the "Perfection" write to us direct.

Caille Perfection Motor Co., 210 Second Ave., Detroit, Mich.



The Surest and Cheapest Way to Increase Crops

Your soil must contain a certain amount of lime to produce the best crops. Lime, you know, is a mineral food.

Agricultural Ground Limestone is the surest method of increasing the quality of your soil—increasing crops. It neutralizes poisonous acid and makes it harmless. **Agricultural Ground Limestone** becomes a part of the soil itself. Thus it sweetens it, and puts new life into over-worked soil. Yet the cost of Agricultural Ground

Limestone is almost nothing. It is the cheapest fertilizer known. No farmer can raise the best crops without its help.

How to Test Soil.

Write today for prices and our free Booklet. It tells how you can know whether your soil needs liming. Write now—this very minute—before you forget. Just address.

NOBLE & COMPANY,
2 First Street, Detroit, Mich.

When writing to Advertisers mention the Michigan Farmer.

Woodman said, soak 40 minutes. M. A. C. circular says 2½ hours.

4. Tyler said, plant in squares 32 inches apart each way.

Woodman said, plant in rows three feet apart and 12 to 14 inches in the row.

5. Tyler said spray the upper side of leaves for blight.

Woodman says, you must spray the under side to do any good.

6. Tyler said he raised 300 bushels per acre.

Woodman said he raised 300 bushels per acre.

7. They agreed, however, that the ground should be plowed.

The Montcalm Farmers' Institute is to be held during February and the potato growers are lying awake nights for the advent of the third wise man from the southwest and wondering whether he will tell us to plant baked small potatoes or large ones boiled with the jackets on.

I hold that both Tyler and Woodman did more damage than good when they gave specific rules or suggestions for rowing and hilling potatoes. I followed Tyler and on very strong soil raised stock too coarse for market. My neighbor last year followed Woodman on rather weak soil and raised plenty of "small potatoes," (for seed). Whether I am to plant 5,000, 7,000, or 13,000 hills per acre depends entirely on the strength of my soil, the general character of the stock I wish to produce, and my cultural methods. There can be no specific rule to govern this item. The grower must know his soil and row and hill to fit its strength.

The selection of seed and spraying for blight are items of a different character. It is self-evident that one of these men is in error with respect to the application of spray for blight. They cannot both be right. The same is true of the selection of seed. One must be the better of the two ways advocated by these men. Possibly there is a way better than either.

Montcalm Co. C. W. CRUM.

SOFT COAL IN SUGAR MAKING.

In answer to the inquiry in the issue of Feb. 4 on problems in maple sugar making I will give my experience.

We use soft coal along with wood in our arch. We have a fireplace about 12 ft. long and five ft. wide, made of brick with a big chimney at the rear end. For the front end of this arch we took some grates out of a steam engine, but old pieces of gas pipe will do. Our grates are about six feet long. The rest of the way back to the chimney is solid brick work, the sides being about 1½ ft. higher than the grates. Then our supply barrel sets on the right hand side with a pipe running from the bottom of the barrel down level with the grates, then back towards the rear end of the arch, then into the arch through the side and to the front end and out into the pan. This gives the sap time to warm up before it goes into the pan.

For the shanty build a house about 16x20 ft., or larger if wanted. Instead of joining the rafters at the top leave a space about 1½ or 2 ft. wide for steam to escape. Have rest of shanty steam-tight.

Tuscola Co. C. VAN PETTEN.

FERTILIZER FOR BEANS.

I have seven acres of sandy land that needs fertilizing. I sowed clover last spring but dry weather made it a failure. I want to plant beans, followed by wheat, and would like to know what kind of fertilizer I shall need.

Missaukee Co. E. J. F.

A standard grain fertilizer containing a little nitrogen and potash and an abundance of phosphoric acid would be most suitable for beans on this kind of ground, using from 200 to 400 lbs. per acre. The results secured from it would, however, depend somewhat upon the weather, as it is probable that this field is deficient in humus, and in order for the plant food in the fertilizer to be available for the growing beans it must be held in solution by the soil water where the roots can absorb it. On a loose soil which has been allowed to become low in its content of vegetable matter, the first drought is likely to affect the growing crop, and where fertilizer has been used it is sometimes condemned, when the fault is wholly due to the poor mechanical condition of the soil. For this reason it is always a better plan to adopt some plan which provides for the early seeding of fields which are deficient in humus, even if the clover has to be sown alone without a nurse crop to insure a stand, instead of further cropping them and thus further reducing their content of humus.

fertility the corner stone

OF AGRICULTURE. The modern idea of plant feeding applies to everything the soil produces. Take, for instance, our fruit growers in this section. How many of them are using commercial fertilizers on their orchards? Only the large and prosperous growers make it a practice to properly fertilize, and they profit by it. The climatic and other conditions in Michigan and Indiana are ideal for fruit culture; still the quality of fruit is greatly deteriorating because the soil lacks the required supply of plant food to grow abundant crops of the highest quality. In New York and other Eastern States the fruit growers fertilize heavily. Every farmer will be found to have a stock of good Commercial Fertilizer stored in his barn and will use it whenever he thinks it necessary. He no longer looks at the cost, because he has learned from experience that

fertilizer is a good investment.

Why is it that heavy shipments of fine fruit were made from New York State to Michigan last Fall? Because here was a good market and local supply was lacking. One of the largest and most successful fruit growers in Northern Michigan wrote under date of November 1st, 1910, as follows—"I had the fertilizer drilled in the orchard when the peaches were about half grown and it was very beneficial to the development of the fruit."

We shall be pleased to hear from every farmer who may be interested in Fertilizer for all crops. Our Fertilizers are just right kind to furnish the plant food required for growing maximum crops. Our experts have given special attention to the crop-making qualities of our Fertilizers because we realize that the farmer judges the Fertilizer by its productiveness. One of the best authorities on agriculture and fertilization says:

"Commercial valuation bears no relation to the agricultural value of a Fertilizer. That is measured by the increased yield of crop due to its use."

If we have no agent near you, we want one. This may mean a good business for you. Write us for our proposition.

The American Agricultural Chemical Co.,
Detroit Sales Department. DETROIT, MICH.

Largest manufacturers of high grade Fertilizers in the world.



Elkhart Vehicles and Harness

have a world-wide reputation for high quality and our prices have made them famous.

THIRTY-EIGHT YEARS'

experience selling to the consumer means success. We ship for examination, guaranteeing safe delivery, satisfaction and to save you money.

Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons, farm wagons, and harness.

May we send you large catalog?
Elkhart Carriage & Harness Mfg. Co.,
Elkhart, Indiana



Your Spring Wheat Must Grow Fast

It hasn't long to mature and you must push it right along—from seeding time to harvest—by giving it the right kind and amount of food.

Use from 300 to 600 lbs. per acre of fertilizer containing at least 6% available Potash or 250 lbs. Muriate of

POTASH

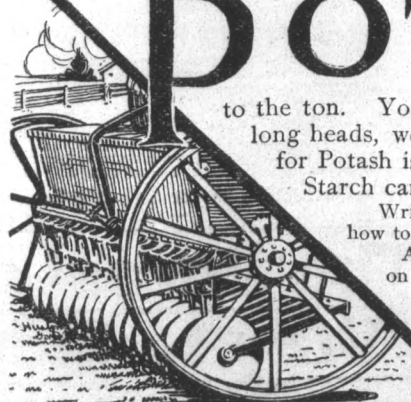
to the ton. You will profit by an early yield of long heads, well filled with heavy, solid grains—for Potash is first and last a maker of grain. Starch cannot form without it.

Write for our books on different crops and how to make the best fertilizers for them.

Ask your dealer or write us today for prices on Potash, any amount from a 200-lb. bag up.

German Kali Works, Inc.

Baltimore: Continental Building
Chicago: Monadnock Block
New Orleans: Whitney Central Bank Bldg.



SEED CORN 153 BU. ACRE

Diamond Joe's Big White—A strictly new variety. None like it. It is the Earliest and Best Big White Corn in the World—Because it was bred for most Big Bushels, not fancy show points; because grown from thoroughbred inherited stock; every stalk bears one or more good ears, because scientifically handled, thoroughly dried and properly cured and had the most rigid examination. Big Seed Catalog FREE. It tells about all best farm, grass, garden and flower seeds grown. Write for it today.

Address, **RATEKIN'S SEED HOUSE, Shenandoah, Iowa**

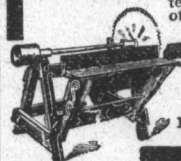
Price \$10 and Up

Earn \$10 a day and more, easily, sawing firewood, lumber, lath, posts, etc., for yourself and neighbors with a

Hertzer & Zook Portable Wood Saw

Fully Guaranteed for One Year

The Hertzer & Zook is the cheapest and best saw you can buy. Direct factory prices—finest tested materials. Easier than other saws to operate because the stick sits low and the saw draws it on as soon as you start work. It is the only saw made, selling at \$10, to which a ripping table can be added. Write for circular and save money.
HERTZER & ZOOK CO., Box 23, Belleville, Pa.



EASIEST RUNNING MILL MADE

A Duplex Mill requires 25% less power and will do twice as much work as any other mill of equal size. Grinds ear corn, shelled corn, oats, wheat, kafir corn, cotton seed, corn in sheaves, sheaf oats or any kind of grain. There is no mill made that for speed and complete grinding equals this.

Kelly Duplex Grinding Mill

Easily operated. Never chokes. 7 sizes. Fully guaranteed. Any power. Especially adapted for gasoline engines.



Duplex Mill & Mfg. Co., Box 217 Springfield, Ohio



"More Potatoes"

From ground planted secured by use of The **KEYSTONE POTATO PLANTER** than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.
A. J. PLATT, MFR.
BOX J STERLING, ILL.

THE NATIONAL CORN EXPOSITION.

(Continued from last week).

In that portion of the report of this event referring to the experiment station exhibits from the different states, which was published in the last issue, the station exhibits from localities most nearly corresponding to Michigan in agricultural conditions were mentioned. There was, however, much of interest to the average reader in the exhibits of the stations from more distant states, for which reason we are giving in this issue a brief description of the more important of them, touching mainly upon points which would be of interest to Michigan readers.

Colorado.—The main purpose of the entire Colorado exhibit was to show the alfalfa work in that state. There, the main aim of the station seems to be to produce a strain of this legume that is especially adapted to the conditions in that section. In Colorado some four legumes can be grown at different altitudes, but alfalfa is the only one in the entire list of these crops that can be grown at all altitudes and for this reason alone the plant is especially valuable. Therefore they are working to get a strain that is not only a disease resister but one that is adapted to the different variations of altitude, is a good seed producer, and one that will produce a maximum amount of forage. They now have this variety where they are no longer judging it from the standpoint of individual plants but from the standpoint of acre production. Lately the state obtained 100 bushels of the Grimm alfalfa and they are distributing it in 1-lb. samples among farmers at different altitudes who will co-operate with the state. Along with the alfalfa work the state had an exhibition of 90 different native grasses, all of which are valuable as forage plants. Their exhibition of Canada field peas included a vine 8 ft. in length. They showed a great number of samples of timothy, oats, wheat and grasses. In this connection, it might be stated that the champion timothy came from this state and that it was raised by two short course students who lately left college to farm. These same two boys recently won the prize at the Colorado show for the best farm exhibit.

Virginia.—The exhibit of the Virginia Experiment Station was one of the most attractive in the show. Boxes of Albermarle Pippins, Winesaps and the famous Black Twig apples were artistically arranged and did not fail to draw the attention of visitors. Incidentally the apples were selected from the crop of 1910 grown on the so-called cheap hill lands of Virginia. Samples are shown which were grown on land that sold for as low as \$9 per acre less than ten years ago. With this display of perfect fruit the exhibit of samples not sprayed or improperly sprayed forms a striking contrast. Samples were shown of apples sprayed with Bordeaux mixture with arsenate of lead and with the lime-sulphur mixture; the latter showing much the best results. The tobacco interests of the state were represented by a display of the leading varieties. There are "hands" of light wrapper which sell at \$25 to \$55 per cwt., dark wrapper at \$17@26 and dark Burley at \$7@10. Virginia corn interests were represented by a surprisingly good exhibit of corn, mainly of the Boone County White variety. The corn of the state has been greatly improved in late years through the efforts of the Farm Demonstration work conducted by the station. The state captured the championship in 10 ears best white for the southern zone.

North Carolina.—The North Carolina Agricultural School at Raleigh had an exhibit that was new and novel—a cotton gin and a loom. The gin was running and was doing the actual work. There were samples of all the other stages of the work that intervene between these processes, so it was easy for the visitor to imagine the whole operation with the raw cotton just as it is picked going in at one end, and with the finished cloth coming out at the other. The exhibit showed all the different kinds of work that is being done by the textile department along the line of weaving, designing, carding and spinning. After the cotton goes into the gin it is separated from the seed, from whence it goes into a lapper from which it emerges as a lap 44 inches wide. Then it goes to the card which delivers it as a skein. These skeins are drawn out six times, then wound on a bobbin and this is the first time that it is twisted at all. There is a long process for drawing it out and reducing it in size. After this process is finally finished, the cotton is ready for spinning. Two strands are run together and it is delivered as yarn. From this point on, the whole treatment

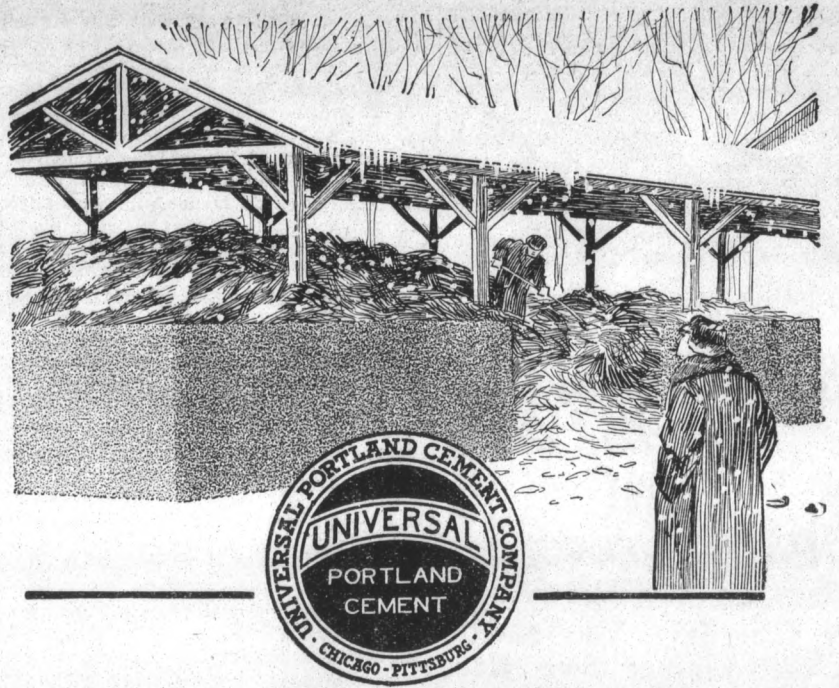
varies according to the finished product.

Maryland.—The Maryland exhibit dealt principally with the problems of poultry farming. Models of poultry equipment were shown, including trap nests, mash hoppers, open-front laying houses, outdoor feed troughs and colony brooders. The feature of the exhibit was a group of four hens that have been tested for production records in the last three years, and have records from 111 to 221 eggs per year. Collections of feeds and feed mixtures were shown, together with charts of feed analysis, and directions for balancing feed rations for chickens of various ages and purposes. The very valuable work which this station has done in the study of poultry diseases was portrayed in the exhibit of diseased organs of chicks affected with the common poultry ailments. Charts also showed methods of treatment and means of administering treatments.

Massachusetts.—The people from this state showed a large variety of samples of their work. One thing shown impressively was the air pressure method of selecting small seeds. The results of the germination test of seeds select in this way was shown and they had germinated far better than the others that were selected by other methods. Samples of good and bad pruning were shown by parts of the trees so treated, being mounted on boards. The trees that were pruned in the right manner did not seem to be showing any signs of decay while the ones that were not treated properly were so badly decayed that there was a good chance of permanently injuring the trunk. Methods of grafting were also shown in the same graphic manner. Some charts showing the results of orchard fertilization were displayed. Barnyard manure gave the best results in a plot of 12 trees that were set out in 1890. Out of these five plots, 12 trees treated with 10 tons of barnyard manure gave a yield of 178 bbl., another treated with bone meal and sulphate of potash yielded 156 bbl., and another plot with no treatment at all yielded 28 bbl. They also showed a large number of photographs of scenes in and about the college, one series on the production of certified milk being especially good.

Delaware.—The Delaware people showed the importance of the legumes in that state. The two big legumes that they are working with are soy beans and crimson clover. There were over 60 different varieties of the soys on exhibition that are being tested out by this station. They are working out rotations in which these two crops figure very conspicuously. One is a corn crop followed with crimson clover, and this in turn followed by soys and rye. All this is for a two-year rotation. One general practice is to grow soys and clover, corn and clover, potatoes and clover and finally wheat and clover. Continuous cropping of corn, when this crop is followed by the crimson clover in the fall, has not proved detrimental to the soil. In such cases the clover is either cut or plowed under in time to grow the corn. They showed the advantages of soy bean culture, displaying several charts showing the relative content of this plant compared with linseed and cotton seed. When the oil is extracted there is a larger percentage of protein in soy bean meal than there is in either of the other two. The oil will soon find extensive use as a constituent of paints. Yields of 30 bushels per acre are not uncommon and the hay after being stripped of the beans has a feeding value. The variety tests are for the purpose of getting the best variety for seed as well as hay.

Kentucky.—The exhibit of the Kentucky Experiment Station centered around the three great crops of that state—tobacco, hemp and bluegrass. Samples of hemp was shown in the various stages of growth and of preparation from the bushy seed hemp to the finished fiber and baled tow. The hemp brake and hemp tackle, the two primitive but efficient devices with which the field hemp is converted into the commercial fiber, were shown. The tobacco exhibit included representative types of burley and dark tobacco which are being grown in the state and comparisons were shown with samples of the same varieties grown at the experiment station in co-operation with the U. S. Department of Agriculture. Many varieties of the famous Kentucky grasses were shown, including bluegrass, orchard grass and red top. Some very superior samples of cow peas and soy beans completed the forage exhibit. In connection with the tobacco exhibit a model of the tobacco seed blower was shown, with which the station is accomplishing great improvement in tobacco culture through the use of good seed.



Concrete Manure Pit Big Saver on the Farm

The common method of throwing manure into an unsheltered pen on a rickety board floor or on the ground is wasteful, the seepage means a loss which can be estimated in dollars and cents. A concrete pit prevents this loss.

It is inexpensive and can be built with aid of regular farm help. It is an improvement and convenience which will pay for itself in a very short time.

Write us for information on any kind of concrete work. We will write you individually, giving full instructions for getting best results. This service is FREE. The only expense to you will be the postage used in writing us; address the nearest office of the Company.

UNIVERSAL PORTLAND CEMENT COMPANY

CHICAGO—PITTSBURG

Northwestern Office: Minneapolis



You're Robbing the Soil

of part of its most valuable and fertile properties—ammonia, potash and phosphorus—every time you grow a corn crop.

These must be replaced regularly or in a few years all the fertility of the soil will be exhausted.

Jarecki Brand Fertilizers

contains all the foods necessary to the perfect development and maturity of corn.

Drill Jarecki Fertilizer, 200 to 400 lbs. to the acre, and you will get 80 to 100 bushels of better, more fully developed corn per acre.

Write for free memorandum book. Contains the A, B, C, of fertilization. Free to all growers.

THE JARECKI CHEMICAL CO.
Sandusky and Cincinnati, Ohio.
Agents wanted in every vicinity.





Yours FREE 30 Days

I'll Pay Freight Anywhere

Just let me send my Chatham Fanning Mill to your R. R. Station on a month's trial. No money, no contract and I pay the freight. Return at my expense or keep it and take a year to pay me. Just let me prove the money you can make with a

CHATHAM FANNING MILL and Seed Grader

Cleans and grades all kinds of seeds, grasses and grains. Don't grow weeds or thin stands. Land and taxes are too high. Double the crops, get better crops and have high-priced seed to sell. Send postal now for my factory price, liberal terms, and get FREE BOOK No. 167. Tells how thousands are making big, extra profits with a Chatham. Send your name by next mail.

Address: Manson Campbell, Pres.,
MANSON CAMPBELL CO., Detroit, Mich.
Kansas City, Mo.; St. Paul, Minn.; Seattle, Wash.



No Money Down
No Note
No Contract

17 Screens and Riddles
Enough for Every Purpose



**\$350 WORTH OF
BEST-OF-ALL
ROOFING \$180
FOR 1**

GUARANTEED FOR 12 YEARS

**We Can Save You \$50.00
on the Average Size Roof**

**A Few Quotations From the Bargains
in Our Latest Roofing Catalog:**

Tarred Felt Roofing. Best quality.
108 square feet. 85-cent value.
Per roll..... **50c**

Rubber Asphalt Roofing. The ordinary
kind. 108 square feet. \$1.25
value. Wt., 34 lbs. Per roll. **79c**

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Weight 50 lbs. Per roll.... **95c**

Corrugated Steel Roofing. 28-gauge.
Heavy, painted red. 100
square feet. \$2.50 value.. **\$1.85**

Best-of-all Roofing. 3½-ply. 108
square feet. \$3.50 value. **\$1.80**
Weight. 60 lbs. Per roll..

**Every Price in This Catalog is 25 to 50
Per Cent Below Regular Retail Prices.**



If you want any kind of roofing, it is to your interest to write for a copy of this free Roofing Catalog and our complete layout of samples before placing your order. We quote 1911 reduced prices which in many lines are even lower than our prices for 1910. Simply write and say: "Send me your free Roofing Catalog No. 65051 and complete set of samples" and they will be mailed at once free and postpaid.

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CHICAGO**

SEED CORN

Iowa Banner White: Greatest record and largest yields in annals of corn growing. Average yield in seven states 178 bushels per acre. **Monarch of Iowa,** Best Yellow Dent corn known or grown; Biggest yields everywhere. We also grow all other leading best varieties, as well as Seed Oats, Barley, Speltz, Grass, Clovers, Alfalfa and all other farm and garden seeds. Our big fine illustrated Seed Catalogue is free to you. A postal card will bring it to your door. Write for it today. Address,

The Shenandoah Pure Seed Co
303 Lowell Ave., Shenandoah, Iowa

Limestone Insures Alfalfa

**It Destroys SORREL and MOSS
And insures a heavy yield of Alfalfa and Clover.**

LIMESTONE makes sour land sweet. In creases the yield of all crops. It supplies the necessary carbonate to light sandy soils. To make heavy clay land more porous and easily worked use the great loosener

LIMESTONE. Write for information and prices.

NORTHERN LIME CO., Grand Rapids, Mich.

Regenerated Swedish Select Oats.

The only pure bred, pedigreed oats. This variety is in a class by itself. The best yielder, the stiffest straw, the freest from rust, of any oat today. I have some choice seed, all cured under hay caps, not a drop of moisture ever touched these oats after they were cut. Every kernel has vitality.

COLON C. LILLIE, Coopersville, Michigan.

OATS

That Yield. Our Sensation Oats breaks all records. Nothing like it. Also Seed Corn. For samples and catalogue write, Theo. Burt & Sons, Melrose, Ohio.

SIBERIAN SEED OATS—Highest of all at Station, pure choice re-cleaned. Sacks free, 60c. per bu. **H. A. DeLAMATRE, MONROVILLE, OHIO.**

WANTED—An up to date man to take charge of forty acres of fruit, near Grand Rapids. Good house. Tools and horse furnished. **WILL COURT WRIGHT, Newaygo, Michigan.**

Illinois.—The Illinois exhibit was strictly confined to the work that this station is doing on crops and soils. The component parts of a bushel of corn were shown in jars—first the grain itself, then the water, the protein, the oil, the fiber, the ash and the carbohydrates, giving a first-class idea of the materials that corn contains. A sample of corn-oil rubber was shown. This is used for insulation, etc. Representative plants were shown typifying the work that has been done in breeding, or selecting for high and low ears. After eight years' breeding the average height of the high ears was 69 inches, while the low ears were but 27 inches from the ground. The results of selecting for erect and declining ears, after six years' work, showed an average declination of 31 degrees from a perpendicular for the erect ears, and 111 degrees for the declining ones. This work is to secure the ear that will turn down and shed the water from fall rains. After using seed from one-eared stalks for six years the proportion of two-eared stalks was seven per cent; with seed from two-eared stalks it was 45 per cent. The work that has been going on for 12 generations to increase the protein content of corn was shown by the extracted protein in jars for comparison. This work has been done by selection on the basis of chemical analysis. The protein was increased to 15.03, one season for the high-content class, while the lowest was 7.43. The high-protein seed showed a consistent gain, year by year, while the low-protein seed showed a corresponding decrease. The same kind of an experiment was shown for high-oil seed showing a consistent gain while the low-oil seed declined year by year. There was an interesting exhibit showing the possibility of reclaiming an unproductive soil. The rotation practiced was corn, cow peas, wheat and clover, with an application of eight tons of manure, two tons of limestone and one ton of rock phosphate per acre, once in four years. The work was begun in 1905. In 1910 the first cutting of clover was .6 ton on the untreated plots against 2.68 tons on the treated; wheat yield was seven bushels as compared with 33 bushels.

Indiana.—This exhibit consisted of two principal features—the soil and crop department of the experiment station and the agricultural extension department of Purdue University. Photographs, samples and charts showed the results of 20 years' experience with cropping, the total money for each system being as follows:

	1st 5 yrs. Last 5 yrs.
Continuous corn	\$93.62 \$47.29
Continuous wheat	\$3.55 71.49
Corn, oats, wheat.....	\$4.92 79.32
Corn, oats wheat, clover..	69.28 95.56

Soy bean data was presented as follows: Cost of production, \$12; common yield, 15 bu.; value, with 55c corn, ground for hogs, \$45; profit, \$33. The crop takes the place of clover; adds nitrogen to the soil and it is a good catch crop. Samples of varieties of corn adapted to Indiana were shown. A number of traveling cases used by the department of agricultural extension were shown. These contained photographs, samples of the work done by students, soil samples, etc., used as object lessons in the extension work. Also pictures of breed types, good and bad, and a case of anatomical specimens showing tissue affected by the most common dangerous diseases.

New York.—The exhibit of the State College of Agriculture was confined chiefly to the results of their work in plant breeding. This work has been done with potatoes, corn, grains, peppers and timothy. The most has been done in timothy. Professor Gilbert, who is connected with this work, said that one-third of New York state is in grass. Thus any improvement that could be obtained from breeding for type would be of great economic importance. In 1903 they began a study of timothy types. This was continued until 1907 when they began the actual breeding work. The results show marked improvement over the general run of timothy. The increase per acre of the tested varieties over the check plots vary from one-half to one ton. The experimenters are working on three separate groups, for hay, pasture and seed. In pasture timothy they want a big-bladed type that will revive quickly after being browsed off. The seed varieties are not of very great economic importance. In the hay types they are working on early, medium and late producing ones. In corn breeding they are trying to get a short-season dent variety for the northern section of the state. The work done in potatoes is hill selection. The varieties most successfully grown are Sir Walter

Raleigh and the Green Mountain. Hybrid work has been done in peppers, tomatoes and crossing popcorn.

Maine.—Maine is not working on any one special line of farm product, but doing general work to improve all lines of farming. They are doing a little more work, however, in reducing the size of potatoes to marketable size and increasing the egg production of chickens. The potatoes are too large, especially for hotel use. The average yield of potatoes is 225 bushels per acre. The work in breeding to increase yearly egg yield has not been carried on far enough to prove any theory conclusively. They found that the daughters of 200-egg hens, taken as a mass, do not produce any better than ordinary chickens. They have found that, as a rule, the quality of high production is not transmitted from mother to daughter. Whether this is due to the fact that the high production weakens them as breeders is not known. They then began to use pedigreed stock and from this by careful selection of both male and female the results are a little more favorable. They are trying to introduce dent corn because of its increase in silage over flint, their standard corn. Oats is the principal grain crop, though barley and rye are grown a great deal also. Wheat does not crop successfully. They are distributing improved seed by means of the Maine Improved Seed Association. This is composed of about 150 farmers and seed producers who will further carry on the work and try and adapt the seed to their own particular localities.

Rhode Island.—The Rhode Island exhibit emphasized especially the results of the correction of acidity in the soil by lime, and breeding for a corn that will do for both grinding and stock feeding purposes. They also showed the results of their crop rotation work. Especially in the grains the addition of lime has raised the production per acre enormously. This work is very important as much of the soil in that state is strongly acid. Corn is used in Rhode Island largely for meal purposes. In the past the meal corn has not been suitable for stock feeding. The stock feeding corn has not served for grinding purposes. The experimenters have tried to produce a corn that will have these qualities combined. They have succeeded. In rotation work they have found that one of winter rye, clover and grass, grass, Indian corn and potatoes is the most successful combination. These rotations have been running for 17 years. They put lime ahead of the grass in each rotation. In comparing stable manure plus lime and chemical fertilizer plus lime the chemical fertilizer has a shade the advantage. An experiment that is peculiar to Rhode Island is the testing of the toxic effect of a crop upon the soil. They planted two years of a crop then one year of onions. They found that onions did better following red clover than any other crop.

Nebraska.—Breeding work with corn is the big thing that the Nebraska station showed. Up above the booth was placed a placard on which is some Nebraska philosophy that read thus: "Fine feathers do not make fine birds. Fancy characteristics do not make ears of corn that yield. The egg record spots the loafing hen; the ear-row test the poor-yielding ear." Below this placard were a large number of boxes, each of which represented the product of 100 stalks of corn. Then boxes showed the produce of ten show ears that were selected with reference to type, and five boxes represented the produce of that number of ears that were selected with no reference to that matter. The yields showed no difference in favor of the prize-taking parents. What is more, the ears that yielded the highest would not score at all and from this we may make the logical deduction that we can not tell the value of an ear by its looks. In this 15-box lot there was a wide variation as to shrinkage and quality of the ears. Some time ago seven Nebraska seed corn men sent what they considered their best ears down to the station. At the same time they sent what they considered the most scrubby and poor ears they could find, to be tested alongside of their best. The corn that was selected for type yielded no better than the other, and more, the early varieties yielded even less. These men had been working for years on the wrong basis.

Five years ago the station planted a lot of common corn seed. Part was planted one in a hill, some three and others four kernels. The resulting corn was planted the same way, the corn from the five-plant hill being planted five to the hill. (Continued on page 195).

Please mention the Michigan Farmer when writing to advertisers.

MERIT IS BOUND TO WIN.

Some one has truly said that if a man builded a better article than anyone else, that though it be builded in a wilderness people would wear a path through the forest to purchase. Merit is bound to win. You can 'fool part of the people all the time and all the people part of the time, but you can't fool all the people all the time.' The thousands upon thousands of progressive farmers in North America, Australia, South America, Russia, Germany, in fact in every part of the grain growing world, would not use Superior Grain Drills unless they were right. Why are they right? Because you can sow any seed from the finest grass seeds to bush Lima beans, you can sow any commercial fertilizer or granular lime and it will sow it right and in quantities desired. You can reseed worn out and run down pastures and meadows. The Superior puts the grass seed under the sod without turning it. It is strong, light draft, accurate and will do your work right. It sows evenly—every feed exactly the same amount. No skipping, no bunching or choking. The Superior Disc Drill will run and do good work wherever a disc harrow will run. Stalks, mud, pea vines, crab grass and any other trash has no terrors for the Superior. "The name tells a true story." Drilled oats and small grains will withstand the drouth much better than when broadcasted. You can get a good stand of clover if you sow it in the spring at the same time you do your oats or wheat, because the young clover plants get a good stalky growth at a very critical time—when they need sun and air. The Superior Drill is manufactured in many styles and sizes by The American Seeding-Machine Co., Incorporated, Springfield, Ohio. Write them for a Superior catalogue, read it carefully. Go to your nearest implement dealer, and ask him to show you a Superior Drill.

All Fired

That was the condition of the cornfields in our last great drought season in the central states, excepting in those fields where the farmers used

BASHUMUS FERTILIZERS

The reason is simple. **Filler** is the main bulk and weight of all fertilizers. In other brands this filler is practically worthless. In Bashumus Fertilizers the filler is all **Humus**, which furnishes plant food, loosens the soil, and retains the moisture, thus neutralizing drought conditions. Don't buy waste—buy **Humus**. Ask your dealer for Bashumus Fertilizers. If he doesn't carry them, write us. We will send you free a valuable booklet, "Richer Soil for Richer Profits," and will see that you are supplied with Bashumus Fertilizers. Write us a card now.

BASH FERTILIZER CO.
Dept. B Ft. Wayne, Ind.

BASHUMUS
BRAND
125 LBS.
THE KIND THAT BRINGS RESULTS
BASH'S FERTILIZER
MADE BY
THE BASH FERTILIZER COMPANY
FORTWAYNE IND.

The Kind That Brings Results

MADE FOR WORK AND WEAR

YET SO EASY IN ACTION
A GIRL OR BOY OF SIXTEEN
CAN OPERATE IT

KRAUS PIVOT AXLE SULKY CULTIVATOR

No pushing or pulling the shovels from one side to the other. Just a touch of the foot and the wheels and shovels move easily and quickly to right or left. No stopping the machine to regulate the width between gangs or the depth of the shovels.

Uneven Land, Crooked Rows and Hillsides as Easily Cultivated as Level Ground.

Made in high and low wheel and KRAUS pivot gang. Built entirely of steel and malleable iron. Every possible adjustment. Light Draft. Perfect balance. Choice of 26 different equipments gives you just the one you need for your work. Also the Clipper Hammer Seat and the Carpo Walker. Don't accept a substitute. If your dealer does not handle the KRAUS write us for full descriptive catalogue.

AKRON CULTIVATOR CO.
DEPT. 12 AKRON, OHIO

KRAUS
TRADE MARK

SEED OATS—Gegler's Canadian oats. Strong stiff straw, early heavy yielder. 75c a bushel cleaned in new bags. Also have a good seed barley. Order early. For samples, write, W. E. GEGLER, St. Johns, Mich.

THE CONCRETE SILO A SUCCESS.

Much has been said against cement silos, and when we contemplated building one about two years ago we were advised by many, (who did not know from experience) that they were not practical, would crack and crumble and would not keep silage.

Finally we concluded to visit farmers who had cement silos. This we did, and in each case the owners very highly recommended them, saying that they were practical, did not crack and crumble and did keep silage just as good as any other kind of a silo. All of this we could also see for ourselves.

Then, we took into consideration the fact that once built a cement silo would last indefinitely, and that the cost would be no more than a good wooden silo of the same dimensions.

We let the job to a contractor to build a cement silo 36x14 feet with 5-inch walls, re-inforced with woven wire fence placed right in the silo, fitted with continuous doors, roof and chute. The silo was built late in the fall of 1909 at a total cost of about \$250.

Now it is done and we don't have to worry about it blowing over, nor go to the expense of painting it inside and outside. It is there and nothing short of a cyclone can destroy it. The silage is keeping in good condition, freezes but little near the walls and our cows eat every morsel.

Taking these facts into consideration, how can anyone offer a logical argument against a cement silo?

Wayne Co.

H. E. MELDRUM.

THE OTHER SIDE OF THE AUTO QUESTION.

Always an ardent admirer of horses and enthusiastically fond of driving, I looked upon the automobile as a menace to safety, comfort and peace of mind. I found that I could no longer drive along the country roads without a fear that a car might crash into the rear of the carriage or run into a wheel with disastrous results. After dark my fears were trebled, indeed, in time I came to think myself perfectly safe between sunrise and sunset, but after the shadows began to fall I remained indoors and blamed the motorists for all my self-imposed imprisonment.

Finally a friend who owned a car took me for a long ride and I changed my mind about some things. First, I decided that autos may have some rights which I had been overlooking. From the car I saw that the road looked like a public highway, and although we did cover a few pedestrians and riders in horse-drawn vehicles with a cloud of dust, we did it because the dust was there and would rise and not because we liked it, either for ourselves or them. Then, when night came I made the discovery that the carriage made us quite as much trouble as the auto had been making me in days past. Through the gathering gloom the driver of the car strained his eyes to see the dust cloud that indicated something in the road in front of us. At every turn and wherever an especially deep shadow was cast by the overhanging boughs of trees he crept along with his eyes fixed on the roadway in front. Once a dust-covered carriage top almost escaped his eyes and he saw it only when some ten or twelve feet distant. The auto had red lights at front and rear but these would avail nothing, if the driver of any vehicle failed to turn out on the right side of the road as we drew near. An hour's ride through the darkness led to a firm conviction that instead of talking about autos doing more to safeguard the people it would be a very excellent idea if the drivers of horses would hang a lantern with a red light on the back of their vehicles when going out after dark.

Half the accidents to auto drivers are caused by running too close to an embankment or into a ditch in order to avoid striking some horse-drawn vehicle, and nine-tenths of the accidents in which a horse and auto figure to the sorrow of the horse are caused by the fact that the driver of the car failed to see the vehicle.

New York,

L. M. THORNTON.

CATALOGUE NOTICES.

Shumway's 1911 catalogue of garden and flower seeds and gardener's accessories is a large sized, profusely illustrated book of 56 pages, the cover of which bears the motto, "Good Seeds Cheap." Address R. H. Shumway, Rockford, Ill., for a copy.

The Storrs & Harrison Co., proprietors of Painesville Nurseries, Painesville, O., are sending out their 1911 spring catalog, illustrating and describing a full line of garden and flower seeds, plants and trees for spring planting.

No Rim-Cutting No Overloaded Tires

In motor cars, one-fourth the tire cost is due to rim-cutting—one-fourth to overloading.

We have perfected a tire which can't be rim-cut—called Goodyear No-Rim-Cut tire. And, to prevent overloading, we are making that tire 10 per cent over the rated size. The use of this tire, with the average car, means to cut tire bills in two.



The 126 Braided Wires

The No-Rim-Cut Tire

This picture shows a Goodyear No-Rim-Cut tire as it fits any standard rim made for quick-detachable tires.

When you use this tire the removable rim flanges are set to curve outward—as shown in the picture.

The tire comes against the rounded edge, and rim-cutting is made impossible.

We have already sold half a million Goodyear No-Rim-Cut tires. We have run them deflated in a hundred tests—as far as 20 miles. In all this experience there has never been a single instance of rim-cutting.

All the worry of rim-cutting—all this ruin of tires—is avoided forever with No-Rim-Cut tires.

Ordinary Clincher Tire

Before the invention of No-Rim-Cut tires the clincher tire was almost universal.

With clincher tires, the removable rim flanges must be set to curve inward—as shown in the picture—to grasp hold of the hook in the tire. That is how the tire is held on.

Note how those thin flanges dig into the tire. That is what causes rim-cutting.



The Cause of Rim-Cutting

In event of a puncture the tire may be ruined beyond repair in a moment. Fully 25 per cent of all tire cost has been due to the ruin of rim-cutting.

How We Avoid It

We have invented a tire with an unstretchable base. We vulcanize into the base 126 braided piano wires. Nothing can possibly force this tire over the rim flange. But, when you unlock and remove the rim flange, the tire slips off in an instant.

When the tire is inflated the braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

That is why the hooks are not needed. Not even tire bolts are needed. The tire base is unstretchable—it can't come off.

GOOD YEAR
No-Rim-Cut Tires

THE GOODYEAR TIRE & RUBBER COMPANY,

Branches and Agencies in All the Principal Cities

47th Street, AKRON, OHIO

We Make All Kinds of Rubber Tires

Don't Buy Your Spreader On Snap Judgment

It isn't the outlay of money alone that you should consider in buying your manure spreader. There are things far more important. Your prime consideration should be: "Is it strong enough to stand the strain?" And you can't decide that on the spur of the moment. You must look carefully into the construction—into the material—and into the record of the spreaders in the hands of present owners. It may take you a little longer to decide—but you'll get the right spreader—which is just as important as having a spreader at all.

Out of the hundreds of manure spreaders now in use, and now being made—the bulk are not strong enough and cannot possibly stand the terrific strain to which all spreaders must be put. So to safeguard you against disappointment—we say

Take Time to Consider

why many spreader makers don't tell what materials they use for the different parts. Consider whether you want a spreader you know is made right—or whether you want one that you don't know about.

We're proud to tell you there's more oak, hickory, steel, malleable and wrought iron in the Great Western than in any other spreader. We're proud to tell you that every Great Western has an all oak frame, double oak bolsters, oak pole, oak axle caps, oak beater, oak bed stakes, oak rake head, oak cross pieces, hickory single trees, hickory double trees—hickory neck yoke—malleable fifth wheel, malleable apron links, malleable gear covers, and cold rolled steel axles, apron and beater shafts.

We're proud to tell you the Great Western is not only of the endless apron type, but its endless apron is so far ahead of any other that there's hardly a comparison. It runs on 3 sets of large rollers. It is drawn equally from both sides, so there's no friction—no binding, no matter how unevenly you load it.

We're proud to tell you of the big 16-inch, 60-pound unbreakable Great Western malleable fifth wheel attached

The Great Western



to two big, solid oak bolsters by malleable braces. We're sure you'll appreciate the impossibility of pulling out the front end—even with the heaviest load.

We're proud to tell you that the Great Western pole is made of solid oak—not pine or any inferior wood. We're proud to tell you that the front wheels of the Great Western track with the rear wheels, because it means only two wagon tracks on meadow or in new plowed ground, instead of four, and because it means 25% less draft on your horses. It means that you can top dress your crops without running or tramping the rows.

We're proud to tell you what every part of the Great Western is made of. 100,000 farmers as well as many U. S. Government and State Experiment Stations have endorsed Great Western materials and construction.

Don't buy any spreader on snap judgment. See the spreader itself before you pay for it so you can prove to yourself that it can stand the strain. Get your knife, ruler and hammer out and test. You don't want a pine, cast iron, light weight, heavy draft spreader. You do want a substantial machine and we want to prove that the Great Western is the one that will pay you the biggest profits every year—for more years than any other spreader built.

No matter what style or size you want—wood or steel wheels—35 bushels to 100 bushels capacity—you'll find a spreader to suit you in the Great Western line. Our big book shows all the styles and describes every part of them. You know just what you're getting—you see just what you're getting before you pay a penny. Now send what you're getting before you pay a penny. Now send your name for our Catalog No. 5731 Address

Smith Manufacturing Co.
158 East Harrison Street
Chicago, Illinois



LIVE STOCK

FEEDERS' PROBLEMS.

A Ration for the Fattening Steers.

I am feeding 16 steers that do not take on fat as they should. I am feeding ensilage and cottonseed meal. I feed about 45 lbs. of ensilage and 2 lbs. of cottonseed meal to each steer per day. For roughage I feed shredded cornstalks. They get no grain except what corn is in the silage. What can I add to their ration to take on fat. Steers weigh 800 to 850 lbs.

Kent Co.

E. A.

The best feeding tables tell us that the ration for the fattening steer should approximate a nutritive ratio of 1:6, a little narrower at the commencement and finish of the feeding period and a little wider at about the time the animals are gotten on full feed. The experiments conducted with a view of determining the amount of dry matter required for one pound of gain in fattening steers, when the ration is properly balanced, indicate that about 12 to 13 lbs. of dry matter are required to produce one pound of gain. With these premises given as a basis for our figures it is not difficult to figure out a theoretical ration for steers from the feeds used.

From tables showing the digestible nutrients contained in the feeds used in making up the ration, we find that the 45 lbs. of silage and two lbs. of cottonseed meal, together with about 10 lbs. of shredded corn stover, which would be required to make up the dry matter which would be eaten by the steers, we have a total of 1.32 lbs. of protein, 8.6 lbs. of carbohydrates and .62 lbs. of fat. Then by reducing the fat to its equivalent in starches and making the necessary division, we find the ration being fed to these steers has a nutritive ratio of 1:7.5, which is theoretically too wide for best results. As a means of correcting this difficulty, the amount of cottonseed meal might be gradually increased until it is nearly or quite doubled, depending upon how rich the corn silage is in grain. If it contains plenty of grain, four pounds of cottonseed meal would no more than balance it up, and if of average consistency in this regard the doubling of the present allowance of cottonseed meal would give the ration a nutritive ratio of 1:5.3, while the feeding of three pounds of cottonseed meal would provide a nutritive ratio of 1:6.2, which would not be far from correct theoretically.

Of course, in practical feeding, theory cannot be followed too closely with profit in any case. There is, for instance, a wide difference of opinion among cattle feeders as to how extensively silage can be used as a feed for fattening steers with profit. However, as practical feeders grow in experience with the use of silage as a feed for fattening steers, and as experimental evidence as to its efficiency accumulates, it has greatly increased in popularity for this purpose, and there no longer remains any doubt in the mind of most feeders that silage is one of the most economic feeds that can be used in the ration for fattening steers. But there still remains some difference of opinion as to the amount that should be fed, some contending that it should be used liberally all through the feeding period, while others believe its use should be decreased as the feeding period advances. But the best authorities favor the feeding of from 40 to 50 lbs. per day during the early portion of the feeding period, gradually reducing the amount used to 25 or 30 lbs. per day at the finish of the feeding period.

But after all is said, the steers themselves will answer the question of how much ensilage to feed in each individual case, better than the most eminent authority. Likewise, the steers should be consulted in regard to the other feed given. That is, it should have sufficient variety to stimulate the appetite and make the ration more palatable, and to this end the roughage portion of the ration should be varied as much as possible. However, the increasing of the protein content of the grain ration by the addition of more cottonseed meal or some other concentrate will properly balance it for these steers, and by gauging the amount fed to their needs good results should be secured from it, with economy in the cost of grains secured.

A BUILT-OVER BARN.

My barn is not one of the modern kind but one that has been built over or added onto, as shown by the rough sketch. The dotted lines show the main building,

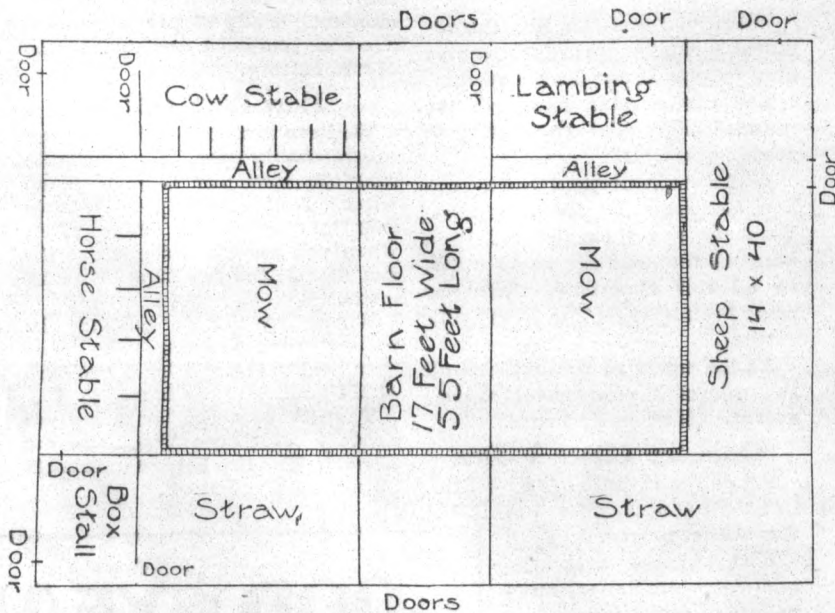
on which additions have been built on all four sides. These additions were built on at different times, and by taking off the boards from the sides and ends of the main barn for the additions, it was not necessary to purchase much new lumber. As I did all the carpenter work myself, the expense of these additions was comparatively small, and I now have a barn that is very convenient, and one large enough to hold about all the hay, grain, corn fodder and straw that I can raise. As the barn is painted red, it compares favorably in appearance with most barns around the country. A portion of the barn was painted where the lumber was not planed.

By putting on two good coats, there is but little difference in the looks of this or the part where the lumber was planed. There are many old barns around the country, that could be enlarged by similar additions, and painted without planing the lumber, which could be thus improved at small expense. Such a barn can be nearly as conveniently arranged, and by painting be made to look nearly as well as a modern structure, which would cost more than many farmers could afford.

In my barn the lofts above the horse and sheep stable, are used for hay, which is carried to these lofts by a carrier running the whole length of the barn. The lofts above the cow and lambing stable are used for storing corn fodder in winter. The horse stable, exclusive of the box stall, will accommodate five horses. In the cow stable there is room for seven cows, and a few calves on one end. Each cow has a separate stall, and instead of being tied around the neck, a small chain which is snapped into a staple at the rear of the stall, keeps each cow in place, and

ventilation, there is no objection to having the lambs come early, provided silage or roots are available as a succulent feed for the ewes, but this necessitates very early shearing, or waiting until after the ewes have lambed before they are shorn.

After trying both plans, the writer favors shearing after the lambs have been dropped, which is generally during the last days of March or the first days of April. If the ewes are given a reasonable degree of attention during the lambing season, there is no necessity of keeping the flock so closely housed as to make them uncomfortable in their fleeces during ordinary March weather. The plan which the writer usually practices is to remove the ewes and lambs from the stable as soon as they are dropped and place them in a separate stable from which all draughts of cold air are excluded, for three or four days or perhaps a week after the lambs are dropped. In case the weather is mild this is not always done, as the ewes can then be penned off in the stable with hurdles made to fit between a rack and one side of the stable, and the lambs will not suffer from the cold. In fact, a good healthy lamb will endure a good deal of cold weather without apparent suffering after they are once dried off and filled up with warm milk. Our stable door is always kept open on warm days when the sun shines in, and the lambs will frisk and play in the sunshine and fresh air, even on a chilly morning, with apparent delight. Thus, if the ewes are given a reasonable degree of attention at lambing time, there is no necessity of housing them as closely as some flock owners do, and consequently no necessity of shearing before they lamb on this account. In fact, we



Length of Barn 88 Ft. Width 55 Ft. and 16 Ft. High

gives her perfect freedom to lie down or lick herself, and my cows are always clean. These stalls are so arranged that the cow cannot turn around, and the milker has plenty of room without being crowded. As my lambs are dropped in February and March it is necessary to have a separate stable for this purpose. In this stable are several small pens in which the ewes are confined until the lambs get strong. Most of my barn floor is covered with plank, which are getting out of shape. Early in the spring I intend to tear out these plank, level off the ground, and put in a solid cement floor. I have the gravel already drawn for this purpose.

Ottawa Co.

JOHN JACKSON.

EARLY VS. LATE SHEARING OF THE BREEDING EWES.

There is not a little difference of opinion among the flock-owners of Michigan as to the best time to shear the breeding ewes. But by far the larger majority of the breeders of pure-bred flocks, who have perhaps made a more careful study of this problem, prefer early to late shearing. There is, however, quite a difference of opinion among this class of sheep owners as to whether the ewes should be shorn before or after the lambing period, and this is a fruitful subject for discussion among many of them at this season of the year. A large proportion of the sheep breeders prefer to have their lambs dropped in March, as proper care can be given them at this time with less loss of time needed in the doing of other farm work than when they are dropped later in the season. If the stables are reasonably warm and provision is made for proper

believe it better for both ewes and lambs if they are not sheared so early as to make very close housing necessary during the month or more covered by the lambing season.

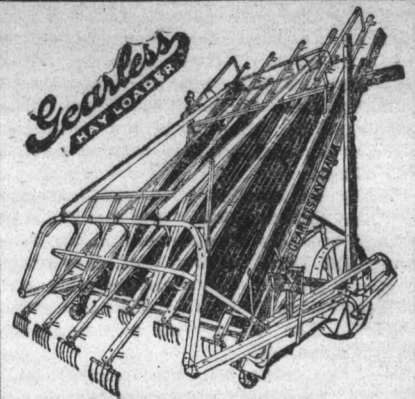
But if they are sheared at about the close of the lambing period, they will suffer less from the exposure than would be the case if not sheared until turned to pasture as was formerly the common practice. Then the cold storms are often the cause of serious loss, while the hot sun burns their unprotected backs, but if sheared at the time above mentioned, the wool will get well started before the pasturing season arrives, and will protect them from both wind and sun, while the growth will not get so heavy as to be burdensome during the hot weather, as is the case where excessively early shearing is practiced.

With feeding or fattening lambs, or with show sheep the case is an entirely different one, and different factors must be considered. But with the breeding ewes, it is the writer's firm belief, after a careful study of the problem for a period of many years, that both economic and humanitarian considerations are better met by shearing around the first of April than at any other season of the year.

Oakland Co.

A. R. FARMER.

O. J. Hess, widely known as a general farmer and stockman of Kansas, is wintering 200 head of good steers on rough feed. Usually, the farmers of that region are extensive cattle feeders, but this winter very little feeding is being carried on, as feeders are regarded as too high. The country thereabouts has a great abundance of rough feed, however, and some farmers are using it for roughing the cattle through the winter.



DON'T BUY GEARS AND CHAINS

When you buy a hay loader don't buy gears and chains but get an easy running GEARLESS.

It does all that any cylinder or geared loader will do and has none of their troublesome parts.

Gears, sprockets and chains on a hay loader are a constant source of annoyance and frequently cause serious delays right in the heart of the haying season.

The GEARLESS HAY LOADER has no gears, no sprockets, no chains nor any of the troublesome parts or other loaders.

Its very simple mechanical construction makes it lighter draft than others and it will outlive two to three other loaders.

BOOKLET FREE—We want every farmer to have our Free Hay Loader Booklet. It is full of hay loader facts and illustrations. Write a postal for it today.

LACROSSE HAY TOOL CO.,
32nd Street, Chicago Heights, Illinois

Use KEROSENE Engine FREE!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves Kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing.

Gasoline Going Up!

Automobile owners are burning up so much gasoline that the world's supply is running short. Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints coal oil do work of three pints gasoline. No waste, no evaporation, no explosion from coal oil.

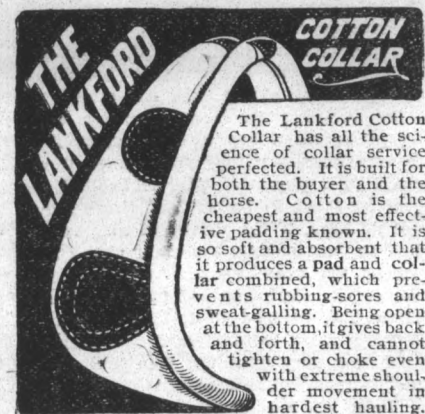
Amazing "DETROIT"

Only \$45.00 and up. The "DETROIT" is the only engine that handles coal oil successfully; uses alcohol, gasoline and benzine.

Basic patent—only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h.p., in stock ready to ship. Engine tested just before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric-lighting plant.

Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate amazing, money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, we will allow you Special Extra-Low Introductory price. Write!

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



The Lankford Cotton Collar has all the science of collar service perfected. It is built for both the buyer and the horse. Cotton is the cheapest and most effective padding known. It is so soft and absorbent that it produces a pad and collar combined, which prevents rubbing-sores and sweat-galling. Being open at the bottom, it gives back and forth, and cannot tighten or choke even with extreme shoulder movement in hardest hauling.

Ask to see the Lankford Collar at your dealer's. If not on hand, send us his name and we will enable him to show them at once. Write immediately to

COUCH BROS. MFG. CO.

B-3 CINCINNATI OHIO

for booklet on humane collars. entitled "Horse Sense," No. 13.



The farm labor saver that lasts a lifetime. Broad tired steel wheels carry any load. No wear-out to them. Don't be a wagon slave. The Electric saves thousands of high lifts. Best for hauling manure, grain, stone, fodder—everything you have to haul. Easier on the horses. Why not do your hauling the easy way? Send now for free book telling all about the one long-lived, steel-wheeled, real handy wagon. Address ELECTRIC WHEEL CO., Box 55, QUINCY, ILL.

PLEASE MENTION THE MICHIGAN FARMER when you are writing to advertisers.

MANAGEMENT OF THE SPRING PIG CROP.

The saying that a pig well born is half raised is eminently true, and no pig can be well born from a mother that is underfed or improperly nourished while she is carrying her litter. My experience in handling breeding swine has convinced me that it is much easier, and far more satisfactory, to begin by feeding the brood sows a proper diet a few weeks or months before farrowing time, than it is to have a bunch of cross, feverish sows to handle when the farrowing period arrives.

Here is another consideration. When we lose the early litters we lose the product of the season, we cannot replace them the same season, so we want to take every precaution to raise those litters. If we have comfortable farrowing houses and give proper attention to the management of the sows during this critical period, it is possible to save a very high percentage of these early pigs. When we have plenty of skim-milk to supplement their grain food and mill feed it is comparatively easy to make up a ration that will maintain their flesh condition and carry them safely over the weaning period and have them well started, by the time pasture and forage crops are available.

Breed from Mature Stock.

Breeding from immature stock is the cause of many disappointments in the size and quality of the pig crop and I cannot too highly caution men to give up this practice. I know from experience that it has been very profitable for me to retain mature brood sows. I regard the brood sow and her ability as a producer in the same light as I do the dairy cow and it ought to be the aim of every hog grower to see how much he can gain by retaining his best dams. We should keep in mind that a good brood sow, a good feeder and a good milker will give in comparison as much milk as one of our best cows. In premature breeding, the young gilt is often subjected to severe trials of maternity and cannot raise and properly nourish her young, because she must raise her own self, therefore it is best to retain the older sows that possess good, vigorous constitutions and that have a reserve force in the shape of flesh and energy that goes a long way toward getting the young pigs started on the right road to profitable porkers.

Too many hog growers are breeding their pigs on but one principle, and that is luck. When they save a fair proportion of their early litters, that is good luck. When they lose a large proportion through exposure and bad management, that is bad luck. We must get away from the common belief that there is any principle of luck associated with the management of the spring pig crop and learn that the only sure road to success is a knowledge and understanding of the fundamental principles of the business and carrying them out in detail.

The Winter Ration.

In making up the winter rations for the brood sows I have found that nutriment, succulence and bulk form the trinity of successful feeding. Liberal feeding every day with those foods best adapted to the condition of the sow, must be the inflexible rule. Good, wholesome blood, bone and muscle-forming foods, such as middlings, ground oats, oil meal and barley, with roots for succulence and clover to add bulk to the ration, will make ideal food for sows that are carrying litters of pigs. In feeding these foods I prefer to mix the roots and cut clover with the grain foods and feed the whole mixture in the form of a warm slop. The man who feeds his sows a ration of good, nourishing foods and gives them good, dry sleeping places is invariably sure of having a good crop of healthy and vigorous spring pigs.

Sows that are fed on corn and other concentrated, heat-producing foods during pregnancy are quite sure to experience more or less difficulty at farrowing time and we need not blame the sow or wonder if she is cross and feverish and runs and chases the pigs up in one corner of the pen, or even turns upon them and devours them.

I find that the time spent in cultivating the acquaintance of the brood sows and studying their individuality and disposition pays me large returns. By placing them in the farrowing houses two or three weeks before farrowing time they have an opportunity to become acquainted with their new surroundings and accustomed to being handled by the herdsman.

Care at Farrowing Time.

The most severe losses can be avoided if good judgment is exercised in caring

for them during the time they are farrowing. Many pigs are lost through becoming chilled and crawling under the sow and when it is possible it is an excellent plan to take the pigs and place them in a basket as fast as they come and keep them there until the sow has completed the farrowing act, and then place them with her and see that each pig finds his place at the dinner table and gets a good start in life before leaving. Many hog growers and feeders claim that it is a piece of over-refinement to care for the brood sows in this manner, but let me say right here that the only money I have ever found in the business of growing market hogs has been made by attending to what some growers term detail work.

When we find a man who has made a success with some particular branch of stock raising and feeding we invariably find that he is a careful feeder and makes a constant study of the individual needs of each animal that is under his care. All this does not mean that we should pamper and overfeed our hogs, but simply give them the kind of food and care that their artificial environment demands.

Feed and Care After Farrowing.

For the first 24 hours after farrowing the sow should be fed very sparingly. A little warm water and wheat bran will be adequate. The second day middlings may be substituted and the ration gradually increased until the pigs are capable of taking all of the milk she is capable of producing. Make some kind of a creep so that the little pigs can come out of the farrowing pen and eat out of a small trough by themselves. Encourage them to eat and exercise and there will be little danger from thumps and by the time they are ready to be weaned they will be capable of eating sufficient food from the trough so that they will not fall away in flesh and condition when they are taken away from the sow.

In some instances when the sows are rather along in years it will be judicious to take the young pigs and remove their tusks as soon as they come. The pigs from older sows are more apt to have sharp tusks than those from younger sows. The tusks are very sharp and painful to the sow, and in many instances cause her to jump and become excited when the pigs are sucking.

One of the most difficult problems that confront hog growers is to find a remedy to prevent scours and indigestion. I believe that this complaint comes largely from unsanitary conditions of the pen and nests, and for that reason it will be an excellent precaution to sprinkle the nests with lime and spray the inside of the pens with a good disinfectant.

Wheat middlings are a very desirable grain food for sows that are suckling a litter and mixed with other milk-producing foods such as ground oats, corn in limited quantities, tankage and oil meal to give variety to the ration, make excellent rations for the sows. The feeder must use his own judgment as to the amount and regulate it by the condition of the sow and her litter. No man can tell just how much food and attention a sow will require during the farrowing period and the time she is nursing her litter. Constant attention alone will decide the question.

Good care and rational feeding of the sow and her pigs during this critical period of their lives has a marked influence that can be noted until they are full grown. Start the pigs right and keep them gaining every day from birth to maturity. Feed them a ration adapted to their needs up to the time they are five months of age and then finish them with a short fattening period and you will be reasonably sure of making a fair profit from the business.

New York. W. MILTON KELLY.

A superabundance of cheap corn everywhere is causing farmers to put plenty of flesh on their live stock, and this applies to sheep and lambs, as well as to cattle and hogs. Now heavy mutton on the hoof is a bad seller except at such times as exporters are good buyers, and these times are apt to be rather wide apart, although the foreign outlet has improved considerably in recent weeks. If there is a general movement on the part of sheepmen to hold their flocks until they become heavy, the later market will be glutted and much lower. Sheepmen should bear this in mind.

It is estimated that about 900,000 sheep and lambs are on feed in Colorado. Over half of these are in the Arkansas Valley, and the San Luis Valley has the smallest number of any section. Around 40,000 cattle are on feed at the different sugar beet factories in Colorado, or less than half the number fed a year ago.

The number of sheep in Texas has decreased approximately 3,000,000 head during the last ten years. Destruction by wolves and other wild animals has been large.

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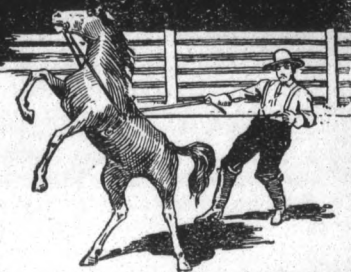
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TREATING AILING SHEEP.

While it is the consensus of opinion that preventive is better than a cure, few flock owners are that fortunate in their management that they do not occasionally have to administer medical treatment to some ailing sheep. There is a great deal in knowing how to prevent attacks of diseases, but despite thoughtful care symptoms of physical disorder will become manifest and unless immediate attention is directed to relief the trouble becomes more serious and frequently fatal results follow. Very frequently, if attention is immediately given slight ailments, the progress of the disorder can be permanently checked and serious, if not fatal, results avoided. A great drawback to administering treatment to ailing sheep among flock owners, is delay in not taking heed of trouble when symptoms first appear. Any person who has ever had any experience with diseases of any nature knows that a stitch in time saves nine. If an ailment is immediately taken in hand in the early stage it can invariably be checked and avoid an immeasurable amount of worry and trouble.

The thoughtful, painstaking flock owner always has his mind on his sheep. He is ever watchful of approaching foes and daily notes the disposition of every individual in the flock. Sheep fed on a wide range of diet, given plenty of exercise and properly protected from adverse weather conditions, are less apt to manifest symptoms of disorder than animals poorly fed, irregularly cared for and inadequately sheltered. Irregularity of habits is one of the first indications that notifies the flock owner that some member of his flock is ailing. When a sheep stands back from the feed rack with its head down there is evidence that something is wrong which demands immediate attention.

In treating ailing sheep the first step is to remove the animal to a warm, quiet and well-lighted place where convenient to care for. Never attempt to administer treatment to an ailing animal while with the flock, as it frightens the rest of the sheep and provokes irritation. Every flock owner should have in readiness some place about the barn where sick animals can be confined, as it is impossible to tell when it will be needed. If there is any question as to the nature of the ailment, precautionary measures should be exercised to avoid infection.

Indigestion is a very common ailment among sheep during the winter months, and attacks are frequent, especially while the flock is confined to dry feed. The ailment may be characterized as a failure of the natural changes which food undergoes in the alimentary canal. Sheep confined to a dry, narrow ration without any form of succulent food, are more apt to suffer attacks of indigestion than when on pasture. Ordinarily the ailment is not serious, but if permitted to run its course takes a more acute stage and frequently results fatally. Indigestion is also a common ailment among highly fed animals, especially those being fattened or prepared for show purposes. A common symptom, and one most likely to become first apparent in attacks of indigestion, is the animal standing back from the feed trough with head downward. A purgative should be first administered. Castor oil, 3 ozs., glauher salts, 5 to 6 ozs., or raw linseed oil one-half pint are excellent laxatives and can be given without endangering the working of the digestive system.

Catarrh is another very prevalent disease among sheep during the fall, winter and spring months. In a climate such as Michigan has, where the weather changes frequently, there is greater danger of attacks of catarrh than where the climate is more moderate and less changeable. Catarrh is largely due to exposure to damp weather after being subject to high temperature in the barn. Sheep that are allowed to run in open sheds with good protection from storms are less likely to attacks of catarrh than those closely housed. The most effective treatment consists of removing the cause. If the flock generally is attacked than attention should be directed to some modification in the management. Where animals are badly affected they should be removed and given good nursing for several days before returning to the flock. A laxative first should be given. If there is fever I have given the following with excellent results: Epsom salts, half ounce, salt-petre, one dram, and ground ginger one dram. This dose may be given in an oil meal gruel or mixed with molasses.

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A GRAIN RATION FOR THE HORSES.

I would like to ask through your paper what would be the most profitable ration for feeding horses? I haven't very much oats. What would be best, to feed corn to the horses, or buy oats and feed the corn to the cattle? Also, what is the best feed for dairy cows, wheat bran or ground oats?

Where one is short of oats for the horses and has plenty of corn, a very good grain ration can be made up by mixing about 600 lbs. of corn and 200 lbs. of oil meal with some oats mixed in to lighten the ration. Or, in case it is desired to get along without the oats a mixture of 600 lbs. of corn, 200 lbs. of bran and 100 lbs. of oil meal will make an economical and well balanced ration which will be found as efficient and rather cheaper than oats at present prices for these grains, as a smaller feed of this mixture will contain the same animal nutrients as a normal feed of oats.

The best grain for cows depends not a little on the roughage they are getting. In case clover hay is fed, a mixture of corn, oats and wheat bran is a good feed, but some oil meal, cottonseed meal or both can be substituted for the wheat bran with economy, as they are cheaper sources of needed protein to balance up the ration than is bran at present prices for these concentrates.

GRAIN RATION FOR THE BROOD SOWS.

After reading an article in the Michigan Farmer I am stimulated with the desire to know just where I am at with a bunch of brood sows. At present I have seven brood sows which I am feeding as follows: Twenty-one lbs. of ground feed, $\frac{1}{2}$ bu. corn on ear and $\frac{1}{2}$ bu. carrots and potatoes per day in two feeds. The ground feed is composed of 600 lbs. of corn meal, 300 lbs. of middlings, 200 lbs. of buckwheat bran and 100 lbs. cottonseed meal. Roots are cooked and fed mixed with the grain feed and fed warm. Cornstalks are fed to the sows; as many as they will eat. Would you advise me to feed any more of the feed or change the ration in any way?

J. L. K.

The ration given is not badly balanced in its content of nutrients, and the roots give it a desirable degree of bulk for the brood sows. The worst fault that can be found with it is the use of cottonseed meal as a concentrate to provide the needed protein to balance up the corn in the ration. Cottonseed meal seems to contain some property which is deleterious to pigs, and if fed to them for a continuous period often causes serious trouble and sometimes even death. Of course, where fed in relatively small quantities such as are given in this ration, there is comparatively little danger where the feed is not used for too long a period, but there are too many concentrates available which will answer the same purpose to make it wise to take any chances on this proposition. Oil meal or gluten feed, or even tankage in small quantities could be substituted for the cottonseed meal in this ration with advantage.

Buckwheat bran varies greatly in feeding value, depending on the percentage of shorts present in it. The hulls probably have a smaller feeding value for hogs than for cows, on account of the excess of fiber which they contain, but this would not be as objectionable for the brood sows as for young or growing pigs, and there is probably no occasion for eliminating this feed from the ration. The amount of corn used might perhaps be decreased with advantage, although if the sows are given plenty of exercise there will be little danger of complications from its use in the proportions named, especially with the succulent feed and coarse materials mixed with it. If clover hay is available it might be substituted for the corn fodder, as it will add some protein to the ration. This, however, would be a small factor, and a variety of forage which the sows will relish would serve the best purpose.

UNTHRIFTY FALL PIGS.

I have some small fall pigs that do not thrive. Am feeding some corn with skim-milk heated and mixed with white middlings. Do you think if I had some tankage that they would do better?

St. Joseph Co.

Since you have skim-milk to feed the pigs, the tankage would not be necessary. I would certainly advise tankage if you had no skim-milk, because growing young pigs need a good per cent of protein in their food, for the development of the vital organs of their bodies, and the muscular tissues, but skim-milk, warmed, and mixed with wheat middlings with a proper amount of corn in connection with this, would be as good feed as you can find for young, growing pigs. As a matter of fact, this is just what I am feeding my

pigs, and just what I would recommend everybody to feed to young growing pigs. I don't see how you could get a better ration for them. If there is one, I do not know of it.

And yet you say the pigs are not thrifty. Now, this unthriftiness may not come from the feed. There are a great many other things that might cause the pigs to be unthrifty, besides the feed. In the first place, are you feeding them all they will eat up clean every day? Your growing pigs want a good liberal ration if you want them to do well. They must have it. You can't expect pigs to grow and develop on a maintenance ration. They want all they will eat up clean. If you will make a good thick slop out of wheat middlings and skim-milk, and feed them all they will eat up clean three times a day, or twice a day even, then give them all the corn they will eat up clean once a day, then if your pigs aren't thrifty and don't do well, it is not on account of the food, but something else.

If your quarters where they sleep are clean, warm and dry and they get this good feed, it may be that they have stomach or intestinal worms. It may be that they have been overfed, and have indigestion, and there might be a number of causes which would produce unthriftiness. Do you give them salt regularly? Every time you mix up middlings and milk, you ought to put in a certain amount of salt, enough so that each pig would have a level teaspoonful every day. Hogs ought to have salt as well as sheep or cattle or horses. You can't keep their digestive organs in good condition, unless there is a certain amount of salt in the food.

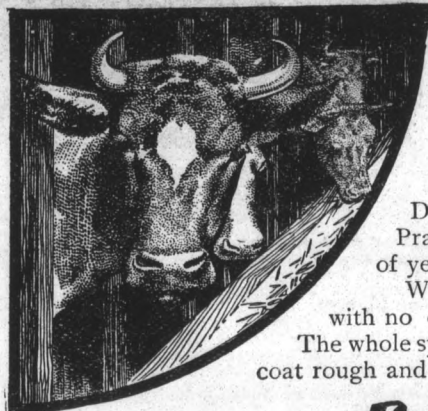
Young pigs are liable to contract indigestion, where they have but little exercise and no access to the ground. Once in a while a little lime water is a good thing to put into the feed. This helps to correct acidity, or indigestion, and it is a most excellent plan to have some charcoal. As a matter of fact, it is almost necessary, if you want to keep pigs in good condition, so far as digestion is concerned, to have some charcoal for them to eat once in a while. You can burn cobs, in a closed receptacle away from the air and get charcoal in this way, or you can burn pine wood, or any kind of wood and make your own charcoal. And it ought to be fed liberally. Keep it where they can get some of it every day, and you will be surprised to see how much of it pigs will eat. But if you can't get charcoal conveniently, then give them wood ashes.

Our pigs on the farm are kept in pens with 10 or 12 pigs in a pen, in the winter season. Every time I go to the farm I carry out a good big pail of ashes, and dump into the pen. One would think that it was a better food than their corn. Now there is a certain amount of charcoal in wood ashes which assists in keeping the stomach in good condition, and then, of course, there is carbonate of lime. This latter corrects acidity, and it is a splendid thing for young pigs. In fact, I think once a week, young pigs ought to have wood ashes, even if they have pure charcoal. The lime in the ashes touches a spot that nothing else which I know of, will touch. It is a good plan in the winter season to go out into the pasture occasionally and get some old sod for the pigs. Dray up quite a lot of it, and throw some of this dirt and sod over into the pen quite frequently. It helps to keep pigs in good condition.

COLON C. LILLIE.

Some of the farmers who bought old ewes in the past autumn for \$2.50 to \$3 per 100 lbs. have returned them to market after pasturing them in corn fields, and got \$3.75@4. Other stockmen are roughing the old ewes through the winter, expecting a lamb from each ewe during the coming spring. A short time ago some fat little 67-lb. lambs were returned to market from a Wisconsin farm and sold for \$6.50 per 100 lbs., having nearly doubled their weight and brought \$1.50 per 100 lbs. above first cost as feeders. About the same time lambs that cost at the start \$6.50 or more in the Chicago market as feeders were returned to market and sold at the same or lower figures, having been fattened none too well. Feeding wethers that cost \$4.25 in Chicago have been returned to that market fattened and sold for around first cost. The sheep feeding industry is an extremely uncertain one and calls for a lot of thinking. Feeders cost too much money last fall, and overproduction of mutton has made low prices in the markets of the country.

Milkers and springers have sold irregularly of late in the Chicago stock yards, much of the time the eastern demand being very poor. Lower prices for dairy products have checked the general demand from dairymen, and the eastern demand has fallen off materially. Backward springers were sold to killers, canner prices prevailing for the poorer cows offered on the market.

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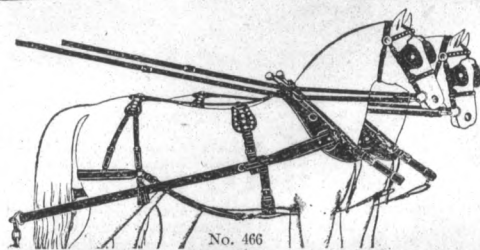
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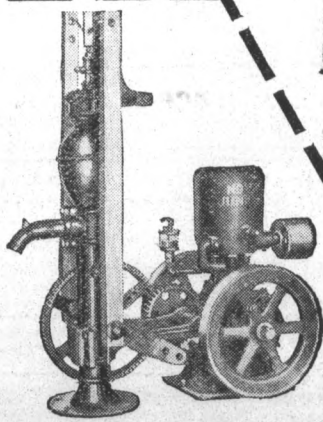
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Atrophy of Foot.—I have a young horse that showed foot lameness some eight weeks ago and now the hoof seems to be caving in just below coronet on both sides and I would like to know what had better be done for him. L. V. S., Butman, Mich.—Clip hair off coronet and apply cerate of cantharides once a week. This ointment will slightly blister and will doubtless stimulate a healthy action. If the foot is feverish apply lanolin to wall and sole daily.

Chronic Founder—Splint.—I have a horse that is sore in both front feet, caused, I imagine, by being foundered. I also have another horse that has a splint on each hind shin. One of them causes a little soreness, but the other is all right. J. H., Sand Lake, Mich.—Apply one part red iodine mercury and 10 parts cerate of cantharides to coronet once a week. Also apply one part red iodine mercury and eight parts lard to splint once a week. The horse should be given rest.

Distemper—Chronic Cough.—I have a young horse that had distemper seven months ago, and ever since he has been troubled with a hacking cough. F. P., Milford, Mich.—If his throat is swollen apply equal parts spirits camphor and tincture iodine twice a week. Also give a tablespoonful tincture opium, tea-spoonful tincture belladonna and a tea-spoonful of tincture nux vomica at a dose in feed three times a day.

Rickets.—I have six pigs six months old that seemed to be thriving nicely until a few days ago; now they seem to be losing control of their legs. J. T., Nessen City, Mich.—Keep your pigs in a dry, warm, comfortable place and instead of feeding them corn, feed oats and oil meal; also feed them some roots and give some air slaked lime with each feed, ½ a tea-spoonful at a dose is about right for each six-months-old pig.

Corn Bound.—I would like to know what can be done by my laying hens that seem to overeat until their crops become gorged, causing the hens great uneasiness and difficulty in breathing. I feed them corn and oats ground in a hot mash mornings and whole at night. They are also fed some apples and cabbage and they exercise some. I forgot to say that I occasionally feed them some cooked potatoes and other roots. I have given the sick fowls castor oil and corn oil but they seem to die. What do you advise me to do? G. S., Washington, Mich.—Whenever I am called to treat such a case as you refer to I immediately clip off the feathers, apply a disinfectant or antiseptic solution to skin, cut crop open and remove its contents, then stitch up wound with silk or catgut and apply peroxide of hydrogen twice a day and some boric acid a few minutes after each application, a few days later remove the stitches and the fowl is all right. This I advise you to do without hesitating a moment, as it is not a difficult operation.

Obstructed Teat.—I have a cow that just recently came fresh, which has a growth on end of one teat, making it difficult to milk her; one of the other teats seems to be sore and I am puzzled to know how it happened. W. J. K., Finland, Mich.—You should use a milking tube when milking her. It should be boiled for ten minutes before it is used, or dipped in a lotion composed of one part carbolic acid and 30 of water; this is done to prevent infecting udder. Cut off growth and apply boric acid to wound twice daily.

Sluggish Kidney Action.—Horses Cough. I have a brood mare that does not appear to be sick, which has plenty of exercise and is well fed, but she perspires some when in stable and I would like to know what to give her. Some of my other horses are troubled with cough. F. E., Howard City, Mich.—Give your mare a dessertspoonful of powdered nitrate of potash at a dose in feed twice daily until her kidneys act freely, and as often as you think necessary after that. Are you letting in sufficient fresh air to stable? Give each horse 1 dr. powdered opium and 1 oz. ground licorice at a dose in feed three times a day.

Stringhalt—Exostosis.—About a month ago my three-year-old filly commenced to jerk up both hind legs; she shows it most when first starting. This filly was thin most of last year but is now in good condition. She also has a hard bunch on lower jaw and I applied tincture of iodine which reduced it some. F. S., Howard City, Mich.—Give your filly 1 dr. ground nux vomica at a dose in feed three times a day. The jerking of legs could be corrected perhaps by a surgical operation on each hind leg, but your Vet. would have to do this work. Apply one part red iodine of mercury and eight parts lard two or three times a week, to bunch on jaw.

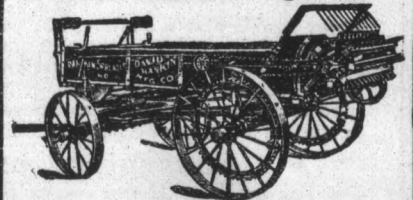
Mare Had Twins.—My 17-year-old mare that was bred the 14th of June, 1910, had twin colts a few days ago, both dead, and I would like to know what caused her to have a miscarriage. She has been fed enough grain and fairly good fodder to keep her in condition and when she lost her colts it seemed to cause her no pain. W. D. L., South Logan, Mich.—Your mare may have met with an accident; however, I am more inclined to believe that she suffers from contagious abortion and should be kept away from your other pregnant live stock for at least three weeks. Whewash stall where she stood, wet floor with one part carbolic acid and 50 parts water or use any of the coal tar disinfectants that are regularly advertised in this paper. Dissolve 1 dr. permanganate of potash and four or five parts of clean tepid water and wash out vagina through a small rubber tube with tin funnel once a day, using not less than two quarts at a time. Give her 30 drops of carbolic acid dissolved in a pint of water and mixed with feed once a day for 15 days. You ask if I think it advisable for you to breed her again? If you are thorough with the treatment I have suggested and she has no vaginal discharge you may do so.



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For Sale—Choicely bred registered Holstein Bulls ready for service, also younger ones. Farm near Willis, Mich. out of Detroit on Wabash. Write, **WILLIAM B. HATCH, Seabreeze, Florida.**

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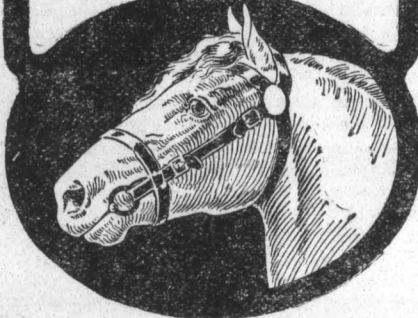
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Partial Loss of Power.—Five-months-old pig, raised mostly on sweet milk, has lost the use of hind legs. E. B. T., Belleville, Mich.—Feed him oats, oil meal, skim-milk, and add some air slaked lime to each feed. See treatment for similar ailment in this column.

Feeding Too Much Corn.—A few of my five-months-old pigs seem to be losing the use of their hind legs; they are fed plenty of corn and have a good dry pen to sleep in. G. M. Lapeer, Mich.—Feed no more corn but give them plenty of oats, some oil meal and roots; also give each one a half teaspoonful of air slaked lime in feed twice a day. Apply one part aqua ammonia, one part turpentine and four parts raw linseed oil to back daily.

Spasm of Larynx—Indigestion—Mange.—I bought a number of pigs lately that seemed to be in a stunted condition, when commencing to eat they often choke and cough as though in great distress, and some of my other hogs are troubled with pin worms. I also have a heifer whose hair seems to be dropping off in patches, but she has no lice. A. D. Elsworth, Mich.—Feed your hogs warm food and give them some powdered copperas and salt in their feed, 10 grs. of copperas and 20 grs. of salt is perhaps the right amount for each pig at a dose, and this medicine should be given twice a day. Apply iodine ointment to bare patches on heifer three times a week.

Nervousness.—I have a 12-year-old mare that continually shifts from one hind leg to the other; also shows a little lameness in one fore leg. I have thought she was tender in back. Our local Vet. prescribed kidney medicines for her, but she seems to be growing worse. W. M. Wayland, Mich.—Give her 2 drs. citrate potash and 1 dr. ground nux vomica at a dose two or three times a day. Apply equal parts spirits camphor and alcohol to back and fore shoulders once a day.

Chronic Cough.—I have an eight-year-old horse in fairly good condition, eats well and seems to feel well, but every morning he has a coughing spell which lasts for some time. He shows no symptoms of heaves. W. F. B. Ann Arbor, Mich.—I am inclined to believe that your horse has some irritation of throat, causing him to cough. Apply one part turpentine, one part aqua ammonia and six parts olive oil to throat once a day and give a dessertspoonful tincture of opium, a teaspoonful of fluid extract of belladonna and one ounce of powdered licorice at a dose in feed two or three times a day.

Inflammatory Rheumatism.—I have a hog that is fat enough to sell to butcher that seems to be lame and suffers some pain, and for the past few days it affected his appetite. Do you consider him fit for food? J. V. H. Mantua, Mich.—Your hog suffers from rheumatism and I know of no reason why his carcass would not be fit for food, and, all things considered, it would perhaps be best to slaughter him; however, if you want to treat him give 15 gr. doses of salicylate of soda three or four times a day. Also give 15 gr. doses of powdered nitrate of potash night and morning.

Eczema—Partial Loss of Power of Hind Quarters.—I have a two-year-old colt that suffers from an itchy, scurvy condition of skin; he is losing considerable hair and inclined to rub his tail. I also have a hog that I am fattening, which appears to be losing control of his hind quarters. J. B. L., White Cloud, Mich.—Your colt should be groomed well twice a day and apply one part bichloride mercury and 1,000 parts tepid water to itchy parts after grooming him. Also apply some vaseline occasionally. Now, regarding your hog, if he is fleshy enough to butcher I advise you to market him. Feed him a teaspoonful of air slaked lime at a dose in feed three times a day and discontinue feeding corn, and in its place feed oats and oil meal. Kindly understand starch, fat-producing food is the wrong kind to feed a hog suffering from loss of power. Your hog should be kept dry and warm.

Indigestion.—My six-year-old mare is out of condition; she is driven daily, traveling 15 or 20 miles a day, is inclined to bite herself, but has no sores on body. W. J. S., Dearborn, Mich.—First of all, give your mare 6 drs. of aloes, ½ dr. calomel, ½ dr. ground nux vomica and 2 drs. of ground ginger made into a bolus and given at one dose. This will purge her. Also give 2 tablespoonfuls of the following

compound powder at a dose in feed three times a day: Ground gentian, ginger, cinchona, quassia, fenugreek, bicarbonate of soda and charcoal; equal parts by weight and mix thoroughly.

Indigestion—Worms.—My eight-months-old colt is not thriving and he passes a few worms. I also have two yearling sheep that are not growing and are quite thin. F. H., Hemlock, Mich.—Increase your colt's grain ration, groom him well twice a day and give him a tablespoonful of ground gentian, a tablespoonful of ginger and a dessertspoonful of salt at a dose in feed two or three times a day. Give your lambs each a teaspoonful of the following compound powder: Powdered red cinchona, gentian, ginger, bicarbonate soda, charcoal and salt, mixed thoroughly, equal parts by weight.

Hard, Contracted Hoofs.—Two months ago I bought a horse that seems to have hard contracted hoofs and he travels as if a little sore. J. W. B., Beulah, Mich.—Stand your horse with fore feet in tepid water one hour a day and apply lanolin (wool fat) to hoofs twice a day.

Partial Paralysis.—I have a horse that seems to be partially paralyzed, although he is some better he does not travel right and has rather poor use of his hind quarters. W. N. D., Morgan, Mich.—First of all, your horse should be fed plenty of bran mashes or roots to keep his bowels open; besides, give him ½ oz. doses of fluid extract of buchu once or twice a day to keep the kidneys active. Also give 1 dr. ground nux vomica at a dose in feed three or four times a day. This is given to stimulate the spinal cord.

Cow Leaks Milk.—Can you give me a remedy for a cow that leaks milk? This cow loses about one-half of the milk she produces. A. S., Lawrence, Mich.—Either milk her three times a day or else use teat plugs. The Lawrence Publishing Co. can supply you from this office.

Looseness of Bowels.—A cow recently came fresh that keeps altogether too loose in the bowels. A. G. B., Reading, Mich.—Give her two tablespoonfuls of the following compound powder at a dose in feed three times a day: Powdered sulphate iron, powdered catechu, prepared chalk and ground ginger—equal parts by weight and mix thoroughly.

Acidity of Stomach.—My cows seem to be fond of chewing wood and rubbish, although they are well fed. E. P. A., Hudsonville, Mich.—Salt your cows well and give them each two tablespoonfuls of bicarbonate soda and four tablespoonfuls of powdered wood charcoal at a dose in feed two or three times a day.

Inflammation of Throat.—I have a two-year-old heifer that has a large swelling under her jaws that seems to come and go. Have applied white liniment, which I believe helps to reduce the swelling, but does not remove it. C. F. H., Allegan, Mich.—Apply equal parts tincture iodine and spirits of camphor once or twice a day and give 2 drs. iodide potassium at a dose in feed two or three times a day. It is possible that the bunch contains a watery fluid or pus, and if so it should be opened.

Indigestion.—Have a young cow that is with calf, that came fresh last August, but has a poor appetite and is giving only two quarts of milk a day. She is also stiff and very much out of condition. J. H., Saginaw, Mich.—Discontinue milking her and give her 2 tablespoonfuls of ground gentian, a teaspoonful of ground nux vomica, a tablespoonful of bicarbonate soda and 3 tablespoonfuls of powdered charcoal at a dose in feed or as a drench in a quart of tepid water three times a day.

Wart on Teat.—I have a two-year-old heifer that will come fresh in April, that has a large hard, scab-like substance on teat, which I would like to have removed. A. R. Grand Rapids, Mich.—I am inclined to believe that it is a sort of wart growing on teat and you had better apply vinegar once a day.

Periodic Ophthalmia.—Two weeks ago one of my sheep went blind and some time later three more lost the sight of one eye each and I would like to know how to treat them. J. E. S., Lowell, Mich. Your sheep suffer from infectious ophthalmia and you will obtain fairly good results by blowing a small quantity of calomel into eyes that are diseased, once a day. They should be fed roots, and clover hay, but not much grain while the eyes are sore; besides, they should be kept in a dark place, as a bright light always irritates a sore, inflamed eye.



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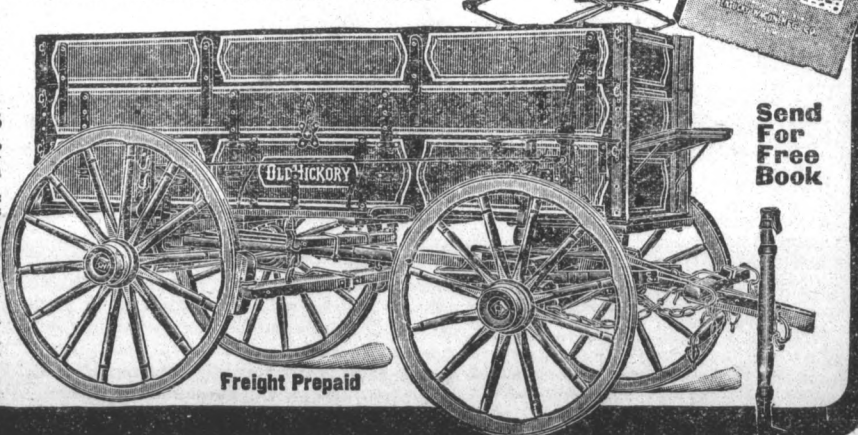
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DETROIT, FEB. 18, 1911.

CURRENT COMMENT.

At this writing the bill Reciprocity and drawn for the purpose of putting into effect the Canadian reciprocity agreement has been favorably reported to the House by the committee on Ways and Means, and is being considered by the House acting as a committee of the whole. In the meantime the administration is conducting an active campaign for the creation of public sentiment favorable to the measure. President Taft opened this campaign in person last week in a speech at the National Corn Exposition in Columbus, followed by a talk to the Illinois Legislature in session at Springfield, while various members of his cabinet are scheduled for speeches in different sections of the country this week in which the administration's reasons for putting the agreement with Canada into effect will be advanced.

In his address at Columbus, President Taft sought to quiet the opposition of the farmers of the country by advancing the argument that they would not be injured, but rather benefited by this agreement. In part he said:

"We have with pioneer energy pushed on to the Pacific and taken up all the good land. We are now spending millions to reclaim the arid and semi-arid lands of the great western desert. Should we not by taking down a useless and unnecessary tariff wall, bring within our agricultural resources the great plains of the northwest when they can bring to us what we need and that without hurting any of our own people?"

Speaking of the policy of protection which is involved in this consideration he said:

"For a long time the policy had little or no limitation. It was thought that tariffs on protected products could not be too high, that if all foreign products were excluded, competition would stimulate production and reduce its cost, and its price. The temptation to destroy competition by combinations became so great, however, that the party in its platform modified its policy and imposed the limitation that the tariff should be limited for purposes of protection to the difference between the cost of production in this country and the cost of production abroad with an allowance for a reasonable profit for the American producer.

"The principle of protection thus stated takes away the justification for any tariff whatever, by way of protection on articles imported from a country where the conditions as to labor and other circumstances are the same as in ours and thus makes the cost of production substantially the same.

"Canada is our neighbor on the north

for 3,000 miles. Her population is English, Scotch and French. Her soil is like ours. Her traditions are the same as ours. Her language is ours. Her climate is temperate like ours, except that her growing seasons are shorter and she cannot raise corn in any great quantities. She has a free popular government with a wage-earning class as intelligent and as well paid as ours. It is difficult to see in what respect that her farmers have any advantage over our own except a virgin soil in the far northwest."

Freely admitting that the farmers of the country constitute the greatest wealth-producing class of the country and that it is of the greatest importance to conserve their welfare, and that, therefore "anyone who would initiate a policy to injure the farmer has much to answer for at the bar of public opinion," President Taft continued:

"The greatest reason for adopting this agreement is the fact that it is going to unite two countries with kindred people and lying together across a wide continent, in a commercial and social union to the great advantage of both.

"The total production of corn in the United States in 1910 was 3,125,713,000 bushels, of which we exported 44,072,209 and used the rest in domestic consumption, chiefly in raising cattle and hogs, of which in live cattle and packing house products we exported in value \$135,985,212. The Canadian product of corn was 18,726,000 bushels, or six-tenths of 1 per cent of the total production of the United States. We exported 6,000,000 bushels to Canada—the American farmer is corn king. Reciprocity will greatly help him by increasing his supply of young and thin cattle, now very scarce, for feeding with his corn and making good beef.

"But it is said that the farm land of Ohio, Indiana, Illinois, Iowa, Wisconsin and other states is much more valuable than the land in Manitoba, Saskatchewan, Assinibola and Alberta, the four great northwestern provinces of Canada, and that to give Canadian farmers free entry of products raised on cheaper lands will be certain to lower farm lands in value in this country. Nothing could be further from the facts.

"The Canadian lands are farther removed from the Minneapolis and Chicago markets than the lands of Minnesota, Wisconsin, Iowa or Illinois. Then, too, the natural change in farming in this country is from the raising of grain for export to the raising of grain for farming consumption and development of the secondary products in the form of cattle and hogs. The live cattle are bought and fattened. The hogs are raised and fed. It is farming of this kind that explains the high value of farm lands in Illinois and Iowa.

"If the argument as to the disastrous effect of admitting the crops of the Canadian northwest to our markets on the values of our farm land is correct, then the opening of lands in Kansas, Nebraska and the two Dakotas in the two decades from 1890 to 1910 should have had a similar effect on the land of the older states. Now, what was the fact? The land in the older states became more devoted to corn and cattle and hogs, while the wheat and other cereals were left to the new lands. The effect was that the values of the land of the older farming states were in most cases more than doubled.

"The difference in the value of the acre between Manitoba and Minnesota is but little more than \$8, while the difference between Minnesota and Wisconsin is \$6; between Wisconsin and Illinois \$52; between Wisconsin and Iowa \$40; between Michigan and Indiana \$31. The figures show incontestably that the fear of a reduction in farm land values of this country by letting in Canada's products is wholly unfounded."

"It is impossible to doubt President Taft's sincerity in negotiating this agreement or in urging its adoption. Undoubtedly he believes it to be for the best interests of the country at large, and is just as sincere in the opinion that it would not prove detrimental to the interests of the farmers of the country, the conservation of which he admits to be of great importance. But is it not possible that, notwithstanding his broad public experience and undoubted ability as a statesman, he may have overlooked some phases of this problem insofar as it concerns the farmer, or made erroneous deductions from statistics upon which he has based his conclusions and arguments? Such a result would surely not be impossible, and possibly not unnatural in one who has not been in close touch with this important industry, nor viewed its problems from the personal standpoint of those engaged in it, and this possibility appears sufficient to warrant an analysis of this proposition in which there is such a wide divergence of honest opinion, as illuminated by President Taft's statements.

In this speech President Taft touched briefly upon some points which we believe have a most important bearing on the relation of this government to the welfare of the farmer. He stated that the shipment of Canadian wheat to the mills and elevators of the United States would not materially effect the price of American wheat, which is fixed by the world price which is made in Liverpool, on our exportable surplus. It is true that, except for a brief period in the spring of 1909, the price of our wheat has been fixed by the world price. At that time it will be

remembered that we had no exportable surplus, and our home demand forced the domestic price up to a point which was higher than the world price, an economic effect which was by many wholly ascribed to the operations of far-sighted speculators. In fact, until very recently, the price received by our farmers for practically all of their staple products has been the world price, less the cost of transportation to market centers, where the world price is fixed, since we have had an exportable surplus of nearly every product which they have grown, and notwithstanding the theoretical protection which they have been granted in our tariff schedules, it has only been in very recent years that this protection has in fact benefited them to any considerable extent. It is true that some of our most important products, such as corn which was mentioned as an example by President Taft in his Columbus speech, would not be affected by this agreement, as we will continue to have a large exportable surplus, tariff or no tariff. But one after another of our agricultural products have failed to show an exportable surplus in recent years and the natural consequence has been an increase in the domestic price for them above the world price level, amounting to all or part of the tariff premium. This has, upon various occasions, occurred with beans, potatoes, beef, mutton, dairy products and poultry and poultry products, all of which are staple Michigan products, and with others in only lesser degree, such as hay, barley, etc. The one product upon which a degree of protection has been enjoyed by our farmers for a continued period has been wool, and even this protection has been minimized by the skirting clause in the wool schedule which is a distinct concession to the manufacturer at the expense of the producer. But now it appears that we have reached a stage in our economic development, when many of the products of our farms will command a price which will include a portion of the tariff premium added to the world price, if the established policy of general protection is continued. As a consequence an insistent demand for a lowering of the cost of living has been heard in the land, a cry which has been heeded by the President, with the pending agreement as the result.

Let us, then, first attempt to analyze the past and possible future result of this policy upon our agriculture. The protection which has only begun to benefit our farmers has been enjoyed by other classes of producers for many years, with the result that the labor employed in other walks of life has been better paid and the capital invested in other lines of production has yielded a larger net return than that invested in farm land and equipment. The natural and inevitable result has been the cityward trend of our population which has alarmed our statesmen and gave birth to the "back to the land" movement, by which it has been attempted to keep more people on the farms by moral suasion, when economic conditions were pulling them the other way. Needless to say, this movement has not been productive of results as shown by the census figures recently made public, nor will it be successful until reinforced by the operation of well defined economic law.

President Taft implied in the speech above quoted that owing to the growth of trusts and combinations, competition had failed to keep prices down to a level which represents only the difference of cost of production plus a reasonable profit to the manufacturer, which is given as a reason for a limitation of the policy of protection. He might well have gone further and told us why the meat producing animals should be placed in the unprotected list, and fresh and canned meats, which are the finished products of the beef trust, which the government is fighting, should still be protected; why wheat should be admitted free and a duty be retained on flour; why rough lumber should be furnished our manufacturers free, and a tariff premium levied on the purchaser of the manufactured product. As a matter of fact, agriculture is the one industry in which there is and must remain absolutely unrestricted competition. In agricultural commodities competition will limit the price to the cost of production plus a very reasonable profit to the producer, for many, many years to come in this country, which has not yet appreciated its agricultural possibilities, to say nothing of reaching their limit.

Regarding land values, there is room for warranted difference of opinion with

President Taft as to the cause of the apparent great variation. Nature has been prodigal in her gifts of almost inexhaustible soil fertility to favored sections of our country, such as the prairie lands of Illinois, Iowa and other sections mentioned by President Taft, and it is an appreciation of that fact by our farmers, rather than their proximity to our market centers, which has raised their value above the values which prevail in those sections where nature was more provident of her virgin resources. She has as well been prodigal of her gifts of soil fertility in the provinces of the great northwest, and President Taft has well accepted the fertility of a virgin soil in his comparison of the advantages enjoyed by Canadian and American farmers in the production of commodities in which they would compete on an even basis in our markets if this argument were adopted.

But perhaps the greatest consideration of all has not been touched upon. The farmers of the country easily represent half of the purchasing power of the country, a power which has increased to the great benefit of our manufacturers in recent years, owing to the decline in our exportable surplus of foodstuffs. If, by the addition of the agricultural resources of Canada to our own, these conditions are changed; if, as suggested by President Taft, our farmers are compelled by competition to limit their production to secondary products, thus breaking up economic crop rotations which make for soil conservation, and as a consequence find themselves working harder and remaining poorer than other classes of producers with a similar investment of capital and labor, their purchasing power will be impaired and the consequent damage to other industries will be greater than the advantages gained by the slight reductions made in the Canadian tariff schedules under the terms of this agreement. Nor should those who are favoring it delude themselves by believing that the adoption of this agreement will end the matter, for, if our premises are correct, just as insistent demands will be heard for the removal of the tariff on other products. In reality, we believe the issue to be decided by congress is not limited to the pending agreement, but rather the question of continuing the established policy of protection all along the line or the adoption of practical free trade in all products in the comparatively near future.

If these deductions are fair, these conclusions correct, and there are many outside the industry of agriculture who substantially agree with them, is there a valid reason for, or a substantial benefit to be derived from the putting of this agreement in force at this time? We leave it to the reader to determine and bring his influence to bear accordingly.

What is done to influence the result must be done quickly. Undoubtedly early action will be taken by the House, and present indications are that the agreement will be approved by a small majority in that body. It will come to a vote in the senate before the final adjournment of congress on March 4, but the approval of that body is far less certain. Every reader should carefully study the problem in all its phases, and by personal communication or petition at once make his views known to both United States senators from Michigan and the representative from his district in congress, since, if the agreement is ratified by the senate, it may be amended so as to require further action by the House. Letters addressed to these gentlemen at Washington, D. C., will reach them, and the reader who believes this agreement to be detrimental to his interests and does not thus protest, should forever after hold his peace.

OUR LANSING LETTER.

Lansing, Mich., Feb. 14.—Another feature of Senator Leidein's highway bill is attracting attention beside the huge million and a half appropriation feature. There is little, if any, favorable sentiment for the proposed appropriation, but there is some interest in the proposal to place state highway matters in charge of a commission of three members rather than one. Under the present law when the term of the present commissioner expires, his successor will be elected by the people but if the Leidein bill should go through then the governor would be given authority to appoint three commissioners. In view of this fact there is some speculation as to who is backing the bill and what moves are to be made to attempt to secure favorable consideration of it.

The state highway department is only asking for \$500,000 for the two years and denies emphatically all responsibility for the Leidein bill. It is urged by the department that \$500,000 will take care of (Continued on page 195).

Magazine Section

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

WASHINGTON AND LINCOLN=FARMERS.

Washington's Interest in, and Appreciation of, Farm Life is Best Expressed in his Familiar Declaration that "Agriculture is the Most Healthful, the Most Useful and the Most Noble Employment of Man." From the Brief Account of his Last Days upon his Mt. Vernon Estate, presented below, it is Apparent that he Retained this Love for the Farm to the End of Life. Lincoln was Born to the Soil but, unlike the Father of his Country, Experienced the Hardships which Dire Poverty and Pioneer Life Impose. His thorough Understanding and Appreciation of Agriculture as a Calling—in his Opinion, the most Worthy Calling—are well brought out in the able Address, published below, which he Delivered at the Annual Fair of the Wisconsin Agricultural Society, in September, 1859, in which he Maintained that Thorough cultivation of the Soil Exerts a Most Beneficial Influence upon the Farmer Himself.

THE LATER FARMING DAYS OF WASHINGTON.

TO the patriotic citizen who makes a pilgrimage to Mount Vernon come visions, not of the strenuous life which Washington lived in the field and among the wild tribes and dense woods of the Ohio, but rather of the peaceful pursuits of an agriculturist during the last years of his life. He longed to get back to Mount Vernon. Its associations twined about his heart as the tender ivy twines about the lordly oak. He dreamed of many years of a farmer's life on his beautiful estate, but these, alas, he was denied. He retired with intense joy to the peaceful pursuits of tillage, hoping to round out his life to a good old age among the scenes of his young manhood.

One sees today evidences of the farmer Washington in one's rambles through the sacred grounds. He was nothing if not methodical. Up with the lark, he went at once to work, riding over the plantation, looking after the smallest details, planting, pruning, reaping, building up and cutting down. He called his daily trips to different parts of the estate "visiting the outposts," which was his daily duty during the war. After finishing his long term of official life he dropped naturally and gladly, as we may judge from his own words, into the routine of farm duties. Like the progressive farmer of today he began to repair the rents absence and forced neglect had made.

"In a word," he writes of himself, "I am already surrounded by joiners, masons, painters, and such is my anxiety to be out of their hands that I have scarcely a room to put a friend in or to sit in myself without the music of hammers and the odoriferous scent of paint." And Washington had many visitors. He was the newest and brightest star in the galaxy of fame, and distinguished foreigners who sought our shores always visited "Farmer Washington."

His amiable spouse, celebrated at one time as "the Widow Custis," aided him with her counsels and superintended the women's work on the farm. Washington himself greatly loved the rural beauty of Mount Vernon and was often found upon the knoll which fronts the mansion, gazing through the deer park upon the broadening Potomac that glistened with its myriad ripples in the sun. He kept a diary in which he carefully noted the doings of the day, the state of the weather, the daily expenses of the estate and sales of flour and grain. In a letter to his old friend and companion, Oliver Wolcott, then Secretary of the Treasury, he writes that he had "turned aside from the broad walks of political into the narrow paths of private life. To make and sell a little flour annually, to repair houses going fast to ruin, to amuse myself in agriculture and rural pursuits will constitute employment for the few years I have to remain on this terrestrial globe." Patriotic as ever, and with the good of the young republic at heart, the President had developed into the contented agriculturist. The output of Washington's grist-mill was eagerly sought by all and the Mount Vernon brand of flour was called perfection by discerning housewives.

Farmer Washington was a very busy man. The temper which he displayed at Monmouth when he reproved the laggard Lee rarely burst forth at Mount Vernon. Now and then little trials came to vex him in the shape of indolence of some farm hand or the tattle of a servant, and on such occasions he was not slow to reprove. But on the whole he "kept his head," as the saying goes, and was a

master respected and beloved by his "hirelings." Nor did he scorn manual labor. Blessed with a powerful frame, he lifted the heaviest stones upon the wagon, planted trees in whose shade the tourist can still repose at Mount Vernon and, when occasion required, delved like the common laborer.

After the agricultural pursuits of the day he often listened to pretty Nelly Custis, his wife's grand-daughter, at the

HOW THE FARM MAKES A MAN OF THE FARMER.

AGRICULTURAL fairs are becoming an institution of the country. They are useful in more ways than one. They bring us together, and thereby make us better acquainted and better friends than we otherwise would be. From the first appearance of man upon the earth down to very recent times, the words "stranger" and "enemy" were quite or almost synonymous. The man of the highest moral cultivation, in spite of all

days. Constituted as man is, he has positive need of occasional recreation, and whatever can give him this, associated with virtue and advantage, and free from vice and disadvantage, is a positive good. But the chief use of agricultural fairs is to aid in improving the great calling of agriculture in all its departments, and minute divisions; to make mutual exchange of agricultural discovery, information and knowledge.

And not only to bring together and to impart all which has been accidentally discovered and invented upon ordinary motive, but by exciting emulation for premiums, and for the pride and honor of success—of triumph, in some sort—to stimulate that discovery and invention into extraordinary activity.

I presume I am not expected to employ the time assigned me in the mere flattery of the farmers as a class. My opinion of them is that, in proportion to numbers, they are neither better nor worse than other people. In the nature of things they are more numerous than any other class. But farmers being the most numerous class it follows that their interest is the largest interest. It also follows that that interest is most worthy of all to be cherished and cultivated.

My first suggestion is an inquiry as to the effect of greater thoroughness in all the departments of agriculture than now prevails. To speak entirely within bounds, it is known that fifty bushels of wheat, or one hundred bushels of Indian corn can be produced from an acre. Less than a year ago I saw it stated that a man, by extraordinary care and labor, had produced of wheat what was equal to two hundred bushels from an acre. But take fifty of wheat, and one hundred of corn, to be the possibility, and compare it with the actual crops of the country. Many years ago it was stated in a patent office report that eighteen bushels was the average crop throughout the United States, and this year an intelligent farmer of Illinois assured me that he did not believe the land harvested in that state this season had yielded more than an average of eight bushels to the acre. The soil has never been pushed up to one-half of its capacity.

What would be the effect upon the farming interest to push the soil up to something near its full capacity. Unquestionably it will take more labor to produce fifty bushels from an acre than it will to produce ten bushels from the same acre; but will it take more labor to produce fifty bushels from one acre than from five? Unquestionably thorough cultivation will require more labor to the acre; but will it require more to the bushel? If it should require just as much to the bushel, there are some probable, and several certain, advantages in favor of the thorough practice. It is probable it would develop those unknown causes which of late years have cut down our crops below their former average. It is almost certain, I think, that by deeper plowing, analysis of the soils, experiments with manures and varieties of seeds, observance of seasons, and the like, these causes would be discovered and remedied. It is certain that thorough cultivation would spare half, or more than half, the cost of land, simply because the same produce would be got from half, or from less than half, the quantity of land.

It also would spare the making and maintaining of inclosures for the same, whether these inclosures should be hedges, ditches, or fences. This again

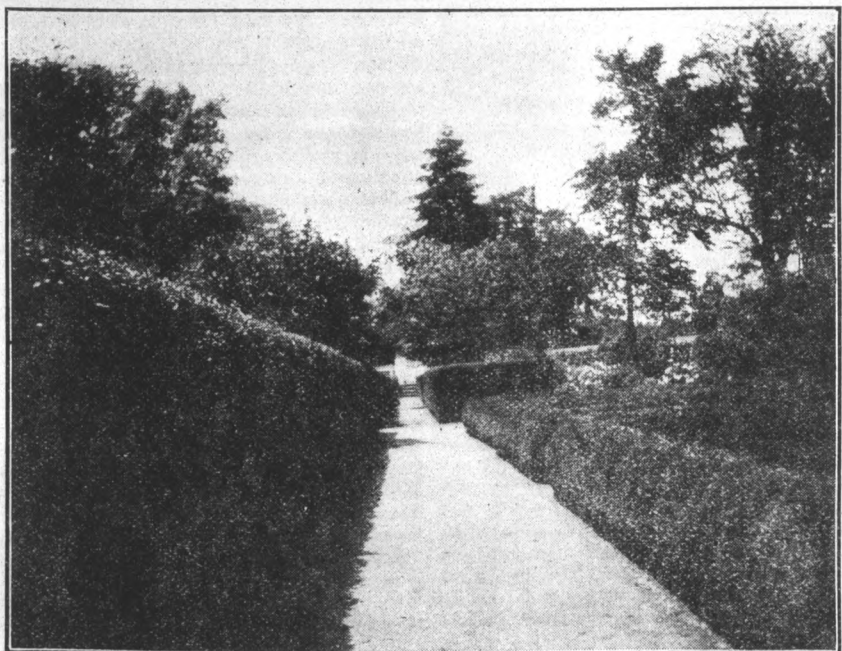


The Crude Kentucky Farm Cabin in which Lincoln was Born.

harpischor, an old instrument which is yet to be seen in the little room where her dainty fingers swept the keys. Nellie Custis was a great favorite with Washington, who was fond of children, especially girls. "I can govern men," he once said, "but I can not govern boys."

It was destined that Mount Vernon should not long enjoy the beneficent pres-

ence of its farmer lord. Washington, to the last day of his life loved the pursuits of agriculture. A lover of flowers, his flower garden was the largest and most beautiful in all that region. His famous boxwood is still green; a rose bush plant-



Beautiful Boxwood Borders in Washington's Garden at Mt. Vernon.

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small degree. They render more pleasant, and more strong, and more durable the bond of social and political union among us. Again, if, as Pope declares, "happiness is our being's end and aim," our fairs contribute much to that end and aim, as occasions of recreation, as holi-

is a heavy item—heavy at first, and heavy in its continual demand for repairs. I remember once being greatly astonished by an apparently authentic exhibition of the proportion the cost of an inclosure bears to all the other expenses of the farmer.

Again a great amount of locomotion is spared by thorough cultivation. Take fifty bushels of wheat ready for harvest, standing upon a single acre, and it can be harvested in any of the known ways with less than half the labor which would be required if it were spread over five acres.

The man who produces a good full crop will scarcely ever let any part of it go to waste; he will keep up the enclosure about it, and allow neither man nor beast to trespass upon it; he will gather it in due season, and store it in perfect security. Thus he labors with satisfaction, and saves himself the whole fruit of his labor. The other, starting with no purpose for a full crop, labors less, and with less satisfaction, allows his fences to fall, and cattle to trespass, gathers not in due season, or not at all. Thus the labor he has performed is wasted away, little by little, till in the end he derives scarcely anything from it.

The effect of thorough cultivation upon the farmer's own mind, and in reaction through his mind back upon his business, is perhaps quite equal to any other of its effects. Every man is proud of what he does well, and no man is proud of that he does not well. With the former his heart is in his work, and he will do twice as much of it with less fatigue; the latter he performs a little imperfectly, looks at it in disgust, turns from it, and imagines himself exceedingly tired—the little he has done comes to nothing for want of finishing.

Combining Learning with Labor.

The world is agreed that labor is the source from which human wants are mainly supplied.

Men, with their families—wives, sons and daughters—work for themselves, on their farms, in their houses, and in their shops, taking the whole product to themselves, and asking no favors of capital on the one hand, nor of hirelings on the other. It is not forgotten that a considerable number of persons mingle their own labor with capital—that is, labor with their own hands, and also hire men to labor for them.

The prudent, penniless beginner in the world labors for wages a while, saves a surplus with which to buy tools or land for himself, then labors on his own account another while, and at length hires another new beginner to help him. This, say its advocates, is free labor—the just, and generous, and prosperous system, which opens the way for all, gives hope to all, and energy and progress, and improvement of condition to all. If any continue through life in the condition of the hired laborer, it is not the fault of the system, but because of either a dependent nature which prefers it, or improvidence, folly, or singular misfortune. But now, especially in these free states, nearly all are educated—quite too nearly all to leave the labor of the uneducated in any wise adequate to the support of the whole. It follows from this that henceforth educated people must labor. Otherwise, education itself would become a positive and intolerable evil. No country can sustain in idleness more than a small percentage of its numbers. The great majority must labor at something productive. From these premises the problem springs, "How can labor and education be the most satisfactorily combined?"

This leads to the reflection that no other human occupation opens so wide a field for the profitable and agreeable combination of labor with cultivated thought, as agriculture. I know nothing so pleasant to the mind as the discovery of anything that is at once new and valuable—nothing that so lightens and sweetens toil as the hopeful pursuit of such discovery. And how vast and how varied a field is agriculture for such discovery! The mind, already trained to thought in the country school, or higher school, cannot fail to find there an exhaustless source of enjoyment. Every blade of grass is a study; and to produce two where there was but one is both a profit and a pleasure. And not grass alone, but soils, ditches, and fences—drainage, droughts, and irrigation—plowing, hoeing, and harrowing—reaping, mowing, and threshing—saving crops, pests of crops, diseases of crops, and what will prevent or cure them—implements, utensils, and machines, their relative merits, and how improve them—hogs, horses, and cattle, sheep, goats, and poultry—trees, shrubs, fruits, plants, and flowers—the thousand things of which these are

specimens—each a world of study within itself.

In all this book learning is available. A capacity and taste for reading gives access to whatever has already been discovered by others. It is the key, or one of the keys, to the already solved problems. And not only so, it gives a relish and facility for successfully pursuing the unsolved ones. The rudiments of science are available and highly available. Some knowledge of botany assists in dealing with the vegetable world—with all growing crops. Chemistry assists in the analysis of soils, selection and application of manures, and in numerous other ways. The mechanical branches of natural philosophy are ready help in almost everything, but especially in reference to implements and machinery. The thought recurs that education—cultivated thought—can best be combined with agricultural labor, or any labor, on the principle of thorough work; that careless, half-performed, slovenly work makes no place for such combination; and thorough work, again, renders sufficient the smallest quantity of ground to each man; and this, again, conforms to what must occur in a world less inclined to wars and more devoted to the arts of peace than heretofore. Population must increase rapidly, more rapidly than in former times, and ere long the most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil. No community whose every member possesses this art can ever be the victim of oppression in any of its forms. Such community will be alike independent of crowned kings, money kings, and land kings.

Let us hope, rather, that by the best cultivation of the physical world beneath and around us, and the intellectual and moral world within us, we shall secure an individual, social and political prosperity and happiness, whose course shall be on-

ward and upward, and which, while the earth endures, shall not pass away.

FARMING DAYS OF WASHINGTON.

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ed by his own hand has survived the storms of a century and the trees he tended with loving care are stately monarchs of the groves. At one end of the garden at Mount Vernon is a queer-looking octagonal structure in which Washington preserved his seeds, and not far away is the quaint little ice-house which furnished coolness for good Martha's cream and fruits. These structures reared by Washington, with the old spinning house and the kitchen, have changed but little.

Farmer Washington riding to church at Pohick or Alexandria, in his cream-colored coach was a sight for the country folk. His four horses, whose color matched that of the cumbersome vehicle, were kings of their species, and seemed proud to draw the goodly pair of Mount Vernon. Then indeed was the first farmer of the land the "observed of all observers," and black and white alike waved a salute to the lord of the manor.

Jefferson now-and then came to see the great man of Mount Vernon and Washington took pride in showing him over the estate, now and then stopping to give directions to his laborers. And when the days of seed time and harvest were over for the farmer of Virginia, when the last long night drew near, he whispered to faithful Tobias Lear: "It is well," and they laid him where he reposes today beside his gentle wife in the heart of his farm on the little knoll that overlooks the glimmering Potomac. There in the modest tomb, which is a Mecca for thousands, under the trees he planted and tended and within a stone's throw of the fields where he delved, sleeps the "first farmer of Virginia," the tender and immortal Washington.

THE GATES OF BAKAPPLEIN

By { ELIZABETH JEWETT BROWN
and SUSAN JEWETT HOWE.

Chapter XI.—The "Therrerbred."

Ned's interview with his sister was not very satisfactory to her. He was vexed and impatient that she should follow him and beg him to return to the man that he felt had outrageously insulted him; but her genuine grief at his departure finally softened him and he kissed her an affectionate good-bye, while trying to cheer her with his great ideas which he really believed would come true. He was so sure that he would be able to go into business directly for himself, and consequently make money, that she began to believe him, and she gave him her promise that if he needed her to keep house she would come if he should send for her.

"No you won't," he teased. "You will go to Manning Beverly. He will need you more than I do. You need not tell me that you are not already thinking of that."

She blushed, though her eyes were full of tears. "It will be a long time before that happens," she answered. "And I promise you faithfully, Ned, that I shall not marry him as long as there is the slightest chance that you will need me. Oh, how I wish you would not go away."

"I can't do anything here any longer," he answered decidedly. "The city is the place for opportunities. I have a little money saved up which I shall double at my first chance. Why, in five years I will make more money with my brains than Searls has made in twenty. I've been to a good school lately and I know how to manufacture the ducats. Don't worry about me. I will write as soon as I strike something I like. Look after Bruiser. He is a true friend and I'd like to take him with me if I could. Now both of you run back to the house and get out of this rain. Say good-bye to the Beverlys for me in case I should not see them, though I shall stop there a minute. I'll have to hustle if I catch that train. Once more, good-bye, and when next you see your brother you will be proud of him." He patted the dog, gave her a bear hug, and without daring to look back, for his own eyes were a trifle moist at the parting, he strode away, while Merle walked slowly homeward, calling the reluctant dog with her.

Ned ran in for a moment at the Beverly homestead for a final word with Grandfather Beverly and Manning. He found the old man reading the daily paper, with the baby near by, in a high chair demanding a good deal of his attention. Ned tossed the child in his arms with a jok-

ing remark that he expected he would be her uncle before long; a parting handshake and good wishes from the grandfather, a word with Manning at the barn who tried to dissuade him from leaving, then he was away again and hurrying along the lonely road to the station four miles away.

When nearly there he met Joe Green driving slowly along. The fat old horse was taking his time as his driver sat dejectedly on the seat, the reins hanging limp in his blue-mittened hands. He pulled up suddenly at the sight of Ned, and the horse began to nip at the frosty branches of the trees along the road.

"Goin' away?" he asked; "tryin' to ketch the train, eh, coz ef you be you've got plenty uv time as it is late, so I heerd at the station. It won't be along fer some time; the express will go through fast."

Ned stopped for a little chat. "What have you been to the train for. After young Joe? I saw him in Winthrop this morning. He said he was coming home on the train."

"That's why I went to meet him," answered his father. "I hadn't nothin' much to do and as he wuz goin' to bring home some clothes and things, I hitched up. I wonder what's keepin' him," he questioned anxiously. "Yew didn't happen' tew see him drinkin', did ye?"

"Well, he was following Jimmy Malley around pretty close," Ned answered. "He was considerably happy the last I saw of him."

Joe straightened up suddenly. "Wall, ef he had got in with that feller he wouldn't let go on him until he wuz drunk as a billed owl. That's no knowin' what 'ull happen tew him nor when he'll git hum, so I'm goin' fer look after him." He turned his horse around. "Get in," he said cordially, "ef yew air goin' to Winthrop yew might as well ride with me, fer that's whar I'm goin'. Ef the train is as late as they said it would be yew will git thar as quick with me as ef yew waited fer it."

about King; then he asked abruptly what the man had done to him.

That was a new way of talking and it pleased the boy. Searls had demanded the knowledge of what he had done to King, but the man's shrewd way of placing the blame elsewhere, thereby exonerating him, caused Ned to open his heart freely to the one person to whom he felt that he could confide the whole subject without fear of blame for what he had done. His own conscience troubled him enough without anyone else condemning him, and feeling sure of Joe's sympathy from the start to the finish, he told all, and when he had concluded there was no dirty trick of King's which Joe did not know.

"Wall," he said reflectively, "I ain't a'going ter say that what yew done was jest right and proper; but again I ain't goin' ter say that it wuz wrong. I'm glad yew got the better uv the skunk, but I wish thar hadn't been left a loophole whar-by he could git the better uv yew."

"I'd like to see him try it," blustered Ned. "I guess if it came to a court of law I'd stand as good a chance as he would."

"I dunno about that!" Old Joe shook his head. "I've lived a long time and I've seen a hull lot uv lawsuits in my day and I never yit saw one that the man with money didn't git the best end uv it ef he cared to fight it long ernuff. It's best fer yew to keep still about this King racket fer a spell. Yew jest leave it ter me. Bimeby he will git rope ernuff to mighty nigh hang him, and then I'll be on hand and help ter slip the noose. Thar ain't no sech thing as law and jestice fer the poor man that hes stole a leetle. If a man wants ter steal he's got ter go in hull-sale; rob a hull town, or steal a railroad, or bust a bank, er suthin' big; he musn't stop with a few dollars; ef he does he'll be pinched; but jest let him dew like King, and folks will be afeerd to tackle him. Old Man Beverly who knows a lot about sech things told me that thar wuz a man wunst in Grease (fancy callin' a town Grease) but he sez thar wuz sech a place; and this man, Solon, said that laws wuz like cobwebs; the poor got ketched in 'em and couldn't git out; but the rich, even ef they did git ketched, they could break loose; so I've ben thinkin' that perhaps that wuz why they called that place Grease; it wuz greased fer the rich so that they could slide erlong easy."

Ned laughed. "Grandfather Beverly is the youngest old man I ever knew. I've heard him make a good many comparisons between the customs of today and of ancient Greece."

"Yas," assented the other reflectively, "he allers hit his stories down pat. He told me another wunst in speakin' about King. He said thar wuz a rich king, or a man suthin' like a king in them days that said he wasn't happy, fer no matter what he had thar wuz a big sword a hangin' by a hair over his head the hull time. He called the—the—wall, I don't exzakly reckonember, but it wuz a dam—dam—wall, some kind of a dam sword ennyhow, whitch this king wuz constantly afeard wuz goin' ter fall and chop his mean ole head off. He said that the sword wuz hangin' over King's head and that it would fall some day and fall hard."

"The Sword of Damocles," explained Ned, soberly.

"That's it," continued Joe, "an' I've a haf notion that I'll be thar when that sword draps on King's skinny ole neck. And I've ben thinkin' that thar's a sword hangin' over ev'ry one uv us all the time. And that sword is the mean things we've done all our lives. An' that's what I mean, Ned, by sayin' that while I'm glad that King got it in the neck fer wunst, yet I'm sorry that you've done anything that wan't jest square and honest, fer I'm afeard that it will be hangin' over your neck all the-rest uv your life. Now all the drinkin' and mean things I ever did air all put together in one sword a hangin' over me in the shape uv my boy Joe. I don't know what'ud become on him, and that's the reason I'm goin' to Winthrop to look after him. I begin ter think that I'm gittin' all that's comin' to me, an' gittin' it perty hard."

Ned did not answer. The old man puffed away at his pipe for awhile, then he changed the subject and began asking the boy about his future plans. "You'll git ahead," he complimented; "thar never yet wuz a Jackson that couldn't make a dollar."

Such praise was not wasted and he drew a roseate picture of what he intended to do, enlarging on the fact that once started he would not be long in piling up the money, boasting that when he returned

(Continued on page 187).

BEST OF ALL.

BY MILDRED M. NORTH.

A cherry tree in a garden grew
As fine as fine could be;
A little lad had a hatchet new—
A happy boy was he.

He tried its edge on the kindling wood,
'Twas quickly cut in two;
Then on the tree that near him stood—
The chips they gaily flew.

Whack! Whack! Whack! What fun to
chop
And see the splinters go!
What fun to hear the tree go flop
And see it lying low!

Then when the sun was in the west
His father, walking by,
Beheld the tree he liked the best
Cut down. And with a sigh

He saw the hatchet by the tree.
He called young George and said,
'My son, 'tis very plain to me
You've been to mischief led.'

"I did it," George then made reply;
'I'm sorry as can be,
But, father, dear, I will not lie
For just one cherry tree.'

"My boy," the father said with joy,
'Your actions greatly please;
I'd rather have a truthful boy
Than many cherry trees.'

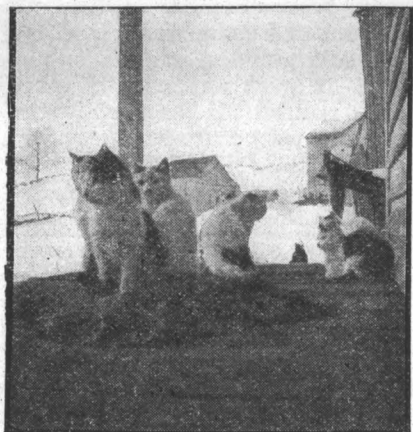
"THAT NO 'COUNT DAN COLBY."

BY EVA MILLS ANDERSON.

Often as Mrs. Cashman had heard of
Dan Colby since she came to live at "The
Clearing," she had not yet seen him.
'He ain't nobody's fool, Dan ain't,' said
Mrs. Thompson, the boarding house cook,
'but he's just daffy 'bout toads an' hop-
pers an' sech like.'

Dan's mother was also confidential re-
garding her son to the young bride of the
mill owner. "There hain't nothin' bad
'bout Dan," she said, "but he won't do
nothin'. We tried sendin' him to school
but he played hooky haf' the time. The
teacher said he got his lessons like a
house afire when he was thar, but the
trouble was to keep him thar. We
couldn't do it, neither could the teacher.
Then we reckoned we'd set him to work.
The company 'd pay him a dollar an' a
haf a day fer deckin' logs but, land, Mis'
Cashman, he'd work till he caught sight
of a new bug or hear a bird's song he
didn't 'zactly know, an' then he'd drop
everythin' an' light out fer that critter.
The company didn't pay him no dollar
an' a haf a day fer that kind o' business
very long, I tell you. Sence then we've
let him run wild like. Seemed as if there
wa'n't no use tryin' to make him do any-
thin'. Still Dan isn't bad. There hain't
no better hearted boy in The Clearin',
only he's just no 'count."

Mrs. Colby wiped her eyes as she con-
cluded, a look of perplexity on her honest
motherly face as she mentally tried to
solve the problem how she and her hard-
working husband came to be the parents
of such an idle, irresponsible lad as Dan.
The first time Mrs. Cashman saw



Faithful Guardians of the Granary.

young Colby he was bending over a pool,
which was fenced off from the main cur-
rent of the river by a palisade of boards.
She knew him instantly from his occu-
pation and the photograph she had seen
adorning the center table in his mother's
parlor. A long, lanky figure, a mop of
auburn curls crowning a well-shaped head,
and a certain noticeable alertness in ev-
ery motion. She stepped to his side. Dan
had recognized her as soon as she came
in sight but he made no other acknowl-
edgement of her presence than a glance
from his smiling gray eyes.

"What are you watching, Dan?"

"Nothin'," without raising his head.

"What are those long-legged things
sprawling around there?"

"Why, don't you know them? Them're
tadpoles. I'm tryin' to see them make
themselves into frogs. They do make

frogs," he added positively, as if he ex-
pected her to contradict him, "I've
watched 'em do it."

"Of course they do," she responded
heartily. "I've never seen them do it but
I've read about it in books. I'd like to
watch with you if you'll allow me."

Dan was gratified. Here was an ally
where he had expected a critic. He
shoved a board toward her for a seat.
"Books? Do they put the like of that in
books?"

"Certainly they do. I have some at
home now. Come and look at them if
you would like to do so. What's in
these bottles, Dan?"

"Them's horsehairs, Mis' Cashman. Did
you know if you kep' horsehairs in a bot-
tle long enough they'll turn to snakes?"

"It would have to be a long time, I
guess," said she laughingly; then seri-
ously, "I've heard that, Dan, but scien-
tists say it isn't true. Have you ever
seen them do it?"

"No, I hain't, but Pete Gallagher says
he has many a time."

"Do you believe him?"

"I dunno. I'm tryin' the thing to find
out."

"Well, that's right. That's what I call
the true scientific spirit."

Dan blushed a little and his heart
warmed toward his companion at the
compliment. As he raised his head to give
her an appreciative glance he at once
fixed his attention upon a near-by tree
trunk. Mrs. Cashman followed his gaze
with wondering eyes.

"You see them things, Mis' Cashman?"

"What things, Dan?"

"Them walking sticks."

"I don't see any walking sticks," she
replied.

Dan stepped to a tree and pulled off
what she had taken to be a dry twig but
which proved to be a long, thin, grayish
brown insect with abnormally long legs.
He laid it on her hand.

"Ugh!" she exclaimed, shaking it off.
"Is that what you call a walking stick?
I thought you meant a cane."

"It's a walking stick," he asserted.
"Did you think it would hurt you? See
me." He picked it up, smoothed it gen-
tly, laid it tenderly against his cheek and
finally put it on his trouser leg, watching
its upward progress with satisfaction.

"It's brown now because the trees are
gettin' brown an' gray, but in the spring
when the trees are green it's green, too.
That's its way of hidin' itself. An' if it
breaks off one of its legs a new one will
grow. I've watched 'em do it."

"That's very interesting. Let us take
it to my house and try to find its descrip-
tion in my insect book," she invited.

Dan was ready to go at once but she
delayed for a further investigation of his
treasures.

"What are you keeping those weeds
for?" she asked.

"Just to find out some things about 'em
I don't know. Some of 'em is fly ketch-
ers, Mis' Cashman." Dan pulled a pitcher
plant from the bunch. "Look down in
thar. See the drowned flies an' bugs?
They go in fer a drink, I s'pose, an' then
—see them stiff hairs all 'long the inside,
pointin' down; them keeps the critters
from crawlin' out agin. Now what does
the plant want o' them bugs? Must be
it needs 'em or it wouldn't grow hairs a
purpose to keep the things down thar."

"That's a problem, Dan, which puzzles
a great many people. I wish I knew why
such plants catch and keep flies and bugs
but I don't. And I've read enough about
it to make me sure that men and women
who spend their lives studying such
things are no more certain what use the
plant makes of those insects than we
are."

"Gee! I wish I could find out fer 'em,"
exclaimed the young enthusiast. "It's
beautiful, ain't it?" he held the stalk off
admirably. "Hain't it wonderful the
leaves grow the way they do? I can
make a pretty good cup out of a basswood
leaf, but only natur can make a pitcher
like that." He replaced it almost rever-
ently and pulled out a reed. "Do you see
the eggs fastened to them leaves, Mis'
Cashman?" He handed her a small
microscope. "Queer lookin' eggs, hain't
they? 'Pear like a lot o' baby pipe stems
threwed together. An' you know, they
hatch out them worms you see over there
all gummed up in leaves—"

"Those are chrysalids, Dan, and the
worms are called larvae," interrupted
Mrs. Cashman.

"Yes'm. An' sometimes them worms
gum themselves up in sticks, an' a hunter
feller 'at was up here, the one 'at giv me
the magnifying glass, said sometimes they
gum houses in shells. Looks like they
wasn't mighty perticular what kind o'
places they live in. What I'm trying to

find out now is what them worms turn
into an' how they do it. I'm afraid,
though, the summer won't be long enough,
an' I've got to let 'em all go this winter."
His bright face clouded with a look of
sorrow.

"Why do you have to let them go,
Dan?"

"Because, Mis' Cashman, I'll be sixteen
my next birthday, an' when a feller gets
as old as that he's got to git to work
doin' somethin' to make a livin'."

"Don't you know, Dan, you could make
a living studying these things you are so
much interested in if you would only
learn enough to get at it in the right
way?"

"No, I don't know it. I s'pose you're
coddin' me, Mis' Cashman."

"I'm not telling you what isn't true, Dan,
if that's what you mean."

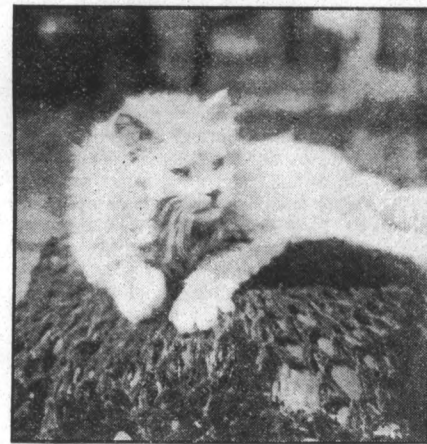
"I can see lots of fun in studyin' sech
things but I can't see no livin' in it."

"Nevertheless there are hundreds of
men and women doing it."

"An' makin' their livin' at it?"

"Certainly."

Dan stared at her, mouth and eyes wide



The Aristocratic Household Favorite.

open. "Is that real sure, honor bright?"

"It undoubtedly is, Dan. I wouldn't
deceive you about a thing like that, or
anything else," she added parenthetically.

"What would I have to do to get so I
could keep on studyin' natur' an' make
my livin' at the same time?"

"I can't tell you exactly, but in a gen-
eral way you would have to get an edu-
cation—go to some college, I mean—and
learn all you could there and elsewhere.
It would be a long, hard pull for you and
would take years of time. Maybe you
wouldn't think it worth your while, for
you can learn enough to make your liv-
ing, if that's all you want, as a mill hand
in six months—probably you know enough
now."

Dan stood up. Mrs. Cashman was sur-
prised to see how tall he was. She had
been thinking of him as a boy, but at once
he seemed a man. "Mrs. Cashman," he
began earnestly and with a dignity and
determination that impressed her as some-
thing new, an endowment he had that
moment received, "If that thing can be
done I'm goin' to do it. I don't care how
hard I have to work or how long it takes
me. You don't know how I love these
bugs an' flowers an' leaves an' stones. I've
been just about miserable all summer
'cause I reckoned this fall I'd have to
quit lovin' 'em an' go to work. It wa'n't
the work made me unhappy, it was the
quittin'." Dan had picked up a blade of
grass and was folding it around his finger
while speaking. "Isn't it beautiful?"
holding it out to his companion. "Look
at it through the magnifier an' see how
pretty it is. You like sech things, don't
you?"

"Indeed I do. But let us go to the
house now. I have a much better glass
than this. Bring along any of your things
you want to look at."

Delightedly Dan accompanied Mrs.
Cashman to her home, where his pleasure
and amazement at the wonders revealed
by her fine microscope were beyond
bounds. He fairly glued himself to it.
She could induce him to leave the glass
only by exhibiting the insect book. He
gloated over its pages.

"Writing such books as that is one of
the ways to make a living by studying
nature, Dan."

"Yes'm. How long do you suppose the
feller studied before he writ this?" he
inquired, eagerly turning the leaves, ut-
tering exclamations of joy at almost ev-
ery illustration and lamely reading here
and there bits of description.

"Here's the walkin' stick," he almost
shouted as he came to the picture. "Its
real name is mantis and that means a
prophet. Gee! don't this book tell a lot?
An' here," he exclaimed, after turning ov-

er some more pages, "is them eggs in the
gummed up leaves. They looked just like
this picture when I put them under your
glass. An' they hatch out into caddis
flies. Here's their photographs. I know
that fly but I didn't know its name, or
that it came from them worms. An' they
don't know all about it yet, Mis' Cash-
man; the book says they don't. My, if I
could only find out some of them things
fer 'em."

"Maybe you can, Dan, if you keep
studying."

Dan went from glass to book and from
book to glass until the mill whistle blew
for supper time. That suddenly made him
conscious that he had quite exceeded the
limits of a call. He reluctantly closed the
volume and returned the microscope to
its case.

"Come and use those hings whenever
you want to. I'll be real glad to have
you do so," invited Mrs. Cashman.

"Thank you, ma'am, but I'm goin' to
work to-morrow. I'm goin' to have a glass
an' a book like them fer myself. How
much do they cost, Mrs. Cashman?"

"Oh, I don't know exactly. You could
probably duplicate them for about a hun-
dred dollars."

Dan's face clouded, then it brightened
as he reflected that he must not weaken
at the first sign of a struggle. "I'll get
'em if they cost a thousand," he said
bravely. He left Mrs. Cashman's home
a few moments later, feeling as if life's
problem had been satisfactorily solved
for him. He called at the house of the
superintendent on his way home and then
surprised his family by announcing that
he had arranged to go to work the fol-
lowing day. They approved of that, but
when he divulged his plan to save his
earnings and use them in the future in
sending himself to college they scornfully
opposed any such prodigal wastefulness of
money and time.

"He's fuller of fool notions than a trout
is of eggs," sniffed his father. "The only
good thing about it is that before he gits
the money earned he'll have time to git
over 'em."

But Dan didn't "git over 'em." From
the time that Mrs. Cashman unfolded
that possible future in which he could
combine devotion to his favorite study
with earning his living, he never swerved
from his ultimate purpose.

Mrs. Cashman helped him remove the
objections his family felt toward his pro-
jected career, and before Dan had the
money earned for his college course his
father offered to lend him the amount.
But Dan resolutely refused.

"I set out to earn it for myself and I
want to stick to it," he replied, "so, thank
you, father, but please let me work it out
my own way." And his father wisely
said no more.

Three years after that first meeting,
Dan again walked up to Mrs. Cashman's
house. He had a paper in his hand.

"I believe," the young man said to his
friend, "I've been able to make some ob-
servations on the moults of the caddis
fly that have escaped other students. I've
written them out with the idea of send-
ing them to the Entomological Journal, if



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you do not consider it presumptuous to do
so. May I trouble you to listen to my
paper?"

Of course Mrs. Cashman gave the anti-
cipated permission and she listened with
great interest. "That's splendid, Dan,"
she approved when he finished. "You've
made every point perfectly clear. Send it
at once. But I can't see how you got
the time to do all that."

Dan smiled. "Well, when the other
boys were off 'having a good time,' I was
having one of my own in my study."

That paper was published by the Jour-

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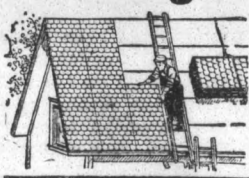
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nal to which it was sent. It attracted the notice of other students in the same field and made it possible for Dan to pay his college fees by acting as laboratory assistant. He was already known as a promising young scientist when he was graduated with honors a few years later. As the government was just then seeking an entomologist he was at once employed and sent on an expedition to the South Pacific, where he soon made a distinguished reputation.

No one at The Clearin' now wants to admit that he ever spoke of Dan Colby as "no 'count." Everybody there prefers to have it believed that he predicted Dan would be a great man some day. All are proud of the name he has won for himself, and every house has the portrait of "Daniel Colby, The Distinguished Scientist," cut from a popular magazine, as the chief ornament of the "front room."

EXPECTING THE BEST OF OTHERS.

BY CHARLOTTE BIRD.

"Every man has his price," croaked the pessimist dogmatically and in a voice so overbearing as to drown out every reply. "Every man stands ready to eat up his neighbor. The world is growing worse all the time. People are getting to be so mean that you can't trust anybody."

The words kept ringing in my ears all the way down to the station and even after I had boarded the train, for the worldly wise man was one whose opinions on the whole, I respected. It was a damp, muggy morning—just the kind when the mind is naturally inclined to dwell on the less cheerful and beautiful side of human nature.

Pretty soon my attention was arrested by a woman trying painfully to open a window to let fresh air into the unventilated car. A man, noticing her fruitless efforts, sprang across the passage to her relief and was soon successful. In this man, returning quickly to his seat, I recognized one of the very few exceptions to the worldly wise man's rule, one of the exceptions which prove the rule.

At the next station a tired-looking woman entered the car in charge of six children, ranging in age from one to ten years. She could not even pretend to control them and they swarmed at will all over the car without heeding her ineffective warnings. By and by, when the fruit vendor came through, a dignified, middle-aged man unobtrusively beckoned to him, paid him some money and in a low voice gave him some directions. A moment afterwards each little traveler was rejoicing in the acquisition of an unlooked for banana, while their modest benefactor, with the air of knowing nothing about it, sat gazing out of the window.

I had reached my destination and was walking up the street toward home. It was then that I noticed an old man driving along the street in a buggy, drawn by a restless colt. When he reached the street car track, he stopped, for in front of him, just between the rails, he had spied a fine cabbage head, dropped from some passing grocer's or market gardener's wagon. A car was approaching and clearly the old man's desire to possess the cabbage head was struggling hard with his prudence, which urged him to remain in the buggy where he could control his horse's friskiness in the face of the approaching car. I was beginning seriously to consider lending a hand by braving the deep, thin mud and securing the prize for the old man, when the car came up and stopped just short of it.

The smiling motorman had quickly taken in the situation and kindly asked, as a preliminary, "Would you like to have that cabbage head?" Then, almost before there was time for an answer he sprang from the car, stepped gingerly through the surrounding mud, picked up the trophy and with a happy face carried it triumphantly to the eagerly waiting hands.

I had hardly reached home before I heard of another act of kindness. A woman, going out of a concert hall, had found three tickets for the season's concert course, worth altogether, nine dollars. The owner's name was on the tickets. She quickly sought the proper channel for their immediate return to their owner. She did it at the cost of considerable personal inconvenience for she is a very busy woman. In a few hours, almost before there had been time to miss them, though they had passed through several pairs of disinterested hands, the tickets were delivered safe with the owner's mail. Now this act had nothing in it exceptionally honest or distinguishingly commendable.

All this while not one unkind, disagree-

able act had fallen under my notice. I had no reason to believe that any of these people had ever met before or that any of them had any personal reason in showing kindness to an utter stranger. The heroes were evidently just plain, ordinary people, such as we meet everywhere and every day, who had not the remotest idea that they were doing anything fine or unusual. Neither did they attract the attention of the unusual from the onlookers.

As I reflected, I began to doubt that the worldly wise man's wisdom was to be unreservedly accepted. I came to see that such little acts of kindness and courtesy are too frequent in our general life to excite general notice. We see them, are pleased, and then the matter passes from our minds, but the unpleasant acts, fastened in memory by our smarts as sufferers, make the deeper impression.

I wondered whether it were not better sometimes to suffer wrong from others than warp our own souls by going through life in an attitude of suspicion towards others. To us our fellow men are what we see in them; it is our privilege to live in a world of traitors or pickpockets, or a world of gods, or one of plain, everyday, good-natured men and women.

The man who faces the world with hostile sentiments toward the race, never can find humanity's best side; his very attitude challenges the response of other people's less lovable qualities. On the contrary, the one expecting the best and finest of each one, is met by a corresponding treatment. Native depravity is no more a race inheritance than real goodness of heart. Deep down in the heart of every normal human being is a genuine conscious or unconscious need to be good and kind to other people, even at the cost of some sacrifice to himself.

SMILE PROVOKERS.

"That man is a walking encyclopedia." "Quite so. Full of information of no particular interest or value to anyone."

Irritated Citizen—Aren't you ashamed of yourself going about with that street organ and leading such a lazy life?

Street Organist—Lazy life? Why, sir, life with me is one long daily grind.

Clancy—O'm after a ticket for Chicago.

Ticket Agent—Do you want an excursion ticket? One that will take you there and back.

Clancy—That's the sinse of me payin' ter go there an' back whin O'm here alridy?

"People who lie are always punished in one way or another."

"That's right." "You know of incidents which bear out my statement?"

"One. I used to exaggerate the size of my fortune when talking to a girl I used to call on before I was married."

"And she discovered that you were lying and despised you ever afterward?"

"No, she married me."

"Long introductions when a man has a speech to make are a bore," says former Senator John C. Spooner. "I have had all kinds, but the most satisfactory one in my career was that of a German mayor of a small town in my state, Wisconsin."

"I was to make a political address, and the opera house was crowded. When it came time to begin, the mayor got up."

"Mine friends," he said, "I haf asked been to introduce Senator Spooner, who is to make a speech, yes. Vell, I haf dit so, und he vill now do so."

KINKS.

Kink I.—Three Word Squares.

(First Square). 1. A staff. 2. Old. 3. Want. 4. A swirl. (Second Square). 1. Something fine. 2. A land measure. 3. A metal. 4. To tear. (Third Square). 1. Flesh. 2. A Pennsylvania city. 3. Assistance. 4. A trial.

Kink II.—Letter Conundrums.

1. What letter will change a ship into a bird? 2. What letter will change a valuable fluid into a sweet-smelling flower?

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 postcards of general interest, an imported dresser scarf, or a lady's hand bag. Where contestant or some member of his family is not a regular subscriber a year's subscription must accompany answers. Answers must not reach us later than March 11 as correct solutions will be published in issue of March 18. Address answers to the puzzle Department, Michigan Farmer.

Flatulency or Wind On Stomach

As It Is Commonly Named, Means That Decaying Food Is Making Gas.

This most serious condition is very prevalent and results most distressingly and fatally oftentimes. The stomach in cases of flatulency is unable to digest the food properly. Decay sets in, gases form, extend the stomach, force their way downward into the bowels, and if not relieved it extends upward pressing against the lungs, liver and heart, causing shortness of breath, belching, foul odors and many times sudden death.

Foods which are filled with gases, when taken into a deranged stomach cause flatulency rapidly, vegetables being especially given to this quality. Against such a condition the stomach can do but little, because these foul and poisonous gases affect its glands, muscles and tissues to such a degree as to incapacitate it almost at once.

These gases distend the stomach in all directions, preventing the contracting muscles from doing their regular duties, or if they do force the gas from the stomach it goes elsewhere in the system with even more harassing results, and then the decaying mass still remains to generate more gases.

The most effective methods for allaying flatulency is to remove the cause of gas making. An emetic will do this but the stomach will have the same trouble the moment new food enters it.

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THE GATES OF BAKAPPLEIN.

(Continued from page 184).

Searls would be willing to let him come in and help manage his affairs.

"I dunno about that," said his companion, doubtfully; "that ain't like the Jacksons. But I ain't afeard but that you'll win. The Jacksons air therrerbreds, all on 'em. I didn't yoost ter believe that thar wuz enny diff'runce between scrubs and therrerbreds, but I know now thar is. A therrerbred cow is as much better'n a scrub cow as a therrerbred hen is better than a scrub one. So 'tis with folks. Ef they ain't better, they ort to be, and so live up ter their breed. That's what I'm thinkin' about yew. Yew air a therrerbred and some day yew will prove yourself one. 'Taint havin' money; 'taint havin' fine clothes; it's suthin' diff'runt; suthin' in the blood, sech as havin' the right kind yew a grandfather much as ennything. Ennybody'd know you wuz a gentleman borned by your appearance and sech things, so now it is up ter yew to act like one. I ain't preachin', Ned, but I want yew ter prove to Searls that yew air one when yew git back. Yew've got ter act like a therrerbred or folks won't believe yew air one."

Ned laughed. "Never fear, Joe, but that I'll prove my mettle all right. The world is mine, now that I am my own master," he boasted.

The dull, dark day was settling down into an early night as they neared Winthrop. The road ran parallel to the track, which was several feet above it on a high bank, the opposite side of which shelved abruptly down to a deep pond. Passing under a culvert the road skirted the pond for several rods, then bore away to the town, the lights of which were twinkling merrily through the mist. They were remarking that it was nearly time for the express to come when Ned's keen eyes caught sight of a dark figure lying on the tracks. Even as his startled exclamation rang out, old Joe saw the same object, and with a cry of mortal terror that it was his son, Joe, he leaped from the wagon and started to his rescue.

But Ned was quicker than he. With one bound he reached the rail fence, sprang over it and began clambering the slippery, steep bank with his utmost speed, though it constantly crumbled beneath his feet. In the distance he heard the shriek of the oncoming express. Young Joe lay directly across the track. Bending every energy to the desperate climb Ned at length reached the rails and, grabbing the recumbent form, tried to pull it into safety. Far down the wet rails gleamed the headlight of the flyer. The warning shrieks of the engine rang in his ears; every second counted as he tugged and tugged away with every ounce of his strength, feeling not the slightest fear for himself as he wrenched and dragged the heavy body across the track by main force, succeeding at last in the final desperate effort with scarcely a second to spare as the train rushed by with every brake set. Then, blinded by the glare of the headlight and deafened by the rush and roar of the engine, he staggered over the bank with his sodden burden, and together he and young Joe crashed down the bank to the frozen surface of the pond.

A growth of bushes and a few stones broke their fall. Ned saved himself from striking the ice, but Joe broke through on the edge. The sudden splash of the cold water brought him to his senses somewhat, and as Ned pulled him back to safety the second time he looked up dully as his father, puffing and panting, scrambled down the slippery incline. "Whatsh up?" said young Joe thickly.

The old man grasped Ned's hand in both of his. "Thank God," he ejaculated. "I could never have got thar in time. Yew air a therrerbred, Ned Jackson, a therrerbred to the backbone, and the man that sez one word agin ye in West Winthrop will hev to answer tew me."

Chapter XII.—Grace Amidon.

Presently, after young Joe had sobered up enough to realize his narrow escape from a horrible death, they made their way from the pond around to the road and thence back to the fat old horse that was still standing where they had left it. Old Joe was too broken and shaky to talk, and Ned, now that the excitement was all over, felt the reaction. He, too, had been nearer death than he had ever dreamed of being, but for all that he was disposed to make light of his heroism. But after they had departed homeward he began to realize that he was sore and bruised from his rough tumble down the bank, and when he reached Winthrop he

decided to stay there over night, delaying his departure for New York until he was himself again.

He had a little money in the bank. It was not enough to go very far, and before he reached the city he had begun to wish that he had not played "smart" until he had had more capital to use, for he knew that he had but a pitiful amount with which to embark in business.

He was suffering from an exaggerated ego; while he was scarcely five feet eight, and of slender build, his ego was fully six feet and developed accordingly. He did not doubt but that he would meet success in his first venture, and after arriving in the city, where he had sense enough to secure modest lodgings, he started on a round of the brokers' offices, thinking that such work would soon give him an insight into the stock market, where he confidently expected to make his fortune.

He spent two weeks in the vain quest. No one wanted an office boy, he was told curtly by the important individuals who had charge of the private offices of the great. But he was not seeking such a position, for he was no longer a boy; what he wanted was to get in on the ground floor somewhere, but after a few days he began to realize the utter futility of such an undertaking. He had no backing, and he found that his swell appearance did not go very far in securing employment.

Then he turned his attention to salesmanship, answering the various advertisements in the daily papers; but everywhere he went he was asked for recommendations and, not being able to produce any, he was promptly turned down. Then he began to grow disheartened and cursed his own foolishness for getting into trouble with King and with Searls. If he had only had sense enough to have staid where he was, but the if was in the way and he could not help the past.

Living in New York was diminishing his capital alarmingly, so after a month of disheartening search he decided to investigate one of the many get-rich-quick schemes with which the papers were filled. Most of them called for more capital than he could invest, but finally he found a man who proved to him conclusively that if he would go in with him on a certain scheme, which he was about to spring on the unsuspecting public, he would receive a hundred per cent on his investment in three months. For a few days Ned held off, but the bait was so alluring that he finally parted with his money. For a few days he sat in a downtown office addressing and mailing envelopes to people in remote towns, sending out circulars relating to the wonderful development of the Fortunate Star Gold Mine, which needed but a paltry sum to produce fabulous riches; the poor people were to be the stockholders of this benevolent scheme, the circulars read—for at three cents a share they could buy all the stock they desired.

The fraud was so apparent to Ned that at first he could not believe anyone would bite; but his partner—the promoter—a man who, with his slick, smooth ways, constantly reminded Ned of a purring cat, assured him that they would respond, and speedily at that. And he was right, for in a short time the money began to come into the office, small sums the most of them, and as the promoter read the letters he chuckled over the game he was working.

"It won't be long, boy," he said, slapping Ned on his shoulder, "but that you and I will both get our money back from these suckers. I've worked this game before, and I know when it is time to quit."

Ned laughed. He felt that he was in the way then of making money and making it easily; but as his present finances were getting low, he intimated that he would like to see a little back on his investment before long.

"Tomorrow," said the promoter, "you shall have it all back at a hundred per cent profit. Then we will start some other scheme as soon as interest slacks up in the Fortunate Star. It is nothing to be squeamish about," as Ned remarked about the deliberate lies with which they were flooding the mails. "The public like to be fooled. If we don't do it, somebody else will. It takes brains to make money and those poor devils are happy thinking they are going to get rich, so nobody is hurt and we are on top."

Ned wrote a glowing letter to Merle that night, explaining that at last he was doing well. He did not go into details, but assured her that he had found a way to double his money by simply using his wits. He had landed on Easy Street and intended to stay there.

He found it was Uneasy Street the next morning, when on going to the office he found it closed. A fraud order had been issued against the promoter, who had unceremoniously fled, and so had Ned's capital and all the money which the Fortunate Star had brought in; and then, realizing that while lending himself to a scheme for the robbing of others, he had been outrageously fleeced himself, he thought best to keep his own counsel about the matter and returned to his lodging house so crestfallen and humiliated that for awhile he was too dumfounded to think clearly. Finally, when he realized that he, who had prided himself upon his own shrewdness, had walked into the trap with open eyes, his disgust and anger at himself were measured only by his imbecile cupidity in being trapped.

"It serves me right, serves me exactly right," he declared after a sleepless night. "Searls was right. I am a thick-headed, conceited fool who thought he knew twice when he didn't know once. Now that I'm up against it, with less than a dollar in my pocket, I'll begin at the bottom and see what I can find to do to earn a dollar. Good Lord, I started in to skin others and got skinned myself. And now I reckon I'm in for all that's coming to me, sure enough."

He felt several sizes smaller than usual when he started out to look for work, for he had come to the pass when work he must have if he wished to live. His one night of mental anguish had robbed him of the snobbishness which had dominated his life before; the self-conceit with which he had regarded himself as better and more clever than the ordinary herd had gone, for he had taken severe stock of himself and had come to the conclusion that he did not know how to do one thing, that was real labor, and do it well, and by the time the long day of fruitless search was ended he was bitterly regretting that he was untrained and unskilled and that he had wasted every opportunity he had ever had to learn to work with his hands.

He sold a few articles of jewelry, a ring, a fob, and scarf pin, to tide him over until he found work. Day after day he searched, but everywhere he met with repulse. Trained workers in every line were needed, but there was no chance for the novice and finally he decided to pawn his watch. It had been his father's, and it cost him a tremendous effort to part with it, but it would furnish him means to get away from the city. So, with the money he bought a ticket for a town in the Northwest which he had read was booming and, trusting to luck, turned his steps that way.

He was fortunate in securing work in a factory. He who had scorned day labor was now glad to get work; anything that was work, even at a dollar a day, was preferable to facing starvation and idleness, for the discipline of the stress of circumstances which he had brought upon himself was whipping the best part of his nature into life.

His letters home were infrequent. He wrote Merle briefly that he had decided to make a change, thinking there was better chance for a young man there than in the city. He hoped that she would not mistrust that he had met with misfortune and disappointment, but she read more between the lines than he wrote, though she never mentioned her suspicions in her letters.

After a few weeks he was suddenly discharged from his work. When he asked for an explanation there was none coming. He wondered considerably over it, especially as he was not able to secure more work in that town. Disturbed but not disheartened, he left for a nearby place where, after a few days' search, he found employment in a machine shop. He liked the work and was thinking of staying there and working his way up, when again he was told that his services were no longer needed. This time he pressed the boss for an explanation and was told that they never employed men who had left shady records behind them, and then Ned knew that the long arm of John King had found him there, and that wherever he went he would blacken his character, for, as postmaster of West Winthrop, he had the means of knowing Ned's location.

This was the hardest blow that had fallen upon the boy. He was then honestly trying to learn to work, trying to become trained in some honest employment, so that, in time, he would be able to rise to the top in that line at least. He had been working in the same class of manufacturing in which his father had made a success—the same kind of work that Mr. Amidon had offered him the



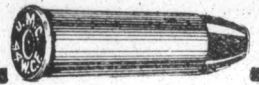
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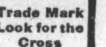
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chance to learn, which, if he had had sense enough to have proved himself worthy of acceptance, would have placed him then in the line of ready advancement, for he knew enough about business to know that a "friend higher up" is of untold value to the apprentice if he is deserving of promotion. He had lost all desire to live by his wits; he did not plan now to get the better of his fellows in sharp deals; all he wanted was the chance to become trained and earn an honest living, so that when he had saved up enough money he could go back to Mr. Amidon and ask him for the position that once might have been his.

He had left Bakapplein in the early winter, confidently assured of immediate prosperity by his own efforts. The spring had found him well-nigh penniless and anxious to leave the city; now the fall found him discharged from honest labor and, what was worse, the Sword of Damocles was hanging over his head, suspended by the remorseless force of the hatred of John King.

The discovery that he had been fleeced by the very means that he was using to fleece others, had been the making of him. Before that he had been a conceited boy; his adversity had also helped to develop what good there was in him, and this last crushing blow had stirred the very depths of his being. In his bitter humiliation his thoughts turned to the life he had formerly known; of the dream that he had cherished of some time winning Grace Amidon; and now that it seemed an inseparable barrier had been raised between them, his longing for her was stronger than it had been in years. Disheartened at his prospects, he was about to leave that town to try his luck in another when he was startled by hearing his name called.

He looked up. A carriage had stopped at the curbstone—a swell carriage from the hotel—and in it were the objects of his thoughts, Grace Amidon and her father.

The blood rushed to his face. He thought of his blackened hands, though they were hidden in well worn gloves; he thought of his well nigh empty pocket-book, and he wished that he might vanish from their sight. Even while he hesitated about speaking, they were talking to him eagerly, explaining that Merle had written that he was in the town and that they had been looking for him. And, before he really realized what had happened, he was in the carriage with them and driving to the hotel for dinner, for they would accept no excuses.

His embarrassment and self-consciousness began to wear off by the time they had dined, and he was once more his pleasant, cheerful self. Mr. Amidon's kindly interest in his welfare, his approval of his beginning at the bottom to learn the trade, all helped to restore Ned's equanimity. A self-made man himself, Mr. Amidon had no use for young men who did not begin at the foot themselves, and his respect and liking for young Jackson had increased a hundred per cent since he had learned that he was shifting for himself. His keen eyes had told him that the young fellow was having discouragements, and that the battle of life was proving strenuous, but he liked him all the better for the touch of adversity he was having—not that Ned spoke of it, but the business man could read between the lines—and he knew that if there was any good in him, any real metal, this severe drubbing would bring it to life; if there wasn't, prosperity would not come to him honorably; consequently Mr. Amidon hoped the test would be crucial enough to prove whether Ned Jackson was a true son of his father, or not.

"I was in hopes you would become a farmer, Ned," he said kindly. "Unless Searls should have a son, the farm will eventually fall to you as he would not wish it to pass out of the Jackson name, and as you are the last of the Jacksons it would naturally be yours. Why, that is one of the finest farms in New England, and I do not see how you could leave it."

"I don't like farming," he answered shortly. "In fact, there is nothing about it I like. It is all work, drudgery, and hard labor. I prefer any other work than that!" He hoped they would not insist on knowing why he left, but presently Grace asked him, pointedly, why he was not there.

"Why did you leave?" she persisted, as he hesitated. "I do not even except our own country home when I say that I think Bakapplein is the most beautiful place on earth. I can see it now; see all the beautiful sweep of wooded hills, with the valleys on every side dotted with

white farm houses which gleam with lights at night, and peep from behind groups of trees by day. With father I have been over a good share of this country and I have never seen anything lovelier than Bakapplein and its setting. I could live there always!"

Ned did not answer. He was struggling with the emotions her words conjured from the depths of his being. To be with Grace, to hear her voice, to be treated as her equal the same as he had always been in the old days before he had known adversity, was kindling anew in his heart the fires of love he had always entertained for her. His face flushed and he turned partly away. He had been a fool to leave Bakapplein. Perhaps, if he had stayed—

She interrupted his thoughts gently. "You are homesick, Ned. I can see it in your face. There is something troubling you. Is it the 'Helmweh'?" she asked, sympathetically.

"It is," he cried impulsively. "I have been homesick—homesick as a dog; but that does not do me any good. I can't go back."

"Why not?" she urged, her voice and face full of sympathy. "I wish you would tell me, Ned. I know there is trouble. Merle wrote me just a little. She does not really know, and she feels so dreadfully over your being away. Confession is good for the soul, you know, and I think it would do you good to tell someone your troubles. You wish, I know, that you had been a good boy while there and that you had not been ashamed of scrubbing the pig's pens." She laughed but there was an undercurrent of earnestness in her tones.

They were practically alone in one corner of the long parlor, for her father was so engrossed in his paper, at the farther end of the room, as to be oblivious of their presence. Her voice was so tender and pleading, and her pretty face so full of genuine affection, that Ned forgot everything but the great joy of once more being with someone for whom he cared and who cared for him. He did not intend to tell her of his hard luck and disappointments, but little by little, led on by her adroit questions, he told the whole story, beginning with his sharp dealings with King. When he had finished she knew all, even his get-rich-quick scheme, and up to his discharge that morning from the shop. He even told her, shame-facedly, of his spree on the ice, and the terrible shock he had received when he dragged Joe Green from death, which had cured him forever of any desire for drink. Why he told her all this he did not know. But there was something about her, something about her girlish purity which stirred every better impulse of his nature and as the penitent goes to the Confessional feeling as if he will thus purge his soul from sin by confessing his misdeeds, so Ned felt that in a measure he was wiping his past transgressions and errors from his conscience by confessing them, unequivocally, to Grace Amidon.

When he had finished he raised his eyes and looked her full in the face with a new feeling of relief. "That is all," he said simply.

"I know that you are glad you have told me," she answered slowly, "but there is one thing more you must do, for you will never be happy until that is done."

"What is it—die and forget it all?" he asked, bitterly.

"You must pay that money back to King," she said, firmly.

He stared at her in amazement. "Pay it back!" he repeated, aghast. The thought had never occurred to him before. "Why should I pay it back?" he demanded hotly. "King obtained it dishonestly. He stole one bushel in every twelve from the farmers. He had no more right to it than I. I did not steal it. You can't steal from a thief!"

"But you will become a rogue yourself easier than you will become an honest man if you do not," she returned, pointedly. "Ned, you must. You will never be happy nor successful until you get this burden off your conscience, and until you do this you will never be beyond the reach of his 'long arm.'"

He rose abruptly and, going to the window, gazed with unseeing eyes, through the network of telephone wires down to the busy street, but he saw neither the dingy, crowded trolley cars scudding through the cold rain, nor the crowds of hurrying people; instead he saw the white walls of Bakapplein standing in the midst of the well-trimmed lawn, with its protecting old trees stretching their leafy boughs to heaven. The electric lights were beginning to flash in the stores and



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glimmer in the trolley cars, for the drear, dark afternoon was giving place to an early evening, but he did not see them. Instead he saw the lights twinkling in the many windows of home. He saw little Yvonne hugging Bruiser, with the faithful Barb'ra perched in the big squirrel cage he had rigged up for her 'bedroom' to please the child. He also saw Searls and Nell, but before them all flitted the sweet face of Merle, looking at him with the same sad, anxious eyes as she did the day he saw her last. Then the scene faded and nothing but the clanging caws and wet streets were before him. He turned away with a shudder and met the pleading, pitying eyes of the girl who was so dear to him. "I'll do it," he said, resolutely, "just as soon as I can. I will pay every cent back if I can ever earn it."

"Don't say 'if,'" she cried, impulsively. "Of course you can earn it. What is fifty dollars? It is nothing at all. Why, you ought to save that in a month."

He smiled ironically. How little she knew the difficulty of earning money with unskilled hands; and how little she recked the chance of his being able to find employment soon. He would not trouble her with such forebodings, as he felt sure of himself again now that he had seen her once more, had talked with her and had been cheered and encouraged by her sympathy. They talked of hopeful, pleasant things for awhile, and she encouraged him to believe that once he was free from the burden of sin which was hanging over him like a cloud, that he would attain to any heights he wished. "You know that you are a Jackson," she said, appreciatively, "and you must not disappoint your father's friends. We all look to you to be the same kind of a man that he was, and you will be—just as soon as you step back into being the straight boy you once was. Father says temptation comes to every one, but, after all, the firms which endure are those that act on the square, and what is true of firms is true of individuals. And he also says that it is the 'breed' which counts more than the pasture, to use an agricultural term; so you must remember your breed, even if you are in pretty poor pasture now," she jested.

Ned's heart beat wildly. With her by his side he could accomplish everything. For a moment the wild words trembled on his lips, for he felt as if he could not let her go out of his life without at least one word of encouragement, but as he tried to speak she checked him abruptly, for she knew intuitively what he desired to say.

"You must not think of such things," she said decisively, with a ring of earnestness in her tones which made him ashamed of himself. "You must put all such thoughts away until you have made something of yourself and won back your past respectability. You have changed in many ways—I can see that—there is something manlier about you than there used to be—more self-reliance and less—less foppishness and evidence of the big head—" she continued playfully yet meaningfully. "But there is still room for great improvement. You like to appear a 'swell,' which is ridiculous in a boy that has to work for his living. No wonder you do not make any friends. Why, I would not care for a girl who, by her dress, tried to appear what she was not. You must make a man of yourself and not a dude. Throw away your cigarettes. You are ruining your health—your hand trembles now—no wonder you have not succeeded better, with such nerves, ruined by self-indulgence," she added severely. "Throw them away, Ned, and part your hair on the side; don't ever part it in the middle again. I do not like it in anyone, and especially in you. And when you have done those two things you will have taken a long step ahead in being the kind of man that papa will admire."

He received her words with good grace, and when he parted with the Amidons that night he was filled with new determination and hope. Acting on Mr. Amidon's advice he had decided to make his way east again, so he changed his mind about the train on which he had planned that morning and, instead, went on the evening train to another place some twenty miles eastward, where he hoped to find employment.

A mighty resolve had shaken the very depths of his being. He would be the kind of a man that Grace Amidon wished and believed that he would be, whether he ever won her or not. They were both young—not a word of love had passed between them—yet both knew each other's feelings. He was as sure of her affection for him, provided he proved him-

self worthy, as he was of his love for her—the strongest force of his being.

He put up at a hotel that night, asking for the cheapest room, for he knew that he must harbor every cent wisely; but instead of feeling humiliated by so doing he was proud that he had at last set his foot in the right direction. With Grace's encouragement and the inborn surety of her love, he felt that he could do anything and be anything. The mettle was in him and he would prove his worth.

He threw his cigarettes away gladly, promising himself that he would break entirely away from tobacco. Then, remembering her words about his hair he changed the parting, smiling to himself at the change it made in his appearance. He fancied he already looked more like a man. Then, very hopeful of the future, he went to bed to dream of Merle and of Grace, and both were at Bakaplein, awaiting his return.

(To be continued.)

LITTLE ESSAYS OF FACT AND FANCY.

BY CARL S. LOWDEN.

Present Joys.

"If a man knows he will sooner or later be robbed upon a journey, he will have a bottle of the best in every inn, and look upon his extravagance as so much gained upon the thieves. And, above all, where, instead of simply spending, he makes a profitable investment for some of his money when it will be out of risk of loss. So every bit of brisk living, especially when it is healthful, is just so much gained upon the wholesale filcher, death. We shall have the less in our pockets, the more in our stomachs, when he cries, 'Stand and deliver.'"

The above is an extract from a book, "An Inland Voyage," the author of which is Robert Louis Stevenson, who was an invalid but who lived life courageously. He did not know at what hour he would be taken by death, and so while he had life he made the most of it.

There is an old philosophy, "Eat, drink, and be merry, for tomorrow you may die." The ancients were too extreme. They lived riotously, and by their extravagances shortened that which they meant to enjoy to its fullest—life.

A sixteenth century poet, Robert Herrick, wrote a bit of poetic fancy that contains so much truth it will never die. It is just this: "Gather ye rosebuds while ye may, for old time is still a-flying." And speaking of rosebuds reminds of flowers and the silly custom of flower tributes for the dead. It is a poor kind of respect, it seems to me, that will only show itself when the person for which it is meant is dead and cannot see or hear.

Says some writer about one type of present joys: "An aspiration is a joy forever, a possession as solid as a landed estate, a fortune which we can never exhaust and which gives us, year by year, a revenue of pleasant activity. To have many of these is to be spiritually rich."

About present joys or being happy a prose writer declares: "A happy man or woman is a better thing to find than a five-pound note. He or she is a radiating focus of good will, and their entrance into a room is as if another candle had been lighted. We do not care whether they could prove the forty-seventh proposition they do a better thing than that, for they practically demonstrate the great theorem of the Liveableness of Life."

The same author says further: "His was, indeed, a good influence in life while he was still among us; he had a fresh laugh; it did you good to see him; and however sad he may have been at heart, he always bore a bold and cheerful countenance."

I don't know who the person referred to by the author is, but evidently while he was among his friends he enjoyed life in the present, and caused others to have present joys. How noble it must be to radiate happiness!

RETURN, OH GOLDEN DAYS.

BY RUTH RAYMOND.

Return, Oh golden days, return,
When life was full of youth's delight,
When flowers were blooming by the way
And overhead the skies were bright;
When welcome was the early dawn,
So full of joy, so free from care,
In the dear home where friends were true
And mother with her smile was there.

Return, Oh golden days, return!
Bring back the peace naught could destroy.
The earnest effort for the good
With simple longings of the boy.
The hope that as a guiding star
Still beckoned to the mountains fair,
While greed and hate were all unknown
And mother with her love was there.

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with delicate touch and most responsive action—a piano that delights everyone who plays it or hears it. Every modern improvement is found in the Channing and it is guaranteed absolutely by my iron-clad, binding 10-year guarantee.

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30 Days' Free Trial

No one can buy a Channing on long time, but any responsible person can have it for 30 days' free trial. Put it right in your home, play it every day, have your musician

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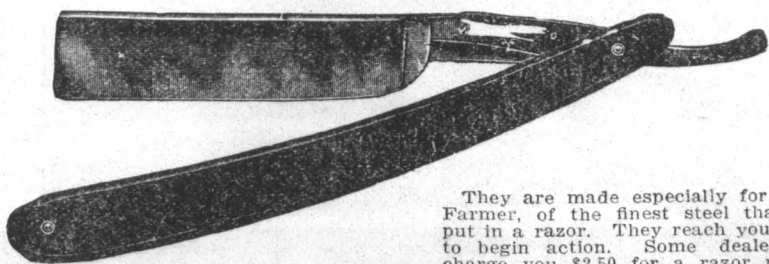
is strictly ball-bearing; has the newest drop head automatic lift; is easy running and sews a perfect lock stitch. Among the operations it performs are adjustable hemming, hemming and sewing on lace, the French seam, felling, tucking, binding, the French fold, braiding, darning, quilting, ruffling, plaiting, ruffling between two bands, edging stitching and piping and shirring. We positively guarantee that this marvelous variety and perfection of work cannot be duplicated by the attachments of any other family sewing machine in the world. The machine is complete and includes all the attachments. Write for illustrated catalogue giving complete descriptions.

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Woman and Her Needs

At Home and Elsewhere



A LESSON IN HAND-MADE RUGS.

By GILBERTA HOLT

TO be really up-to-date, now a days, a home must boast of some article of handcraft. Just at present the hand-woven rag rug, or silk hand-woven portiere seems to be most popular. Very recently these rugs have been developed by additions of fancy borders until their manufacture in the home would at first glance seem out of the question. On closer study, however, it is easy to follow the manner in which these new ideas were introduced.

But why confine one's attention to only the rag rugs? Once the principles of weaving are understood, possibilities open out in long vistas, so far reaching as to go back to even the orinetal rugs, which in the far east are made on primitive hand looms.

I began my rug making with what is known as the New England hook rug. This rug is simple in construction, but can be made into a thing of great beauty. The foundation is of burlap, the common coarser variety such as is often used for potato sacks or in packing furniture.

My first hook rug was made two by three feet. I made a wooden frame three by six feet. An old window frame could be used for small rugs. Over the frame I tacked my burlap securely, when the burlap was taut, I outlined my pattern upon it in India ink with a small sized paint brush. This was my first attempt at rug making and at that time I knew very little of the art side of rug making and so made my design very simple. The background was red, with a border design in black. I decided upon a Roman key, possibly because that was the only straight line design which came into my head. It wasn't long, however, before my interest in the work led me to study into design and the appropriateness of the one chosen, soon came to be of grave consideration.

This pattern was measured with a ruler, which, of course, is not artistic from a certain standpoint; but it made a pretty rug. I first drew the pattern on paper, then when the measurements were correct, I transferred it to the burlap with the ink, as already explained. Then I put in the black yarn, following the design. To do this, hold the yarn on the under side of the burlap in the frame, then with a good sized bone or wooden crochet needle, hook the yarn up through the coarse meshes of the burlap; pull it

up so it stands up above the surface of the right side about half an inch. When the pattern (whether it be border or center figure), is finished, hook the background through in the same manner.

When the hooking through is completed, the really hard part of this type of rug making begins. It must be sheared or shaved down. A pair of small sheep shears or large tailors' shears can be used for this. The long looped ends must be cut down until the surface is smooth and soft; then take out the tacks which hold the rug in the frame and finish the ends. This may be done either by binding the ends with wide tape, or by sewing over and over with heavy yarn. Of course, this way of making a rug can not, strictly speaking, be called weaving, but it is a much more rapid process and the result is most attractive.

The Navajo blankets or rugs can be woven the same way as the rag rugs, but they take a little longer and call for some knowledge of design. As a beginning in weaving, after making the hook rug, I tried the blue and white rag rugs.

My first loom was a very primitive affair, but this did not discourage me for so were all early looms. In fact, those of the Navajo Indians of the present day are only tree limbs nailed or bound together with thongs of leather. I made my first loom myself, on practically the same lines as the frame for the hook rug, only larger. Then I bored two rows of holes across the top and the bottom to hold the warp thread, the two rows of holes alternating, as in the illustration. Then I strung the loom with good, strong, blue linen weaving twine. I made this warp just as firm and taut as I could, then I began weaving with blue and white carpet rags which I had already sewed.

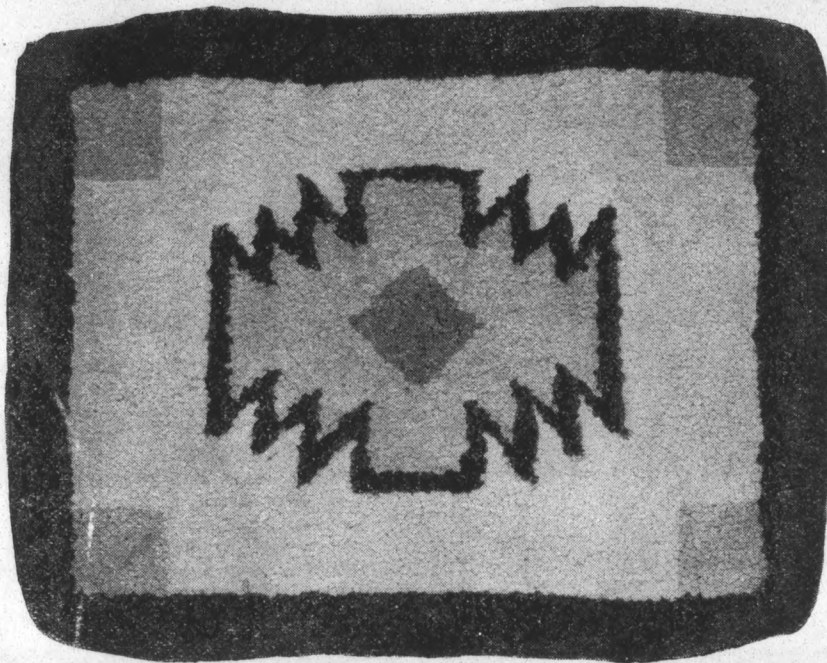
Just one word about sewing carpet rags. It is a common belief that if the rags are cut of nearly the same width and sewed any way, just so they will stay together, that is all that is necessary. To really make a good looking rug or carpet, the strips of cloth should be exactly the same width, the ends evenly joined, then sewed over and over firmly. The difference in the appearance in the finished article will amply repay for the extra time and care put into the preliminaries.

After my rags were sewed, I wound them on a shuttle. My first shuttle was a bit of thin board upon which a fish line

had come from the store. One could readily be made from a thin piece of board with a sharp jack knife. The weaving was the simplest form of straight ahead weaving, over one warp thread and under the next. But one must remember to push each succeeding row of woven rags up firmly against the one preceding it.

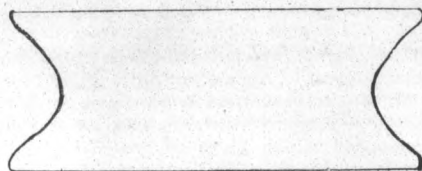
Later, to expedite the weaving and also as an aid in pushing the rows of rags

ors of which they were composed, is an essential in weaving the different types of carpet rugs and blankets. In this study I discovered that the genuine Navajo, those made by the Indians, do not contain either blue or green in them. The only colors found in the old genuine hand-made Navajos are red, black, white, grey and orange. And the designs found in them invariably partake of geometric fig-



A New England Hook Rug.

close together, I made a heddle of bass wood. Its length was determined by the width of my loom; it was about 10 or 12 inches high by about an eighth of an inch in thickness, with holes and slits alternating. The warp cord or twine must



Shuttle.

pass through this heddle. To string up a loom, fasten the warp cord at one end of the loom, pass it through the first hole in the upper row of holes, then through the first hole in the heddle down to the lower row at opposite end of loom, then into the first hole in upper row at that end, then into first hole of lower row back through the first slit in the heddle to the end of loom at which the threading began. Continue in this manner until the loom is completely strung, with the heddle between the two ends of loom.

This heddle simplifies the weaving of the slow process of "over one, under one." With it, it is only necessary to raise the heddle with one hand while with the other the shuttle is easily passed through the warp threads which, by the raising and lowering of the heddle are pushed to different levels.

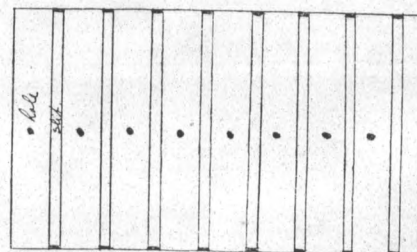
When this rug was finished, I took it out of the loom, tied the ends of the warp, bound them down by sewing over and over. For this sewing I used a narrow strip of the carpet rags as thread. To complete the rug, I made a fringe at each end of blue and white weaving twine.

Later I made a Navajo blanket on a similar loom only of larger size. It was an exact copy of a blanket made by a Navajo squaw at the World's Fair. I used white cotton weaving twine for the warp. The rug or blanket was woven of heavy grey knitting yarn, goat's wool yarn, when it can be procured, is best. The pattern in this blanket was quite correct, for by the time I started to weave it, I had become so interested in the work that I had studied the meaning of design and the particular colors employed in the construction of different ones.

An understanding of design and the col-

ures only. No curves or flowing figures should be employed in building up a design for a Navajo blanket. The art of design and the fundamental ideas from which patterns grow is quite a study, but many hints are to be found in any of the distinctly women's or household magazines.

In this instance I decided upon a design which would be both simple and yet appropriate; then I drew it on checked paper, which can be procured of any kindergarten supply house. The squares of the paper help to keep the pattern in bounds. When my pattern was completed, I lightly drew straight lines over it to indicate the warp threads; thus by counting threads in the pattern, then those on the loom, I could tell exactly where a certain color was to be introduced. I would knot the required color to my main weft thread and weave over or under as many threads of the warp as my pattern

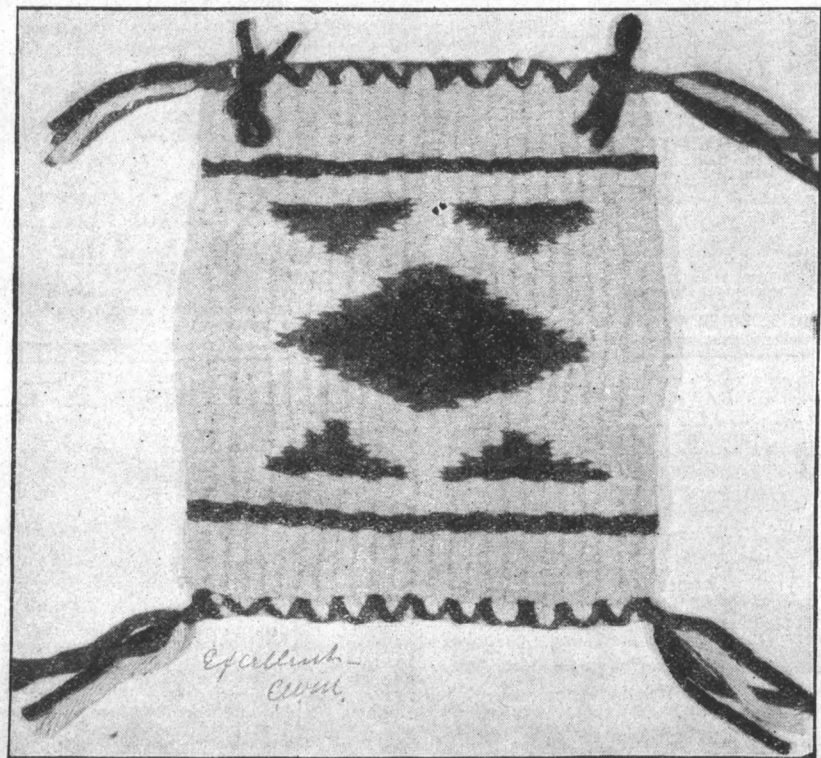


Heddle.

indicated, then break off the weft thread, retie the background thread and continue as design required.

The patterns of houses, trees, children, etc., which are being woven into the rag rugs just now can be done in the same manner as that indicated for making the design in the Navajo blanket. It requires an infinite amount of patience, a great deal of time and sure and nimble fingers in sewing the right color in at the right thread and when it is accomplished the result hardly repays for the extra time and pains necessary to produce it.

All these home-made rugs are attractive, comparatively inexpensive and fascinating to make, but they require time and patience. None, however, calls for so much of either as the Oriental rug, and these rugs are not really woven but tied. Each individual thread is tied or knotted, several thousand knots to a square inch.

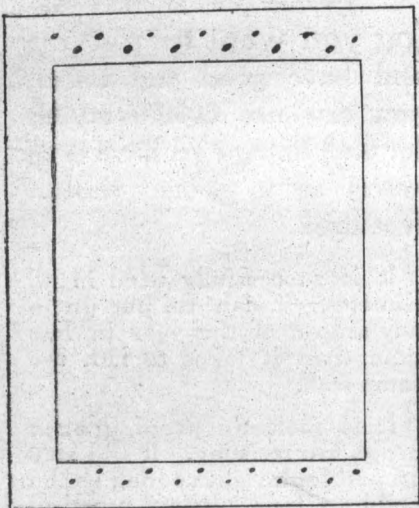


Navajo Blanket or Rug.

of warp. Think of the time and perseverance to manufacture a rug of any size!

Before attempting an Oriental rug, a thorough understanding of design is absolutely essential. The patterns are, to the western mind, so intricate and the color schemes so bewilderingly beautiful that one would hesitate before attempting so colossal an undertaking. Yet it could be accomplished for the actual process is really quite simple.

The warp threads are strung into the loom the same as for any other rug. Some of the handsomest Persian rugs are woven on cotton warp. When the loom is ready and the pattern decided upon, the



Loom Showing Holes Through which to Lace the Warp Cords.

knotting begins. The short length of the weft material, it may be either wool or silk, is doubled, passed under the first warp cord, the looped end passed up between the two warp threads, then the two open ends are passed over the warp thread through the looped end then drawn tight, knotted thus about the warp thread. The two loose ends are left upstanding until the innumerable knots are all tied and then the whole rug is sheared down to a smooth surface in the same manner as that employed for the hook rug.

IS YOUR FOOD OVER-DONE? No. 36.

BY MRS. ALTA L. LITTELL.

"Done just to a turn." How many times we have come across the phrase in a story book and given little thought to the meaning from a culinary standpoint. But when we eat the underdone or overdone food of a careless cook we wonder if "half-cooked" or "cooked to a crisp" is not more often description of the average cooking.

We are apt to think, if we think about it at all, that it is impossible to err on the side of too much cooking, or at least, that if food is cooked a little too long it will not be indigestible. But many foods are rendered as difficult of digestion by too much cooking as they would be if they were served uncooked. A time table giving the length of time for cooking most vegetables and meats is of great value to the cook.

Young cabbage should take but 25 or 30 minutes; old cabbage three-quarters of an hour. Cauliflower 20 or 25 minutes. Brussels sprouts, 20 minutes. Spinach, 15 or 20 minutes. Fresh asparagus should cook in 15 minutes if tender. If not, a half hour should cook it. Green peas should be cooked until tender but as the age of the vegetable varies so no definite time can be stated. However, the green color should remain when they are through cooking. If it is destroyed the peas are overdone. Green beans take 40 or 45 minutes. They should always have the first water drained off and fresh put on after boiling 15 or 20 minutes. Young turnips take 30 minutes; vintner ones from three-quarters of an hour to an hour. Young carrots take 30 minutes, old ones 45. Young parsnips 35 minutes; old ones 45. Salsify, or vegetable oysters, should boil 35 minutes. Young beets should cook in an hour. Old ones take much longer, sometimes four hours being required to make them tender. Kohi-rabi takes from a half hour to 50 minutes. Onions require about 50 minutes. Tomatoes require about a half hour. Squash requires about an hour of steaming or baking. Green corn requires from 10 to 15 minutes. Rice is best cooked slowly for an hour and 20 minutes.

In cooking meats the length of time depends upon the size of the cut of meat, the rule being to allow a certain number of minutes to the pound. A rib roast of

beef takes from 12 to 15 minutes if liked rare and about 20 minutes if desired well done. Rare leg of mutton takes ten minutes; well-done, 14 minutes. Lamb, which should always be well-done, takes 18 or 20 minutes and veal the same length of time. Pork requires 20 minutes; chicken takes 15 minutes if tender, and longer if an older bird. Turkey requires from 15 to 20 minutes to the pound and goose a little less. Steak should be broiled or fried about 10 minutes. Mutton chops should be broiled or fried about eight minutes. Veal cutlets require ten minutes. Pork chop should be cooked slowly until thoroughly done, about 45 minutes. Sausage should also be cooked slowly for about an equal length of time. Bacon should be cooked only until it begins to look clear. Ham should be cooked for five hours or more, whether baked or boiled. Ducks should be cooked an hour or more, depending upon the size.

DANGEROUS ECONOMY.

BY HILDA RICHMOND.

Almost every housekeeper has her pet economy and nothing short of a household disaster keeps her from holding to it firmly. With some ladies the economy takes the form of intelligent saving that does not injure the health, nor take up too much time, while others recklessly "save," as they term it, without regard to anything but the putting away of a little more money. There are sensible economies and foolish ones, and there are also methods of saving that are positively dangerous. It should not be hard to convince any housekeeper of a practice that endangers her own health and the well-being of her family, but just try it some day with one of these "joined to their idols" beings and see what you get.

One housekeeper who prided herself upon her schemes for saving was in the habit of drawing a clean cloth through holes in her milk pails and other kitchen utensils, and then neatly trimming the goods off inside and out. For the first time everything went well, but after that the stale milk and the water in which the vessels were washed formed a sort of curd on the rag that grew more and more unclean each time it was washed. Yet that woman prided herself on her neatness, and no one could convince her that milk from such pails was bound to be impure. Any one can imagine what a combination soapuds and milk will make in hot weather, but she used her pails week in and week out, only renewing the cloths when one dropped out accidentally.

Another saving housekeeper kept every granite pan, no matter how chipped and spoiled they were, and cooked in them until the family physician traced a case of poisoning to her habit of economy. She had heard that tomatoes or other acid things should never be cooked in defective graniteware, but had set it down as a scheme on the part of the manufacturers to sell more goods. The money it took to restore the invalid to health would have completely stocked several kitchens with first-class cooking utensils. It is positively dangerous to use kettles and pans with the granite or enamel chipped off, for cooking, unless it be for such things as boiling potatoes in their skins. Cooking utensils are so cheap nowadays, that surely any woman can afford a supply of new ones when the old ones wear out.

The habit of holding on to broken glass cans is another thing that is extremely dangerous. A very badly cracked jar or pitcher is used for holding some dry food, and the housewife congratulates herself on her economical ways. But accident after accident has happened in such instances from ignorance in handling the frail things. A child picks up the broken can and does not handle it carefully enough, so the result is a pair of wounded hands from broken glass. Perhaps the man of the house must, in an emergency, use the broken jar, and being stronger than his wife he screws on the top with unnecessary force. The can goes to pieces in his hands and a physician must pick out the splintered glass. Even the ladies are not immune from these accidents, one busy wife and mother was laid up in harvest with hands badly lacerated from using a badly cracked can. The best place for broken glass is in a trench several feet under ground where it will never disturb anybody.

One very often overlooked fact about using broken utensils and clumsy, old-fashioned things from a mistaken notion of economy is the fact that it discourages the girls of the family from learning to

cook and keep house. Give a girl a five-cent measuring cup, a good mixing bowl, shining tins and plenty of spoons and utensils and she will delight to cook, but put her off with a lard pail with a cloth drawn in a hole in it for a mixing bowl, a black iron spoon, a broken cup and pie pans to bake her cake in, and she will balk at the task every time. Many ladies empty the dishpan in order to mix the bread, when 25 cents will provide a bowl or pan that will last for years for bread alone, and in every branch of kitchen work there are doubtful economies practiced all over the land. To be a good housekeeper a woman must have good utensils, and while she may use poor ones in the interest of the savings' account, the average mother will discover that her daughter hates kitchen work under such circumstances.

It takes real heroism for some ladies to throw away the broken cups, the leaking wash tubs, the wornout pans and kettles and the cracked fruit jars, but for the sake of health and happiness it should be done. One accident or one case of poisoning, while perhaps not fatal, would cost enough to buy every needed utensil, so do not wait until your yet economy becomes a menace to the health, but dispose of it at once. Better do with fewer clothes or fewer pleasures, if necessary, than to endanger life and health. There are few, very few, households in the country that can not afford plenty of good things for the kitchen in the shape of conveniences and necessities, and usually where the defective articles are used it is from a mistaken notion of economy.

BLESSINGS ON THE PAPER PATTERN.

What a blessing the little tissue paper pattern has been to girlhood and womanhood, only she who remembers the sufferings over the dresses of her childhood can appreciate. One pattern usually sufficed a neighborhood, being loaned from house to house, and every girl, fat or thin, tall or short, had to fit herself to it. Individuality in dress was a thing not to be thought of unless one's mother was a genius, and few mothers who had all the cooking and sewing to do for the good old-fashioned families had time to be geniuses. What pangs of humbled pride were suffered by our mothers in their girlhood, we of the present day can never guess, for the advent of cheap patterns has made it possible for every woman to suit her own style and individuality, that is, if she is clever enough to do her own sewing.

And, really, it takes very little cleverness with the modern pattern. You buy a pattern which fits and full instructions come with it as to how to lay it on the goods to cut out the garment and how to put it together after it is cut out.

Probably there are some women who really never could learn to sew, but the average woman can learn enough to make most of her garments if she has the will.

Then there is the possibility of having high-priced garments at a little expenditure, if you do the work yourself. Just as an illustration I saw a made-up "ladies' combination," like the Michigan Farmer pattern published recently, for which \$10 was asked. Instead of being made of embroidery it was made of muslin and val lace. The muslin could have been bought for 25 cents a yard and the lace for a nickel a yard, so that the actual cost of the garment must have been much less than \$10. With a 15 cent pattern, the expert needlewoman might have had the same garment for about \$2.50.

HOW TO REMIT FOR PUBLIC DOCUMENTS.

All public documents are sold either at five cents or a multiple of that sum. Personal checks are not accepted. Nor is it always convenient to purchase a money order, while there is a risk in sending cash remittances. To meet these drawbacks in purchasing government publications, it has been decided to furnish coupons, in sets of twenty, for one dollar a set, which are good until used. Buyers of public documents will find the use of these coupons the most convenient and the safest way of remitting the amount of their purchases. Address all orders for coupons to the Superintendent of Documents, Government Printing Office. Remittances can also be made by postal money order, express money order, or New York draft; currency at sender's risk. Checks must be certified. Postage stamps, foreign money, or worn coin will not be accepted.

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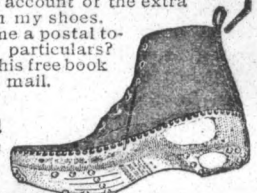
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"WHAT IS THERE IN IT FOR ME?"

WHAT has become of the free-hearted, openhanded American who was the typical hero a couple of decades ago? Time was, when to be a hero of any pretensions at all a man must be generous to a fault, hospitable to the extent of keeping open house day and night for everyone who chanced along, hearty jovial, a good spender and a benefactor to the needy. Were any in need of help, financially or otherwise, all that was necessary was to let his wants be known and our hero sprang forward to help him. This was the hero of polite fiction, and he must have been the hero of real life since our novelists are fond of telling us they draw their pictures from nature.

But the present day hero has changed somewhat. He is no longer housing the traveler nor giving to the needy without an investigation. Instead of taking everyone at their own valuation he is a keen, shrewd business man who looks everyone over carefully before making a single move to get acquainted. The traveler, who doesn't look as if he could pay his bills, is sent to the police station or a ten cent mission for a lodging, and the beggar is recommended to the poor commission or the Salvation Army. Our hero's eye has changed from the open, frank, merry one of our father's day, to the "hard, cold, gray, penetrating eye" of present day "masters of finance."

The same subtle change has taken place in everyone. We are no longer ready and eager to help one another. Instead of asking, "What can I do for my fellow-man?" we sit back calmly and ask, "What is there in it for me?" If there doesn't seem to be anything in it in dollars and cents we remark, "Well, they've got their nerve. Expect me to help them for nothing." And a fine scorn fills us as we marvel over the audacity of one human being who expects help from another without showing that he can do something in return.

We have all become sordid. Greed for the Almighty American dollar has filled our souls to the exclusion of the spirit of charity and helpfulness. We may have

had many a kindness shown, but we have no intention of passing it on unless we get paid for it. Even the children are tainted. When I was a child I was expected to run errands for any neighbor who might ask me, without hope of pay. Had I even hinted at expecting a cent for an errand I would have been lectured on the sin of avarice for an hour and then compelled to learn the beatitudes and write the golden rule one hundred times. Now I daren't ask a neighbor's child to bring me a clothespin without having ten cents ready to pay him for his trouble.

But, then, the children only copy their elders. In those good old days everybody turned in and helped everybody else, with no thought of pay. Now if you get in a tight place no neighbor offers to lend a hand, even though all she has to do at the moment is to sit on the front porch and read and rock. If you should even dare to ask her to watch your baby a minute while you run on an errand she would talk about you for a week. If she didn't ask you why you didn't keep a nursemaid you could think yourself lucky.

A magazine opens a department for the exchange of useful ideas and doesn't say anything about pay. Every woman is entitled to ask for any advice she wants, free of charge and, of course, it is expected she will be willing to help any other woman who writes asking for help. There may be floods of questions, but there will be mighty few answers. But let a note be printed in the column that a dollar will be given for every idea sent in and the editor has to have help opening his mail.

As the topical song puts it, "There ain't nobody doing nothing for nobody for nothing." We are all looking for pay. We have lost sight entirely of the fact that the consciousness of a good deed done is in itself pay far surpassing gold. We are more prosperous, it is true, than were our fathers and mothers, but are we any happier? Did not they, with their old ideas of helpfulness and good will and innocent trust in one another, know a happiness which has been denied their shrewder, more cynical descendants?

DEBORAH.

THE LETTER BOX.

The Working Girl Problem Again.

To the Editor of the Michigan Farmer, Housewives, and Mrs. E. M. F.—I have taken upon myself the responsibility of trying to answer some of your questions published in this paper of Jan. 7, in regard to the domestic service question.

First, you ask, "Why do they work?" Ever since the fall of man, when God in his anger suddenly deprived his erring children of the necessities of life, and the sudden knowledge of a good and evil forced them to supply themselves with clothing to cover their nakedness, it has been necessary for them to exert their strength in order to obtain the articles of food and clothing they most desired. To this exertion has been given the name, "work" and to the people making this exertion, "working people."

Time has made little change, for today our only reason for working is to supply the necessities of life and to provide another step in the great stair of regeneration that our posterity may climb a little nearer the great model of perfection given us in the beginning, for, "As it is in the beginning, so shall it be in the ending."

As to the "working girl," she is but one of the factors that go to make up the vast army of "working-people," neither greater nor smaller in importance than the others. For each of us must do our part in the great plan, that we may gam for ourselves redemption.

It matters but little our present conditions of servitude, so long as it is for the good of humanity. As to why they fail or succeed, there are several reasons. The first, and most important, is the environments of their birth, and breeding. If the conditions and company are good, they have a great advantage over those in reversed circumstances. But to ourselves we may attribute the greater part of their success or failure, for we, as a people of civilization, do our duty to God and our fellow people, there will be little need of the life of our working boys and girls being a failure. No girl ever went astray without having first come in contact with some evil influence, and no son ever went to the bad, but that had one day slept an innocent babe upon his mothers' breast. And had he not become

associated with some unclean person, he would have died holy.

In ourselves, speaking clean, encouraging words, and doing kind and noble deeds, lies the success or failure of the servants who come under our supervision. Let the people who hire and the hired, broaden their minds beyond the realms of the glitter of the mighty dollar, and live to make their lives clean and useful to those around them. No matter what the conditions or how humble the position, look not down upon those whose toil is harder than your own, but stoop down and lighten their burden, that their hearts at least, may be as light as your own. Look not up to gold, for it is far too heavy to pass in the soul ship over the river of death. Do your duty to your God, to your country, and your countrymen, whether your term of service be for a day or eternity. And then don't worry about the servants, or your children's live being a failure.—Mrs. J. J. H.

On Child Management.

Editor Household Department:—Deborah's pathetic appeal for advice brought a smile and a vision of a two-year-old boy an alarm clock, and a dress stay. Determination to find out what was in the clock was written large on every feature, and as there was no opening but the regulator slit, the dress stay was being rammed most energetically into that. I can still see the look of eager absorption on the baby face. Needless to say, the regulator refused to work forever after. This small boy's grandmother pronounced him the most destructive child she ever knew, but then, she had had twenty years in which to forget.

Still, the charge was not without foundation and I gave it careful thought. How should a destructive tendency be changed into a constructive one?

I noticed that usually the wreck was brought about by a desire to know what was inside; but sometimes playthings were destroyed simply because he had tired of them for the time being and thought he would never want them again. I began quietly putting away a toy after it had been used a few days, substituting others, which were in turn retired before the novelty wore off. Mechanical toys, which are so soon tired of anyway, were placed under a ban. Their mechanism is a continual temptation to destruc-

tion. I also tried to avoid the cheap and flimsy, both in books and toys. I once heard my sister protesting most emphatically against the men of her family bringing cheap dolls to her little girls. She said they came to pieces so easily that it was teaching the children to be destructive, and they thought it wasn't necessary to be careful because "daddy would get some more."

There is food for reflection in this.

I early tried to teach a wholesome regard for property rights by making a rule that one child should not use another's possessions without permission. With three boys "all in a bunch" there would otherwise have been endless friction.

Occasional infringements of the rule only served to emphasize the need for it. It has worked well. The older boy is not yet ten, and instead of being destructive his great ambition is to "make things."

Careless handling of books was hard to overcome, but though improvement was slow, it was sure, and I am not discouraged. One difficulty in child-training is that we are in too great haste for results, and wish to accomplish in a few months what we should be content to do in as many years.

One thing which I am firmly resolved I will not do, is to worry about my children's faults. They are many and various. Some are on the surface and will easily rub off. Others are deep-seated and will take years of patient effort to overcome. Care and thought and time, I am willing to give, in fullest measure, but no worrying. Let us be patient, and wait.—Lillian.

(Thank you for your kind words regarding this department.—Ed.)

College Girls Would Be Miserable on Farms.

Editor Michigan Farmer:—Commenting on the article, "The College Girl as a Farmer's Wife," of the Jan. 14 issue of The Farmer, it may be very flattering indeed, for a farmer to read that he may now lift his eyes toward a college girl, but what about that same girl when she has accepted his lot, and taken her place as a farmer's wife? She will quickly realize that the "freedom and pleasure of a country life" are not for her. Every minute is occupied, if attention is given to the duties which come to every farmer's wife. A woman who has help on a farm is by far the exception and not the rule. Woman is naturally a sociable creature and where is there a more isolated life than on a farm for a college girl? She may be satisfied with books, yes, but she will soon learn, if she can spare the time to read she will have to be satisfied with a cheap magazine or a newspaper, and be thankful at that. To be sure, she has learned good taste in dress, as an educated person, but she will soon find the limit of a farmer's purse, as far as dress is concerned, is calico or perhaps a gingham gown. What girl with the advantage which college life gives in dress, as well as other things, can be satisfied with that?

There is one sentence I entirely agree with in the article, which reads: "The farms and the farmers both need the college girl." But is that a reason why she should sacrifice herself? That is what it would amount to for she could never be happy.—Mrs. W. V. A.

ROMPERS FOR LITTLE DAUGHTER.

BY LILLIAN TROTT.

To many mothers, overalls or "rompers," on little girls, are so distasteful that the frills and ribbons of the generation gone, with their attendant labor to keep in order, are maintained for the sake of keeping Dorothy and Beatrice feminine. For such mothers the following is suggested:

Make the bloomers at home, as they require very little skill in way of cut, being gathered very full at knee and belt, and buttoned to a square-cut waist of same material. A band at knee, either buttoned, or large enough to slip foot through (preferably the latter), proves more durable than elastic. Over this is worn a slip of same fabric, fashioned exactly like a man's outside shirt, a square block, with neck hollowed to fit, opening half way down the back and finished with turn-over collar. The sleeves, too, have no cut. Double the cloth, so there need be no stitching at wrist, and sew in plain at shoulder. This has the effect of a long-sleeved apron, or the "tier" of our own childhood, but requires no pattern, and, over the full little trousers, covers the tiny limbs with feminine outlines, lending a grace the ugly overalls never had. If non-ironable material be used,



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like seersucker, or stout denim, the mother's work will be minimized.

In winter, heavy flannel drawers may be worn under the bloomers and a petticoat like them sewed to waist and buttoned at back, may be worn, if mother thinks necessary. But if bloomers for winter are of heavier cloth, and underdrawers are woolen, no extra skirt will be necessary, unless the child is delicate. When outdoors, all little children should wear long coats, full length, or a little below the knee. The stocking problem, too, cannot be too widely agitated. Customarily, we see children, both girls and boys, heavily coated and mittened, with wraps reaching only to the knee, wearing cotton stockings, or "fleece-lined," in zero weather. The extremities need protection, as well as the rest of the body. Worst stockings, either hand-knit or of stockinette with feet knit in, should be worn except by those whose skin it irritates, and in those instances silk should be worn under the fleece-lined. In any case, long leggings should be considered a necessity. Thus dressed, with arctics buckled around the ankles in place of ordinary rubbers, daughter or son is somewhat shielded against the weather.

A WHO'S WHO PARTY.

BY GENEVA M. SEWELL.

Get some of the tags like merchants stick through samples and fasten one to each different piece of cloth you have decided to use, write a number and in most cases the name of the goods on the tag; then, as fast as the guests arrive let them draw one of the pieces from a box and fasten it to their clothing. For your pieces you will want everything that, by a play upon words, can be made to represent a person's occupation.

When the guests are all assembled pass pencils and paper with numbers from one up to the number of guests, written on, and say that each person represents some one else and in order to find out who is who they are to write opposite the corresponding number the name of the cloth and the name of the occupation represented by the cloth, thus:

A piece of duck cloth would naturally represent a (Hunter).

A piece of net (Fisherman).

A piece of gauze (Doctor).

Cashmere (Banker).

Broadcloth (Minister).

Cheesecloth (Dairyman).

Prints, calico, (Printer).

Mohair (Bald headed man).

Oilcloth (Painter).

Striped cloth (Prisoner).

Flowered cloth (Florist).

Crepe (Undertaker).

Cloth with rings or circles (Jeweler).

Lawn (Gardener).

Canvas (Politician).

Sack cloth (Miller).

Henrietta (Poultryman).

Corduroy (Woodman).

Pongee (Pawnbroker).

Organdie (Musician).

Panama (Cook).

Crash (Boilermaker).

Huck (Huckster).

Butcher linen (Butcher).

Prunella (Fruitman).

Ponyskin (Farmer).

Bearskin (Furrier).

Shadow stripe (Detective).

When the guessing is completed, read the correct list and see how many have guessed correctly. If you wish to give prizes, any dainty little gift made from cloth may do for first prize and for the "booby" prize give an emery paper pencil sharpener or a chamois skin face cloth just to have them "rub up" a little.

Serve ice cream and cake or cocoa and cake for refreshments, and let each guest keep the piece of cloth as a souvenir. This sort of a party is elastic, as you can regulate the number of pieces to the number of guests.

HOME QUERIES.

Housewife.—It is almost impossible to make syrup that will not crust over if you keep it for any length of time. One pound of sugar and one quart of water boiled rapidly 20 minutes gives the best results. There should be $2\frac{1}{2}$ cups of syrup when the boiling is finished. Do not stir after the sugar is melted.

That Crocheted Cap.

Mrs. W. C. M.—I think the trouble with your toque is that the yarn used was too fine. The yarn in these caps is extremely coarse almost rope-like, and the work loosely done. Use a coarse bone crochet hook.

THE LUNCH BOX.

The mother's perplexing problem now days is what to fill the school lunch pail with. Butter is too high to buy. Take out a pound or two of bread sponge when baking bread and mix into it sugar, as much as you like according to taste, but do not make too sweet as it will not be so light. Add some shortening, cinnamon, cloves and nutmeg and a few raisins, one or two eggs. (It is nice without any when they are 30 and 35 cents per dozen), add flour enough to form into loaves, let raise, bake in a moderate oven. This makes a nice addition to the lunch. It is good with sauce and without butter. Another nice lunch can be made with thin slices of bread spread with nicely seasoned boiled beans, sandwich style. Beans ought to occupy a very prominent place on our tables these days of high-priced meats, as they contain a large per cent of protein.—A Farmer's Wife.

ACTION OF ACIDS AND SODA ON ALUMINUM.

I discontinued the use of aluminum for cooking rhubarb the past summer when I noticed that it roughened the part of the kettle with which it came in contact much more than any other acid fruit did. This was especially noticeable when I cooked the rhubarb in the fireless cooker, in which case it remained in the aluminum kettle several hours. After I discovered this, I put the rhubarb in an earthenware bowl, and set it in water in the aluminum kettle, when I wished to cook it in the fireless cooker over night.

Aluminum is susceptible to common baking soda in strong solution. Therefore, if you use aluminum kettles, it would be well not to put soda into peas or beans, as some cooks do, to preserve the color and hasten the softening; also if you wish to cook acid fruits therein, to use an inner container of earthenware. I have never observed that the rhubarb roughened the white agate ware as it did the aluminum, so probably this is also a safe cooking medium for such foods.

Citric acid (in lemons and oranges), and malic acid (in apples, pears, peaches), does not seem to eat the aluminum so readily as oxalic, tartaric and acetic acids.—Harriet Mason.

PATTERNS.

These patterns may be secured by writing the Michigan Farmer office. In ordering always give size and number.

3519—Ladies' Dressing Sack.—Seven sizes, 32 to 44 inches bust measure. For 36 bust it requires $3\frac{3}{4}$ yards, 27 inches wide. Price 15 cents.

5038—Ladies' Yoke Waist.—Cut in six sizes, 32 to 42 bust measure. Size 36 re-



quires four yards of 24-inch goods, with half a yard of 18-inch all-over. Price 15 cents.

4183—Children's Dress.—Three sizes, 1, 3 and five years. For 3 years it requires $1\frac{1}{2}$ yards 36 inches wide, $3\frac{1}{4}$ yards of insertion, $2\frac{1}{2}$ yards edging. Price 10 cents.

5029—Ladies' Corset Cover.—Cut in six sizes, 32 to 42 bust measure. Size 36 requires $1\frac{1}{2}$ yards of $12\frac{1}{2}$ -inch flouncing, with $\frac{3}{4}$ yards of 27-inch goods for pelum; $\frac{3}{4}$ of a yard of insertion. Price 10 cents.

5040—Ladies' Six-gored Skirt.—Cut in five sizes, 22 to 30 waist measure. Size 24 requires six yards of 36-inch material. Price 15 cents.

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WINDOW PLANTS.

BY BESSIE L. PUTNAM.

Plants grown in the living-room usually suffer much from a dry atmosphere, though perhaps not more than do the human inhabitants. Frequent spraying, a dish of water kept upon the back part of the heater, and thorough ventilation of the room are among the remedies.

If a bent-neck syringe, the best for reaching the under side of the leaves, is not at hand, a whisk broom may serve the purpose. Dip it in water, shake off most of the adhering moisture, and then brush the hand over the end, sending a fine spray into the air.

The red spider, a minute, almost microscopic insect, propagates rapidly in a dry atmosphere, but can be easily exterminated by cold water.

Dust is another common enemy, closing the breathing pores of the plant and thus reducing its vitality. The spray avoids this. One woman who is especially successful with house plants finds no better way to keep them healthy and free from insects than to give them a bath weekly in the suds left from washing. Of course, it must not be strong, and should be thoroughly rinsed off. This may seem like a great deal of work, but it is better to have a few thrifty plants than a whole windowful of dilapidated ones. Keep only as many as you can give individual attention, but let them be choice and adapted to your conditions.

If the window is sunny, geraniums and coleus will do nicely. The more sunshine they can receive, the brighter will be the colors and markings in the foliage.

Plant food in some form must be given at least once a month; once a week is preferable. If liquid manure, the very best food, is not available, there are a number of good commercial foods upon the market. A teaspoonful of ammonia to a quart of water applied once a week will soon reward the grower with a more vigorous plant. But never try to force a plant when at rest or before the young roots are thoroughly established. The condensed food is only for the strong, growing plant.

If you have a shady, north window, in which flowering plants refuse to thrive, it will prove an ideal place for a fern, farfugium, or rubber tree. The latter delights in a rich, fibrous soil, and the leaves should be sponged frequently to remove all dust. It gives the rich, tropical effect of the palm, yet is much more easily and quickly grown. Avoid injury to the terminal bud. This induces branching, and the ideal rubber plant is one straight stem clothed with its large, dark green leaves.

When it is desired to start a new rubber plant, an incision is made in a branch of an old one and a piece of damp moss tied over the wound. In time roots form in the moss, when the branch can be detached and potted.

While some object to the stiff, ungainly forms of many cacti, all familiar with it like the "Humming-bird" or "Christmas Cactus," as it is often in bloom by Thanksgiving, a mass of rich rose carmine shading to white, and of a grace in form well entitling it to the pet name. The plant is leafy, and is ornamental during the entire year. It is readily started from cuttings, and comes to blooming size much more quickly than most of the cacti.

To coax the calla buds, give warm water, rich liquid food, and keep the roots warm. A couple of bricks, the one being heated while the other is in use, assist in hurrying it into blossom.

Keep the hyacinths, and other Holland bulbs forced in the window, in a cool place if you would have the blossoms live their natural life. In nature they appear when the weather is cool, and cannot long endure the hot sun.

CARELESSNESS CAUSES LAMP EXPLOSIONS.

BY W. J. GRAND.

All explosions of coal-oil lamps are caused by the vapor, or gas, that collects in the space above the oil. When full of oil, of course a lamp contains no gas; but immediately on lighting the lamps, consumption of oil begins, soon leaving a space for gas, which commences to form as the lamp warms up, and, after burning a short time, sufficient gas will accumulate to cause an explosion. The gas in a lamp will explode only when ignited. In this respect it is like gunpowder. Cheap or inferior oil is the most dangerous.

The flame is communicated to the gas in the following manner: The wick tube

in all gas-burners is made larger than the wick which is to pass through it. It would not do to have the wick work tightly in the burner; on the contrary, it is essential that it move up and down with perfect ease. In this way it is unavoidable that space in the tube is left along the sides of the wick sufficient for the flames of the burner to pass down into the lamp and explode the gas.

Many things may occur to cause the flame to pass down the wick and explode the lamp.

A lamp may be standing on a table or mantel, and a slight puff of air from the open window, or the sudden opening of a door, cause an explosion.

A lamp may be taken quickly from a table or mantel and instantly explode.

A lamp is taken into an entry where there is a draught, or out of doors, and an explosion ensues.

A lighted lamp is taken up a flight of stairs, or is raised quickly to place it on the mantel, resulting in an explosion. In all these cases the mischief is done by the air movement—either by suddenly checking the draught, or forcing air down the chimney against the flame.

Blowing down the chimney to extinguish the light is a frequent cause of explosion.

Lamp explosions have been caused by using a chimney broken off at the top, or one that has a piece taken out, whereby the draught is variable and the flame unsteady.

Sometimes a thoughtless person puts small-sized wick in a large burner, thus leaving considerable space along the edges of the wick.

HOW TO CARE FOR YOUR PIANO.

BY F. T. MORRIS.

Careful treatment of your piano will result in long life to its musical qualities. It will also double the pleasure and remove the wear on one's nerves. A piano is almost as sensitive to heat and cold as an invalid. It should not be placed too near a fire as the heat draws the wood. Neither should it be near an open window, as on a wet day the damp is apt to rust the keys and wires and take the polish off the case.

The keys should be dusted frequently with an old silk handkerchief, and rubbed occasionally with a cloth moistened with methylated spirits. If they get very yellow, rub with a little lemon juice and whiting, and remove it with a damp cloth. But be very careful that none of the dust falls between the keys.

When the piano gets clouded and dull looking, give it a good polish with a very little furniture cream and rub well with a chamois leather. If it gets smoky, wipe with a cloth wrung out of vinegar and water, then polish.

Do not put your piano close to the wall, as it deadens the tone. To keep it in perfect order, it should be tuned twice a year.

A piano is never heard to the best advantage in a room that is overcrowded with furniture and hung with much drapery.

THE DRIFT OF THE SPRING FASHION WINDS.

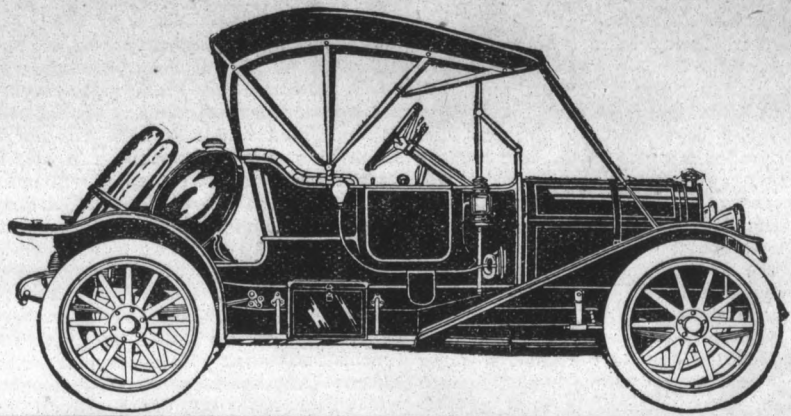
Fine serges, satin cashmeres, homespun, chiffon cashmere, tweeds, prunella cloth, cheviot, broadcloth and heavy linen, both white and colored, promise to be much used for the spring and early summer suits.

The waistline of the newest suits is raised an inch or so above the normal position.

Rumors regarding the new coats prophesy a continuation of the short model. Anything from 32 inches to 27 inches seems to be correct.

SPECTACLE AND KERCHIEF CASE.

Seeing a notice asking for a spectacle holder I will send description of a spectacle and handkerchief holder my mother used to have. Take half a yard of ribbon 2½ inches wide, fringe one end 1½ inches deep, measure from plain end 10 inches, fold and sew edges together five inches, fold down remaining ribbon with fringe. This is for spectacles. For the handkerchief take half a yard of ribbon, 3½ inches wide, fringe one end 1½ inches deep, measure from plain end 11 inches, fold and sew edges together 3¾ inches, fold down remaining ribbon with fringe. Fasten both together at top with narrow ribbon bow in front and safety pin at back. This makes a very pretty and handy set of pockets.—V. J. S.



This \$1500 Farmers Motor Car In Many Respects Equals \$4000 Cars

FARMERS are delighted to find in this great motor car many of the features of motor cars that cost up to \$4000. We have spent years in developing the Abbott-Detroit until now it is the one perfectly standardized motor car in the world selling at \$1500. By this we mean to emphasize that every part, every detail has been scrutinized and brought to a stage of perfection where we find it impossible to improve. For these reasons you get in the Abbott-Detroit a country service automobile far exceeding your expectations

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The painting and trimming specifications of the Abbott-Detroit parallel those of \$4000 cars. The lines, the convenience, the luxury of the Abbott-Detroit make a great many people think it costs three times as much as it does.

Over the roughest country roads the Abbott-Detroit clearly demonstrates its free easy riding, its power, its noiselessness, its ability to assimilate ruts, crossings, hard grades and deep mud. You are as comfortable as you can be because of the big, strong, perfectly built springs which level bumps and make all roads seem like boulevards.

There are many cars listed at \$1500 but by the time you have paid for all the extras you have expended up to \$2000. The Abbott-Detroit at \$1500 includes everything but top and windshield.

It includes a complete electric light equipment of two electric headlights and combination electric and oil side and rear lamps and Bosch High Tension or Splittorf dual ignition system.

Write to-day for the Book of the Abbott-Detroit which gives all the vital information about this wonderful car and when we send it to you we will include a letter of introduction to our local dealer who can show you the car itself.

Our guarantee is more than the ordinary guarantee. When you become an Abbott-Detroit owner you make a permanent connection with our organization. We keep in touch with you and protect you continually. Just drop us a postal right now and let us tell you all about it.



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This wonderful germ killer has a thousand uses on the farm and about the home. Most effective treatment for seed, grain and potatoes ever discovered—positively destroys the spores of all forms of smut, rust and fungus growth, permitting a full yield. Endorsed by U. S. Dept. of Agriculture. Indispensable for deodorizing and cleansing all mouldy or disease-laden rooms and corners. Write for instructive free booklet to-day.

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Gives 500 candle power. Casts no shadow. Costs 2 cents per week. Makes and burns its own gas. Over 200 styles. Every lamp warranted. No dirt. No odor. No grease. Agents wanted. Write for catalog, now.

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To be tanned and manufactured into coats, robes, gloves and mittens. We are dyers and dressers of all kinds of furs. We complete all work within 15 to 20 days after we receive the hides. Write for free catalogue and samples telling all about our work.

THE SYLVANIA TANNING CO.
Sylvania, Ohio.

THE NATIONAL CORN EXPOSITION.

(Continued from page 174).

This year all of this resulting seed was planted at the normal rate, and the seed from the five-plant hills outyielded the one-plant hill seed by six bushels per acre. This shows the value of competitive selection and that the ear that seems large because it has had the advantage is not the one that will return the most corn under ordinary field conditions.

Another test was along the line of acclimating corn. Varieties were secured from Ohio, Indiana, Illinois, and other states. Ordinary Nebraska corn grown at the station was shown with it. The yield of the Nebraska corn was 43.7 bu., the other 34.8, and corn that was secured 60 miles from the station yielded 40.6; all this showing the importance of getting home-grown seed that is acclimated. Inbred corn was shown. This yielded 36.4 bu. A result of careful cross-breeding was shown by a yield of over 62 bu. Corn from each of these tests was shown. In every case except when noted it was the result of 50 hills of two stalks each that was shown in the boxes. They had a graphical representation of the different soil areas.

A chart showed the result of growing alfalfa and other legumes in their rotation. As an average of 31 farmers, those that used clover or alfalfa reported an increased yield of 100 per cent as result in the case of corn. They also showed the yields of early and late varieties of oats. The product of the two treatments was shown on a scale and the early varieties in a six-year test showed an increased yield of 14 bu. per acre. The effect of rolling wheat was shown by photographs as well as by the grain. The rolling in the spring compacts the soil and restores capillarity. In a four-year average it resulted in an increase of 4 bu. per acre. Work with wheat strains, grain types and lodging was shown. Smooth vs. rough type of corn was shown as to yield. A five-year average shows 5 bu. in favor of the smooth type. This is a bit similar to the Delaware work with the two types in reference to protein content.

Oklahoma.—The experiment station had no regular exhibit though the state had a competitive exhibit that quite overflowed the booth and which was highly interesting from every viewpoint. Two very pleasant southerners were there to answer any questions you might ask of them. Oklahoma won her full share of the prizes.

Awards in the Competitive Classes.

Space will not permit the giving of complete awards, except in the Michigan classes. The Grand Champion Sweepstakes for the best ten ears of corn, again went to Indiana, the coveted prize being won by Roy D. Clore, of Franklin, Ind., on an exhibit of white dent corn, while the grand champion sweepstakes premium for the best ear of corn in the show was awarded to R. A. James, of Charleston, Ill., who showed yellow dent. Michigan's only winning in the world classes was made by Geo. J. Friedrich, of Brooklyn, who won second prize on a peck of Oderbrucker barley. Winnings in the Michigan classes were as follows:

Ten Ears Yellow Dent Corn.

Levi J. Miller, Caledonia, 1st prize, \$5; L. J. Bradley, Augusta, 2nd prize, certificate; A. A. Wood & Sons, Saline, 3rd prize, certificate; Earl Pickett, Caledonia, 4th prize, certificate; Jesse W. Pickett, Caledonia, 5th prize, certificate.

Ten Ears White Dent Corn.

R. I. Vandercook, Linden, 1st prize, \$5; R. D. Simmons, Hanover, 2nd prize, certificate; Lester Benson, Whitehall, 3rd prize, certificate.

Ten Ears Corn Other than Yellow or White.

D. E. Turner, Hanover, 1st prize, \$5; William Folks, Hanover, 2nd prize, certificate; Florine Folks, Hanover, 3rd prize, certificate; E. M. Moore, Wixom, 4th prize, certificate; L. S. Turner, Hanover, 5th prize, certificate.

Ten Ears Flint Corn.

George J. Friedrich, Brooklyn, 1st prize, \$5; A. R. Vincent, Croswell, 2nd prize, certificate; Wm. Hayward, Bay City, 3rd prize, certificate; Chester Helfrich, Port Austin, 4th prize, certificate.

Peck Soft Wheat.

A. W. Jewett, Mason, 1st prize, \$5; J. W. Chapin, Eden, 2nd prize, certificate.

Peck Hard Wheat.

John Brunner, Howard City, 1st prize, \$5; A. W. Jewett, Mason, 2nd prize, certificate; George J. Friedrich, Brooklyn, 3rd prize, certificate.

Peck White Oats.

L. L. Lawrence, Decatur, 1st prize, \$5; George Shoemith, Leslie, 2nd prize, certificate; A. W. Jewett, Mason, 3rd prize, certificate; George J. Friedrich, Brooklyn, 4th prize, certificate; Jacob De Gins, Albia, 5th prize, certificate.

Peck Black Oats.

A. W. Jewett, Mason, 1st prize, \$5.

Peck Six-Rowed Barley.

A. W. Jewett, Mason, 1st prize, \$5.

Peck Two-Rowed Barley.

A. W. Jewett, Mason, 1st prize, \$5.

OUR LANSING LETTER.

(Continued from page 182).

the road building planned for this year and the next and enable the state to keep this great internal improvement work moving along as rapidly as is possible with good results.

Taxation matters are gradually moving to the center of the stage. The tonnage tax bill is up for special consideration next Thursday and the proposal to place a tax of one-quarter cent per pound on copper and ten cents per ton on iron ore has some strong advocates among members of both houses. There will probably be a move to substitute a mining royalty bill for the tonnage tax proposal. It is well known that men and interests in possession of huge mining reservations in the upper peninsula are practically escaping taxation and Governor Osborn has urged that an investigation be made of this matter. There is a bill before the house committee on taxation which authorizes the appointment by Governor Osborn of a commission of inquiry to look into the taxation situation in this state. If the committee will report the bill out promptly there is time for the commission to look into the situation as regards the tax on mines and mining properties before the present legislature adjourns and furnish the lawmakers with some statistics on which to act. Even the big delegation of mining men down here from the upper peninsula to oppose the tonnage tax proposition, failed to point out that the iron mines of the upper country are paying their fair share of taxes. The copper men were able to show that they are on the tax rolls for a big assessment, which they claim equals the actual value of the property, but the iron mines could not make a similar showing, and there is a strong inclination here to prod the iron mine owners severely and bring them into the taxation camp for a reasonable amount of taxes. In view of the situation, unless some good reason is shown, it is likely there will be an effort made to lay aside final action relative to taxation matters until a commission can be appointed and report. Action on the tonnage tax bill may ultimately be delayed pending that report.

Governor Osborn's keen attack on the railroads, and particularly the Grand Trunk, last Thursday, has attracted much attention among the railroads as well as the legislators. There will undoubtedly be a bill offered to force the D. G. H. & M., which is owned by the Grand Trunk, to pay a fair share of the taxes. It is considered by the legislators that Governor Osborn did the right thing when he flung down the gage to the railroads and demanded that, if they wish to play fair, as they allege, that the special charter of the D. G. H. & M. be given back to the state. Under its provisions the railroad is paying about \$100,000 less in taxes than are assessed proportionately against other railroads and both Governor Osborn and Attorney General Kuhn have announced their determination to use every possible means to force that railroad to come out from behind its special charter and pay taxes.

What the total tax levy as the result of legislative work, will be is still a question. But few appropriation bills are in before the finance committee as yet, but there is being an effort made to get them in and have every amount ready for consideration by the first of March. There will not be any undue generosity it is announced, but the plan calls for a sufficient appropriation to prevent a deficit at the end of the year, and provide for necessary expenses. Beyond that it is doubtful if the legislature will go in view of Governor Osborn's announcement that he will veto any except absolutely necessary appropriations for state institutions.

General legislative matters of the session have not received much attention as yet.

HAPPENINGS OF THE WEEK.

National.

That the American republic is more and more appreciative of the work of Abraham Lincoln is evidenced by the large number of gatherings called to commemorate his birth. Not alone from the large cities where organized clubs of a political character held large banquets in honor of the day, but even to the small town and the rural places come reports of feasts and speechmaking that unfolds the spirit of the people toward the great emancipator.

The trade of the United States, with its non-contiguous territory, for the year of 1910, amounted to over \$200,000,000. In 1903, the first year when complete statistics were gathered, the total was about half the figures for the past 12 months.

A test vote taken in the house of representatives Monday of this week indicated that the reciprocity agreement with Canada will, in all probability, pass that body when it comes up for final decision.

Seven members of the crew of the Osakosh, a gasoline schooner, were lost at the mouth of the Columbian river when the craft turned turtle. Only the captain was saved.

The allied interests of the North American grain exchanges have started a nucleus for an appropriation for educating farmers to produce better crops and instructing them in the use of more scientific methods in performing their work.

Col. Roosevelt received a general ovation along the line of his trip from New York to Grand Rapids, Mich., where he spoke at the Lincoln Club banquet last Saturday night, and return.

A \$15,000 fire occurred at Memphis, Mich. last Sunday morning. Several men were injured by a gasoline explosion.

Last week the house of representatives passed the Cullum bill which provides \$2,000,000 for the erection of a memorial to Abraham Lincoln in Washington.

Farmers, by subscriptions, paid off the indebtedness of the Atlantic, Northern & Southern railroad and thereby saved it from going into the hands of receivers.

The farmers own property along the road.

The United States senate voted to allow the confederate veterans the use of tents at their reunion at Little Rock, Ark., next May.

A street car running wild into an open switch dashed down the bank of the Sheboygan river at Sheboygan, Wis., and carried five persons to death, last Thursday.

Alleging that employees of the New York central lines have been discharged contrary to agreement, representatives of several trainmen's organizations have called for a conference with the officials of those lines, and if refused, will call a strike on all lines west of Buffalo.

Senatorial contests are on in New York, Iowa and Colorado.

Danville, Ill., is now in the limelight owing to the indictments being returned by the grand jury investigating into the traffic in votes. The indictments number into the hundreds.

Evidence supporting the theory of the spiral nebula hypothesis is in the possession of professors at the Mount Wilson observatory, California, where they have succeeded in photographing a swirling mass of gases estimated to be six trillion miles from the earth.

The New York state assembly is considering a bill making it a misdemeanor for any person or corporation to hold products in cold storage for more than a year.

The vote in Arizona on the ratification of the proposed constitution of the new state is reported to be strongly in favor of the instrument.

Fourteen men are reported to have been entombed in a mine at Trinidad, Col., last week, by an explosion.

Last Thursday the house of representatives passed a measure which provides for increasing the number of representatives in that body from 391 to 433. This, with the two new men from Arizona and New Mexico will make 435. The new districts will be apportioned according to the 1910 census.

Foreign.

The past week has not been encouraging to the federals of Mexico who have met stubborn resistance from the rebels. Juarez was the pivot of interest for the week and it is anticipated that an engagement may be fought at any hour to determine the occupancy of the town. Small conflicts between rebels and federals have been reported favorable to the former. The government is sending more reinforcements from Mexico City to Chihuahua and Zacatecas.

London, England, is already preparing for the coronation of George V, which will take place on June 22. It is anticipated that 2,000,000 people will visit the metropolis of the world on the occasion.

Certain sections of China face a famine. It is predicted by Consul Gracey at Nanking that, without relief from outside, fully a million will perish before crops can be gathered again. The plague is spreading to new districts and the percentage of fatalities are large.

A gale caught an ice floe with a village of fishermen thereon off the coast of Finland and out of 253 men it is reported only 100 were saved before the floe was broken in pieces.

Rebels burned the Haitian town of Ouanaminth. The political situation of the island is much disturbed.

A large amount of munitions of war were destroyed by the blowing up of the barracks at Managua, Nicaragua.

The first use of the aeroplane in actual military operations was consummated last week when Harry Harkness, amateur operator, flew from Fort Rosecrans, Mexico, to the United States troops camped on the American side of the border, with a message to the commander.

It is asserted that nothing will be known about the probable cause of the sinking of the battleship Maine in Havana harbor 13 years ago until about the last of April. Progress is being made on the clearing away of the hull.

MICHIGAN CROP REPORT.

Wheat.—In reply to the question, "Has wheat during January suffered injury from any cause?" 106 correspondents in the southern counties answer "yes" and 207 "no;" in the central counties 43 answer "yes" and 91 "no;" in the northern counties 7 answer "yes" and 115 "no" and in the upper peninsula 22 answer "no."

Snow protected wheat in the southern counties 2.15 weeks; in the central counties 2.88; in the northern counties 3.94; in the upper peninsula 4.14, and in the state 2.76 weeks.

The average depth of snow on the 15th in the southern counties was 3.73 inches; in the central counties 5.45; in the northern counties 15; in the upper peninsula 24.76, and in the state 7.33 inches.

On the 31st the average depth in the southern counties was 0.89; in the central counties 0.90 of an inch; in the northern counties 8.73; in the upper peninsula 16.92, and in the state 3.17 inches.

The total number of bushels of wheat marketed by farmers in January at 126 flouring mills was 206,564 and at 107 elevators and to grain dealers 166,174 or a total of 372,738 bushels. Of this amount 266,515 bushels were marketed in the southern four tiers of counties; 93,480 in the central counties, and 12,743 in the northern counties and the upper peninsula.

The estimated total number of bushels of wheat marketed in the six months, August-January, is 6,750,000. Fifty-five mills, elevators and grain dealers report no wheat marketed during January. The average condition of live stock in the state is reported as follows, comparison being with stock in good, healthy and thrifty condition: Horses and cattle, 96, sheep and swine 97.

The 1911 catalogue of the Robert Essex Incubator Co., of Buffalo, N. Y., is a 64-page book illustrating and describing the line of incubators, brooders and poultry supplies manufactured by this firm. It lists "Everything for Poultry Keepers."

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Runs perfectly on kerosene, gasoline, distillate, any fuel oil. Hundred less parts. Patent throttle gives three engines for price of one. Single spark ignition saves 75% battery cost. Force feed lubricator—perfect oiling. Double duty tank revo. We Pay the Freight

Intionizes cooling systems. Automobile muffler. Ball bearing governor. Starts instantly, no pre-heating, no crank. Experience, unexcelled. Women can operate. Mounted on skids or trucks. Vibration eliminated. Comes complete, tested, ready to run. Twice as good as half the price.

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3-12 P.

Michigan Farmer's Club List.

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

EXPLANATION.—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. Example: We will send the Michigan Farmer and Detroit Semi-Weekly Journal for \$1.60. If, for instance, McCall's Magazine also is wanted add it at 40c making total \$2.00. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 1.00 to the second column price. For the Michigan Farmer 5 years add \$1.75. We do not send samples of other papers. Address the publishers direct.

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

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

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

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

NAME OF PUBLICATION.	See explanation above.
Daily, (6 a Week.)	
Journal, Detroit, Mich on rural route	2 50 3 50 2 55
" " " " " " " "	5 00 5 25 4 75
Times, Detroit, Mich.	2 00 2 75 1 75
News Grand Rapids, Mich.	2 00 2 25 1 50
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News, Cleveland, Ohio.	2 00 2 85 1 85
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Metropolitan Magazine, N. Y. (m)	1 50 2 00 1 00
Mechanical Digest (Grand Rapids)	50 1 15 25
McClure's Magazine, N. Y. (m)	1 50 2 05 1 00
Musical, Boston, Mass. (m)	1 50 2 05 1 10
Outing Magazine, N. Y. (m)	3 00 3 40 3 00
People's Home Journal, N. Y. (m)	50 1 25 30
Pearson's Magazine, New York (m)	1 50 1 75 1 50
Red Book Magazine, Chicago, Ill. (m)	1 50 2 30 1 25
Success, N. Y. (m)	1 00 1 75 80
Ladies' or Household.	
Designer, N. Y. (m)	75 1 55 60
Everyday Housekeeping, Salem, Mass. (m)	50 1 40 35
Harper's Bazar, N. Y. (m)	1 00 1 75 1 00
Housewife, N. Y. (m)	35 1 25 30
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Little Folks, Salem, Mass. (m)	1 00 1 75 1 00
Sunday School Times, Philadelphia, Pa. (w)	1 00 1 80 85
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(w—weekly; m—monthly; s-m—semi-monthly.)

FREE PREMIUMS.

Those subscribing for the Michigan Farmer in combination with other papers are allowed premiums just the same as if the order was for the Michigan Farmer alone. One premium only for every Michigan Farmer order. Orders for other papers alone will receive no premium under any circumstances.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

HOW TO MAKE SOFT CHEESE.

There is a rapidly growing demand everywhere for the soft varieties of cheese such as cottage, Neufchatel and cream, and the manufacture of this class of cheese is becoming a very remunerative branch of dairying. The soft varieties of cheese are deservedly becoming popular because of their wholesomeness and palatability.

Cottage cheese, which is made from skim-milk, may be manufactured in either of two ways, namely, with and without rennet extract. The cheese resulting from the use of rennet extract is finer grained though somewhat more acid than that obtained without rennet.

When rennet extract is used the night's separator skim-milk is held at a temperature of about 65 degrees F. until the following morning when it should show about 0.2 per cent acid. The temperature is then raised to 75 degrees F., and rennet extract added to the skim-milk at the rate of one-twentieth of an ounce (about one-half teaspoonful) per hundred pounds of milk. To insure an even distribution of the rennet, it should be diluted with a cup of water before mixing it with the milk. As soon as the rennet has been thoroughly mixed with the milk, the latter should be allowed to stand quietly at a temperature of about 70 to 75 degrees F. for 24 hours, when a firm curd will have formed. The curd is now carefully dumped into a cotton bag or strainer and allowed to drain until all free moisture has escaped. Salt is next added at the rate of one and one-half ounces per ten pounds of cheese. The palatability of the cheese is much improved by adding a small amount of rich cream to the cheese.

When no rennet is used the following method will produce a very satisfactory cheese: Allow the skim-milk to sour at a temperature of from 90 to 100 degrees F. and when thoroughly curdled, the curd should be broken up with any convenient stirring implement or, better, cut up fine with special cheese knives, and the temperature raised to 104 degrees F. The heating should be done by placing the vessel containing the cheese into a water reservoir of some kind, care being taken that the temperature of the water never exceeds 120 degrees F. During the heating process the curd should be constantly stirred to prevent its forming into lumps. When the curd has reached a temperature of 104 degrees F. the temperature of the water surrounding it should be reduced to about 106 degrees F., and the stirring continued for about forty minutes when the whey may be drained off. The draining is best accomplished in a tin strainer covered with a piece of cheesecloth. The curd must be hand-stirred as soon as it has been dumped into the strainer, but the stirring should be done very gently at the start to prevent loss by washing the curd particles. Continue the stirring until the curd is firm enough to prevent the particles sticking together, which usually requires about five minutes. As soon as the curd has been stirred dry enough it is wrapped in the cloth strainer and squeezed with the hands until most of the free whey has been removed, that is, until it is dry enough to permit granulating it to fine particles by rubbing with the hands.

When the curd has been squeezed dry enough and thoroughly granulated by rubbing and stirring with the hands, it should be salted at the rate of about one and one-half ounces of salt per ten lbs. of curd. After salting the curd is soaked with sweet milk until it assumes a moist condition. The amount of milk required for this purpose varies from one and one-half to two quarts for every ten gallons of skim-milk used. About two-thirds of the milk is added immediately after salting, after which the curd is set aside for about ten minutes when the soaking may be completed by adding the remaining third of the milk.

The amount of milk used for soaking varies somewhat from day to day depending upon the amount of moisture left in it at the time of salting. The rule to follow is to leave the curd fairly moist but not so moist as to have the milk drip from it.

Cheese made by this method is milder and has better keeping quality than that made by the method requiring the use of rennet extract. However, if a more acid cheese is desired the soaking may be done with sour instead of sweet milk.

The same packages will answer for cheese made by either of the two methods. For simplicity and cheapness there is no better method of packing than the following: With an ordinary butter printer, print the cheese in one-pound blocks and then cut the blocks in two. This will make packages weighing one-half pound each. The half-pound blocks are wrapped in thin parchment or oiled paper in a manner similar to wrapping one-pound butter prints. The sheets of parchment or oiled paper for this purpose should be six inches wide by ten and one-half inches long. Any dealer in dairy supplies can furnish this paper at a very small cost. If the cheese is to be sold in one-pound packages the wrapping paper should be eight and one-half inches wide by ten and one-half inches long. Cottage cheese may also be packed in waterproof packages such as are used for carrying ice cream, oysters, etc. The fiber butter boxes, made of pasteboard and lined with parchment paper, will also be found satisfactory for this purpose. Both of the above styles of package should be lined with parchment paper before putting the cheese into them.

The yield of cottage cheese, when made according to the methods herein described will approximate 15 lbs. of cheese per 100 lbs. of skim-milk. The average retail price of the cheese is ten cents per pound.

When much cheese is made, it should be marketed at fancy grocery stores and meat markets. If made on farms that operate daily milk routes in the city, much cheese can be sold on these routes to consumers direct, thus saving the middleman's profits.

Where only 20 lbs. or less of cottage cheese are made at a time the skim-milk is best handled in "shot-gun" cans, which have a capacity of about 35 lbs. When more than 20 lbs. of cheese are made at a time, small cheese or cream vats will be found most satisfactory for handling the skim-milk.

The method of manufacturing Neufchatel and cream cheese will be described in another article.

Wisconsin.

JOHN MICHELS.

THE BEST COW STALL.

Will you please send me an outline of your cow mangers and stalls?

Kent Co.

C. F. T.

If C. F. T. has been a subscriber to the Michigan Farmer for any considerable length of time he must have seen the description of the model cow stall and can get this by referring to the files of his paper. Twice, to my certain knowledge, a sketch of this stall, has been published, together with a word picture of it. However, I suppose that C. F. T. may be a new subscriber or it may be that when these articles were published he was not interested in cow stalls, or he may be one of the readers of the Michigan Farmer who do not keep the Farmers on file. I, of course, am perfectly willing to reprint the description of a model cow stall if it does not become a bore to the majority of the readers of the dairy department.

The model stall is a good stall, there is no question about that. It has stood the test. It is practical and convenient and keeps the cows clean. I do not say that there are no other good stalls, and there may be some stalls that are better in some respects, perhaps in all respects, but this last statement I doubt.

Now, the philosophy of the model stall is this. You build a cement manger the entire length of the stable, this is only four inches high, and above this cement manger 28 inches you begin the bottom of the hay manger—this is narrow at the bottom, not over four or six inches wide. On the feeding alley side you board this up so that your manger will be four feet high. Below the bottom of the hay manger you leave an opening through which ensilage and grain can be put. Some have a door on hinges that lifts up, which is very well indeed, but a wide board on the bottom and then a space not large enough for the cows to get through with their head, and the balance boarded up, answers every purpose and does away with the door. Now, on the side of the manger towards the cow you nail slats to this 2x4 or 2x6, which is the bottom of the hay manger, and have them slant up and back towards the cow at an angle of 45 degrees and long enough so that the top of the slats will be level with the front of the hay manger or alley side of it.

Then you add a partition between each cow. Now you can tie the cow with a chain around her neck, with a halter, or almost any way that you choose. You can fasten the chain to a staple driven into the bottom of the hay manger or into the side of the stall.

The really important thing about the construction of this stall is that, when the cow is eating out of the lower manger notice where she stands with her hind feet and then put a 2x4 up edgewise across the stall just in front of her hind feet. Now the space between this 2x4 and the manger gradually fills up with bedding so that the cow has a straw bed four inches deep to lie upon. When she gets through eating her grain, in order to raise up her head she must back up because these slats compel her to, consequently she does not get onto her bed with her dirty feet and when she lies down she must step up and lie on this bed or lie just over the edge of the 2x4. She soon finds that this is not restful and soon learns to lie where she belongs. In this way she is kept clean and comfortable.

A TALK ON FEEDS.

The senses of smell and taste, unless depraved and dulled by excesses, are safe guides as to foods that may enter the stomach of the animals. The processes of digestion is completed, only when the food admitted to the stomach is palatable and has been eaten with a relish. Because dairy cows are kept confined in a stable where they cannot use their instinctive preference in the choice of feeds, hunger leads them to eat many things which are by no means suitable to their needs and which they cannot completely digest and assimilate.

The chemist may analyze musty grain and report as high an amount of protein as found in sound, dry grain, but this does not signify that it is as valuable a food for his cattle. The manufacturers of many mixed feeds recognize the high value of palatability and can make the screenings of the mills and low grade cereals pleasant to the smell and taste by smothering the musty odors with condiments and appetizers, but none of these pleasant smelling drugs brings back the natural sweetness which the Creator alone has made a feature of sound grains, the ideal of the best cattle feeders. Some of the molasses feeds that are now on the market are good examples of how unpalatable feeding stuffs may be utilized by the addition of a few gallons of sweetening. Such sweetening does not restore the natural sweetness that makes sound grains so valuable and healthful for our animals.

Among the old standard by-products, cottonseed meal is one of the most economical sources of protein, but during the past few years prices have increased so that it is possible to sell inferior goods. A few years ago it was possible to buy plenty of this feed that would analyze above 40 per cent protein but since protein feeds have been increasing in value cottonseed meal is now sold at a guarantee of about 37 per cent protein. In various digestion experiments it has been found that when this feedstuff falls below 35 per cent protein, its digestibility deteriorates very rapidly. Protein is the direct measure of the feeding value of cottonseed meal and never allow the dealer to delude you into the thought that because his goods are low in protein that they are correspondingly rich in some other valuable constituents. Cottonseed meal should be fed with caution and it is safest and most valuable when mixed with other bulky and succulent feeds. I have found it a very desirable feed. When not used in too large quantities it is both a milk and butter maker, but to cows that weigh less than 1,000 pounds it is not best to feed more than two to two and one-half pounds a day. Fed in this quantity, it has a very beneficial effect on the butter, hardening it and making it churn more easily. If you feed too much it has an injurious effect upon the cows, and also upon the quality of the butter.

Linseed oil meal is a medicine as well as a valuable food for dairy cattle. Use the "old process" linseed oil meal in preference to the "new process" as it contains more oil than the latter and is considered more digestible. If fed within reason it is a valuable dairy food. It is beneficial to the bowels and less heating than the cottonseed meal. If too much is fed, it has a tendency to soften the butter and causes the cattle to scour. Two or three pounds a day is enough to feed a cow that is in full flow of milk. It has an analysis of about 28 to 33 per cent protein and about seven per cent fat.

Gluten meal, when it is the pure gluten meal and not doctored, is a rich and valuable protein, a safe food when fed in moderation. It is to be regretted that its popularity has caused it to be mixed and adulterated with various other feeds and sold as gluten feed. The pure gluten meal

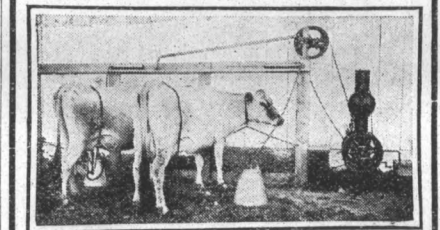
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If you're only thinking about a cream separator don't fail to do a thorough job so that when you buy you'll buy right. Look up the merits and faults of all the various kinds; ask everybody you see using a separator how he feels about it; get all the catalogs, and don't overlook the Economy Chief Dairy Guide for 1911. It's worth a lot of money to dairy farmers in every state. Ask for a free copy today.

Sears, Roebuck and Co.
Chicago, Illinois

The Hinman Milking Machine

The Hinman is the logical machine for you to buy, because it is the logical method of increasing your profits and reducing expensive labor.



Farmers and dairymen all over America are finding the Hinman all that we claim it to be. Their opinions and orders show you that the Hinman makes good because it is the only machine that is absolutely right in principle and execution.

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this year. You can not lose but you will profit by doing so. Used by many of the best feeders of the state who find it a valuable feed, selling below its true feeding value as compared to the other feeds and grain.

Cheaper, and gives better results than bran for which it is substituted by the best dairymen. Forms a valuable addition to any ration, being vegetable the mechanical effect is good which causes a better assimilation of the other feeds.

Especially good with cotton seed meal as it counteracts the objectional features of this feed. Dried Beet Pulp will cheapen any ration. Substitute it for a portion of the ration you use and you will secure better results in both production and improvement in the health of your animals.

Call on your dealer, if he cannot supply you write to
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Michigan Broker for the Manufacturers.

CALVES RAISE THEM WITHOUT MILK, BOOKLET FREE
J. E. BARTLETT, Co., Jackson, Mich.

usually carries about 26 to 28 per cent of protein and from 36 to 40 per cent of carbohydrates and 12 per cent of fat. Chicago gluten has an analysis of 32 per cent protein, 44 per cent carbohydrates and only five per cent of fat. This makes a very highly concentrated protein food to feed alone unmixed, and it should always be fed in connection with the more bulky foods or sickness is likely to follow its feeding. Always study its chemical analysis when you are buying this feed and if it is too low you will know that it has been adulterated and unsafe to feed at all.

Brewers' and distillers' dried grains are the residues resulting from the operations of malting and brewing. In malting barley, they allow the grain to sprout, and before the malted grains are crushed for brewing purposes these sprouts are removed, which, in their air dry form are known to the trade as malt sprouts. They are poorer in starch and richer in protein than the entire barley grain and are properly regarded as a nitrogenous feeding stuff.

New York. W. MILTON KELLY.

THE DAIRY COW.

The dairy cow does more than bring financial success to the dairy farmer. She makes him a better citizen than he would otherwise be. Her influence upon home conditions is a most pleasing contribution to those factors which are responsible for the changed conditions which prevail in the farm homes of today. Thousands of these homes are now characterized by comfort and happiness where formerly they were blighted by drudgery and unhappiness.

Better financial conditions have contributed to this change, and the dairy cow has been in no small measure responsible. She has contributed in still another way. The dairy cow teaches kindness. Her owner soon learns that only by treating her kindly can he secure the highest possible returns from her, and she responds quickly to kind words and proper care. Her disposition is one that the human family might well emulate. She is patient and long-suffering, acquiescing mutely in the arrangements made by her owner for carrying on the dairy business, striving at all times to repay him for every effort made for her care and comfort.

The members of the family, as they come in contact with her and her kindly disposition, are influenced for good. As they appreciate the financial benefit to come from caring for her well they take a deeper interest in her. In doing so they unconsciously cultivate those qualities which make them better citizens.

The dairy cow—the prototype of man's best friend—is wielding a greater influence than she is generally credited with. She has always been found in the front ranks in the march of civilization and no agricultural country can long prosper without her. She is a potent factor in the upbuilding of such a country, financially, and socially and a wise people will appreciate her and encourage the industry of which she is the foundation.

Minn. S. W. S.

A TALK TO BEGINNERS IN DAIRYING ON THE HERD.

Again and again, at the close of a farmers' institute some half discouraged man has approached me and said, "Our cows are good for nothing; there is no use in trying to feed them; they are not worth it; the venture will not pay out; we have got to send outside and buy some pure-bred cows. Where can we get them?" And when I tell them to build on what they have, these men turn away from me, dissatisfied, because they lack the faith that every man should have to make the best of his own environments.

The beginner in dairying should have an ideal in his mind in relation to the herd and he should have a strong purpose to realize it. Only yesterday I saw a man with one of the best dairies in this section. "When I began," he said, "it was my ideal to have a herd of cows that would average 300 lbs. of butter per year. I worked toward that ideal all the time and last year my average was 308 lbs., which gave me a net profit of more than \$50 per cow." Now, the beginner in dairying should not be content with a lower ideal than this; but to realize it the herd must be right and the question is, how is he to begin to build up his herd? But before he can even begin he must have faith enough in the business to enable him to hold on, though difficulties confront him. He must have correct ideas regarding the value of the pure-bred sire, and an appreciation of the

worth of the superior cow, as the mother of his future herd. He must discard the scrub sire and resort at once to means for ascertaining the individual worth of every cow in his possession.

To weigh and test the milk requires but little time, and the results will repay him many fold. We do not need to weigh each mess of milk for, by weighing it one day in each month and testing samples of the milk weighed, we are able to estimate very accurately the amount of butter-fat produced in a year by the individual cow. The difference in the producing power of the animals in the herd is so marked that it is necessary to know each cow individually. If we desire to improve the herd we must save the heifers from the best cows. It will surprise us when we know what the individuals of our herd are doing. We shall then learn the difference between the truth in this matter and mere guess work and shall find that some of the cows that we have hitherto judged unworthy a place in the stable are among the best in our herd.

The heifer calves must receive the best of care from the start. We can now afford this for we hope to make of them better cows than those we now have. They should be kept growing every day. We need not feed them whole milk for more than a few days, but the skim-milk should be gradually introduced and the ration balanced by a very little grain which can be increased slowly as the animals require. Ground flaxseed fed in small quantities is very good. I was fortunate recently in obtaining some of this from a farmer in the northern part of the state. If we can find someone who is growing flax and buy the seed directly of him, we can have flaxseed meal at a price that is very reasonable. We should teach the calves to eat their grain dry as soon as possible. Calves will eat a quantity of whole corn, chewing it well and thriving on it, as the carbohydrates in the corn are balanced by the protein which is found in excess in the skim-milk. Two or three months before these heifers freshen we should begin to feed them grain in small quantities at first, increasing the ration as the days go by. Their udders will develop under this treatment, they will be strong and vigorous and will pass through the ordeal of freshening, and be in fine condition for work.

Desiring to build up the herd as rapidly as possible, we must take good care of these young cows. We need to weigh and test their milk often that we may know just how well they are doing and we need to feed them liberally but carefully, always mindful of their health and keeping their appetites keen all the time. We can afford to spend much time in investigating the daughters of the sire we have chosen. The sire we want is the one who gets the largest number of good producing animals and we should lose no time and spare no pains in the effort to ascertain not only the worth of the heifers we have grown ourselves but of those which our neighbors have secured from the same source. All the heifers will not be noted producers but we want to use the sire that numbers among his get the most profitable producing animals. As we progress in this work our knowledge will increase with experience and it will be easier for us to find out the things we should know. It is the work of but a few years to build a herd of cows that are practically as good as pure-bred animals, if we will but stick to our ideal. But he who doubts and wavers must fall out of the procession. Having once chosen our breed of cows we should stick to it, nothing but harm can result from mixed breeding, especially where the breeds differ widely in general characteristics.

The Jersey, the Guernsey, and the Holstein are good dairy animals and he who chooses either of these breeds will make no mistake. If he will keep his ideal in mind, cull out the unworthy specimens that are bound to appear from time to time, and persevere he will win out in the end. There is not a man who reads this little article who cannot build up his herd and make it produce profitably, if he will but follow these simple suggestions and not be turned aside by small obstacles. We should make larger investments in dairying, the time is ripe for this, prices are right for all dairy products and no business possible on the farm will pay us better.

Oceana Co. W. F. TAYLOR.

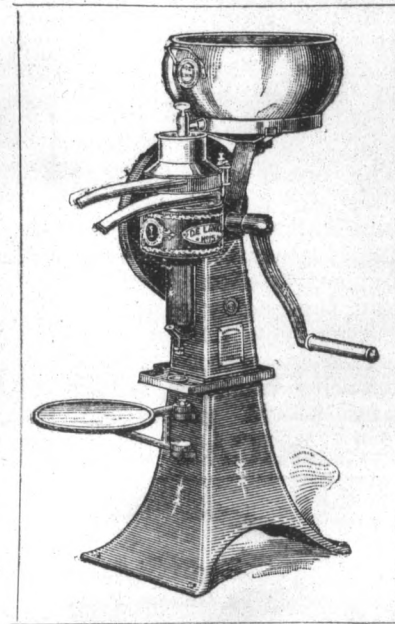
The dairy barn should always be neat and clean. Occasionally it is necessary to do a little extra—wash the windows, sweep down cobwebs, and pick up materials that have reached out-of-the-way places. Now is the right time for this.

DE LAVAL and OTHER CREAM SEPARATORS

Every separator manufacturer and dealer attempting to compete with the DE LAVAL today claims his machine to be "like the DE LAVAL," "as good as the DE LAVAL," or "about the same as the DE LAVAL."

Some even go so far as to falsely assert that it is licensed under DE LAVAL patents.

Their claims are true only to the extent that every one of them IS making a machine after some DE LAVAL type of ten to twenty years ago, on which the DE LAVAL patents have expired. But these copied old DE LAVAL types were either never good enough for the De Laval Company to actually manufacture itself or have been discarded by it at least ten years ago in its constant development and improvement of the cream separator.



Not a single one of these would-be imitating competing machines is in any way like the improved DE LAVAL separator of TODAY. None of them is capable of doing as good work, or being run, cleaned and handled as easily. None of them is nearly as well built or will last half as long.

There is not a prospective buyer of a separator anywhere who cannot SEE and PROVE the important difference FOR HIMSELF if he will only go to the trouble of looking up the nearest DE LAVAL agent or writing the Company if he can't find one.

It is well worth while for every intending buyer to do this. It means a saving in quantity and quality of cream and butter, time and trouble, twice a day, or every time he puts milk through the separator. It means a machine that will last twenty years instead of a few months or perhaps as long as five years at the outside.

It's the pleasure as well as the business of every DE LAVAL agent to explain and demonstrate the difference between DE LAVAL and other separators.

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MAKING THE DAIRY BUSINESS PAY.

Dairying is a great business and the man who is making a success of it is the one who is striving to keep up with the times. He is always looking for ways in which to advance. He has learned that to know how to milk a cow and make butter are only small items in the dairying business. He has learned that he must study the breeds and find which is best adapted to his farm and the branch of dairying that is being pursued. He must know about animal form and its relation to economical production and the grading up of a herd by breeding along proper lines; the kinds of food and how to proportion them so as to get the best the best results both in production of milk and in the promotion of the health of the herd; the proper construction and equipment of his barn; how to handle the milk so as to get best results. These are some of the things he must study continuously, so that he will be ever improving and keeping up with the times. He must produce more and at less cost. The cows themselves are the first consideration. They must be of the breeds that have been bred up for dairy purposes alone. The dual purpose cow is only a delusion. She is not a profit maker for a cow is either good for dairy purposes or for beef; she can't be profitable for both. The finest dairy herds today, are composed of Ayrshires, Guernseys, Holsteins, Jerseys that have, through the many years past, been bred for milk-producing purposes alone. There are plenty of bulls of these excellent breeds and by a careful system of breeding, any herd should be graded up to a high standard.

No matter how carefully bred up a herd is, the best results will not be obtained unless economical methods of feeding are used. By economical methods I do not mean scant feeding, but balancing the cow's rations so that they will give best results. The rations of grain, grasses and roots must be so fed that the cow will get the proper elements for producing milk and maintaining her own health and vigor. The food must be so given that the cow will not become tired of any one thing but the different things should be so blended as to give her a sufficiency of each. There are times when some things should be fed in greater quantities than others. The cow that is to produce a calf should have an abundance of bone and muscle-building food with plenty of succulent matter. The cow is a hard-working machine and must be given care or she will not give the best of results.

It has not been so many years since most dairymen let their cows stand in any sort of a building during the winter, but they now realize that the cow must have warm quarters so that she will turn her food into milk instead of using it to keep herself warm. The stable must be warm, yet have good ventilation so that the cows can get plenty of fresh air. Cleanliness is another matter of great importance. The floor upon which the cows stand should be of the proper length so that droppings will fall into the gutter behind the cows. Keep all litter cleaned up so that there will be nothing to impart odor to the milk. See that the cows have plenty of water, warm in winter and pure at all times. The man who allows his cows to get their supply of drinking water from a scum-covered, stagnant pond is not worthy of being called a dairyman.

These are a few of the things a dairyman must study and learn, if he expects to make a success. The market for high-class dairy products is practically unlimited and the prices are higher than ever before. The man who can and will use his brains is the one who is making money, in the dairying business today. Are you one of them and are you doing your best?

Ohio. S. CONNELL.

Dairy interests have run against a snag, the cold storage warehouses of the country having overdone the business in buying and storing butter last June. Recently owners of this butter have been forced in some instances to offer their goods on the market in Chicago, the banks refusing to extend their loans, and creamery butter that cost from 27 to 29 cents per pound last June has been disposed of at 24 cents. This means that owners not only lost several cents a pound by selling below cost, but they also sacrificed the interest on their investments, as well as insurance and storage charges. The singularly mild and pleasant weather experienced during the autumn and early winter has resulted in a much larger flow of milk than usual, feed being plentiful nearly everywhere, and this has brought about a largely increased output of butter, so that the demand for cold storage butter has been much below the average.

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EXCELS ANY SEPARATOR IN THE WORLD

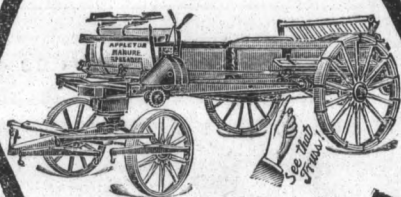
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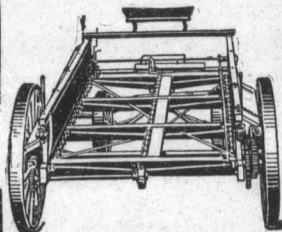
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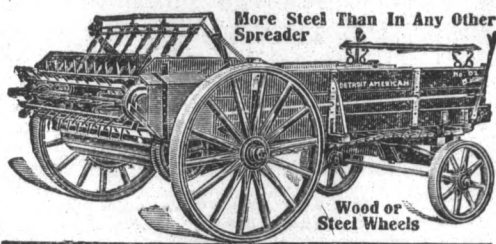
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Last year when we came out with 19 new improvements on Detroit-American Spreaders, everybody thought we had reached the climax of value. But this year we jump still further in the lead with better spreaders and bigger value than even we have ever been able to offer before. Detroit-Americans beat them all again. Look here! Endless apron, return apron, steel or wood wheels, 50 to 100 bu. capacity—also Wagon Box Style—and each Detroit-American an absolutely gearless spreader. There's no complicated mechanism—no lost motion. So simple that it is proof against mistakes of boy or careless help. No matter what style or size spreader you want, here it is at a price that you can't resist. There's more steel in the Detroit-American than in any other spreader. That's another reason for strength and light draft. Get our book and you'll know why no other manufacturer or dealer can touch our proposition to you.

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trial, we'll pay the freight back. If you decide to keep it, send the money or pay on time. You are the judge and your word goes. Remember, this proposition is on the style and size spreader you want. Don't pay a dollar on any spreader till you get our book. Also shows the famous Detroit-American Tongueless Discs and Detroit-American Cultivators. Write postal now. Address

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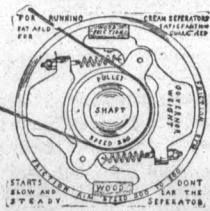
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WHY SOME DAIRYMEN FAIL.

It is not always wise to diversify our farm practice to such an extent that the main lines demand too much of our time and thus cause a neglect in the proper management of some affairs and result in failure to make a profit. I, therefore, believe that dairying should be made more of a business than we are inclined to make it at the present time. This does not mean that we should give up all other lines of farming while in the dairying business, but that if we engage in the keeping of cows, we should give it sufficient study to make a fair profit. The trouble with the dairy business today, beyond the question of a doubt, is that it is being carried on by farmers and not dairymen, who know little or nothing about the profit or loss of the animals they are keeping. This, coupled with their lack of knowledge in the care and keeping of such stock, results in a very poor average earning for the average milk cow. It would be better for all concerned if more men made dairying a business. As for the small holder and renter, he cannot afford to keep poor cows for it has been demonstrated most thoroughly that the poor cow actually brings about a loss to her keeper, instead of a profit, and a few good cows, if any at all, should be his motto. I believe that the reason so many of our farmers use poor and inferior sires in their herds, is due to the fact that they are not in the dairy business, but that it is a side issue and, therefore, they feel that they cannot afford a better sire. This, you know, is a great mistake and perhaps is one of the most severe on the industry from a national standpoint.

Nebraska.

A. L. HAECKER.

THE MAN BEHIND THE COW.

He who prefers to handle the horses, sheep or other live stock and merely tolerates the cow because he thinks there is more money to be made that way, is not apt to succeed. There must be an in-born love of the business, a natural fondness for the calf, the heifer, the mature animal, combined with a hearty sympathy for the stock under his care in order to get the best possible results.

In every dairy community there are men who are more successful than their neighbors, and for this there is more than a passing reason. Dairying, as much or more than any other branch of agriculture, demands careful study, business foresight, good judgment and a natural adaptability for the work. Here the square peg in the round hole is not more completely out of place than the dairyman who does not enter heart and soul into his calling. To begin with, the man behind the cow must be of the right kind, not a horseman, nor a sheep man, but a cow man, and a dairy cow man at that.

Given the right kind of a man, the next consideration is the cow. Those about to engage in dairying frequently propound this question to those who have had experience: "What breed shall I start with?" In this connection I will say, that all the recognized dairy breeds are good. Let the prospective dairyman look over the different breeds, and select the one he likes best and also to suit his conditions, whether Jerseys, Guernseys or Holsteins, but it is to be hoped you will not make the mistake of starting with a lot of beef breed cows, expecting to breed a successful dairy herd. While it may not be an absolute impossibility to do this in a measure, but the time, trouble and expense involved are too great to warrant the undertaking. The chances are that the majority of the animals will be more profitable for beef carcasses than for milk and butter. The two do not mix well, except in very occasional instances.

The decision as to which breed is the one for any particular person must be decided by the man himself. He should follow his personal preference, consistent with his existing conditions. If the Jersey, who has well and deservedly won a place of distinction in the dairy ranks, will best fit the conditions, then make the Jersey your choice. If you prefer the Guernseys, possessing about the same general characteristics as the Jerseys, you will do well to select that breed. Possibly you care not at all for these, but see greater advantages in the Holsteins, with their big frames, easy milking teats and large production of milk. If so, then the Holstein is the cow to use. All are good. The main thing is to get the kind best liked, considering the work that is required of them, then study to get the very

best animals of the breed and give them the best of care.

There are two ways of getting a start in dairying. A man, if he has the means, can go out and buy his cows, or he may grade up the ones he already has.

Many good working herds are grades brought up, by continued use of pure-bred males, to a point where they are practically thoroughbred. So far as work is concerned, they are as good.

Personally, I have tried this and know that it can be made a success. I can recommend it as an inexpensive way of securing a good working herd and if judicious selection of males is made, the increase will gradually drop the characteristics of the grade dams and take on the traits and general appearance of the breed represented by the sire, so that there will be a marked uniformity throughout, something highly desirable in any herd.

While this is a slow process, it is just as certain, and is the poor man's way of getting good cows.

Yet, at the same time I would certainly advise the beginner to secure a start with pure-bred animals, even though the start be small.

The mere matter of a pedigree and a registry certificate means additional dollars on a sale sometimes, although there may be no appreciable difference in merit between them and some grade individuals. A heifer calf in two years will be giving milk with the number of pure-bred animals increased to two. In a few years quite a number will follow from even so small a beginning.

Illinois.

R. B. RUSHING.

MICHIGAN DAIRYMEN'S 1911 MEETING.

The 27th annual convention of the Michigan Dairymen's Association will be held at Bay City, February 21-24. The following four days' program has been arranged. A perusal of the subjects for discussion and the men picked to speak thereon, will certainly constrain men who have an interest in the dairying business to be on hand when the president calls the meeting to order next Tuesday morning. The program by days is as follows:

Tuesday, 9:00 A. M.

Address of Welcome—Mayor Hine, Bay City.
Response—N. P. Hull, Dimondale.
President's Address—T. F. Marston, Bay City.

Report of secretary and treasurer—E. S. Powers, Hart.
Address—E. K. Slater, Secretary National Dairy Union, Minnesota.
Discussion—Geo. A. True, Armada.
Dairy Farmers' Session, Tuesday, 1:30 P. M.

Dairy Improvement—F. H. Scriber, of Wisconsin.
What the Government is doing for the Cow Testing Association—Helmer Rabild, Washington, D. C.
Dairying and Dairy Equipment—F. H. Vanderboom, Marquette.

Milk Consumers' Session—Tuesday, 7:30 P. M.
My Experience and Modes in Dairy Farming—Mrs. Scott Durand, Illinois.
Consumer's part in Securing Pure Milk—Dr. C. E. Marshall, Agricultural College.

Value of Dairy Products in the Household—Dr. Floyd E. Robinson, Lansing.
The dairy industry illustrated by the U. S. Department of Agriculture.

Buttermakers' Session—Wednesday, 9:00 A. M.
Address—D. B. White, U. S. Department of Agriculture.
Benefits of Co-operation Among Creamerymen—A. L. Burroughs, Owosso.
Discussion—Wm. Bechtel, Cairo.
Organization—Sam Shilling, Illinois.
Wednesday, 1:30 P. M.

Market Conditions and how to Improve them—H. Sondergaard, Pennsylvania.
Future of Gathered Cream Plants—F. L. Eldridge, Breckenridge.
Discussion—Claude A. Grove, Litchfield.
Creamery Accounting—Martin Seidel, Bay City.

Shall we Pasteurize?—C. M. McCready, Ithaca.
Discussion—W. B. Liverance, Lansing.

Exhibitors' Session—Thursday 8:30 A. M.
The early part of the morning session will be given over to the exhibitors, who will furnish visitors with an entertainment of merit, after which election of officers will be disposed of under the management of the board of directors.

Cheesemakers' Session—Thursday 2 P. M.
Cheesemaking for the Home Market—T. A. Cook, Branch.

Discussion—E. A. Haven, Bloomington.
Cheddar Cheesemaking—Thos. Hens, Ontario.

Discussion—R. A. Murry, Byron.
Friday, 9:00 A. M.

Michigan Cheese—Ex-Governor Warner, Farmington.
Discussion—George C. Peters, Chapin.

The Use of Starters in Cheesemaking—Emil Falk, Davison.
Utilization of By-Products—Colon C. Hille, Coopersville.
Exhibits of butter, cheese, milk and cream will be made. Cash prizes are offered and it is expected that the entries will be large and of high quality.

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are the people for you to talk to. They will tell you it pays to have the Tubular, which produces twice the skimming force, skims faster and twice as clean as others. They will tell you it is fine to have a separator without disks or other hard to wash, quick to wear, sure to rust contraptions. Here are two statements from thousands we have:

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T. C. Atkeson
Aaron Jones,
Legislative Committee, National Grange.

PETITION AGAINST CANADIAN RECIPROCITY.

We, the undersigned farmers, respectfully urge that the Canadian Reciprocity bill now pending in Congress should not become law for the following reasons:

1. The bill provides for the admission free of duty of all Canadian farm products. Since Canada is the only country from which any considerable quantity of these products can under any circumstances be imported, this means free trade in practically everything the farmer produces.

2. While putting farm products on the free list, the Reciprocity bill makes no material reduction in the high tariff rates on all the manufactured articles the farmer buys, and therefore gives him no relief from the heavy burden of taxation imposed by these duties.

3. The theory on which our protective policy has always been defended is that all classes are equally entitled to protection. The farmers, however, receive much less protection than the manufacturers, for while farm products are taxed on the average about 25 per cent, manufactured articles are taxed on an average about 45 per cent.

4. The Canadian farmers, by reason of their lower general tariff and preferential trade arrangements, can buy manufactured goods at lower prices than those prevailing in this country. The prices of farm lands in Canada are also much lower than in the United States. These conditions give the Canadian farmers an advantage over us, and the free admission of their products will subject us to unfair competition.

5. To show that this Reciprocity measure is not an honest effort to reduce the cost of living in the interest of the consumer, it is sufficient to point out that, while wheat is on the free list, flour is taxed 50 cents per barrel, and that while cattle, sheep and hogs are free, meats, both fresh and cured, are taxed 1 1/4 cents per pound for the benefit of the Meat Trust.

As the adoption of the proposed Reciprocity law would work a serious injury to the farming interests of this country, and would greatly reduce the value of our farm lands while increasing the value of Canadian farms, we earnestly protest against its enactment.

All farmers who are opposed to free-trade in farm products with a high tariff on manufacturers, should sign above petition and send it at once to their Senators and Congressmen.

POULTRY AND BEES

COLONY HOUSES FOR THE GROWING STOCK.

In preparing the equipment for the season of hatching and brooding which is soon to open, the so-called colony house should be given consideration. Even where chicks are hatched so early that indoor brooding is necessary colony houses of some sort may be used to advantage when the young fowls are ready to leave the brooders. For later hatched chicks the colony house may be made to serve as an outdoor, or cold air, brooder by simply providing a hover under which the chicks may congregate at night and on damp, chilly days. It is even feasible to fit each colony house with a hover which can be heated, if that seems desirable. Such houses need not be expensive, and this fact should make it possible for the poultry farmer to have enough of them to accommodate his young stock throughout the growing season. About 20 or 25 chicks to a house will be sufficient for good results.

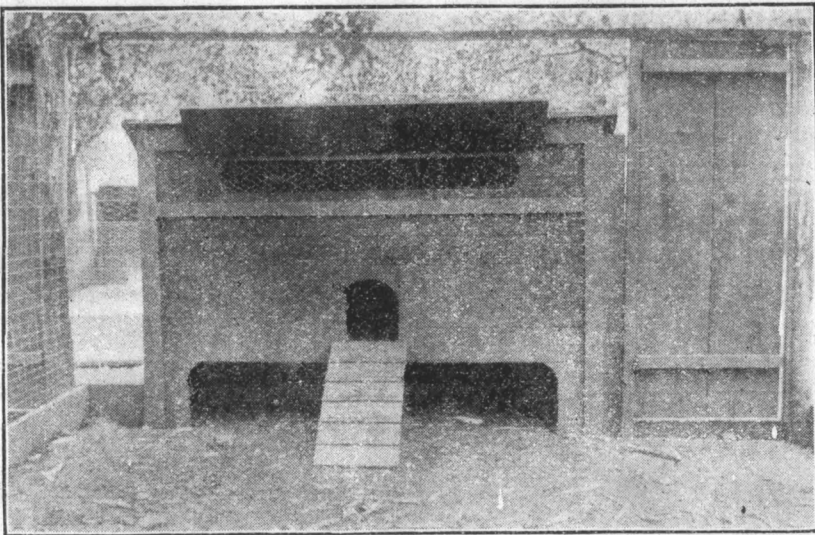
In the illustrations upon this page are shown some colony houses made from piano boxes. It will be seen at a glance

thorough cleaning a rather simple process. The matter of ventilation becomes an important one as the chicks grow and hot weather comes on. Moving the house occasionally to give the chicks new surroundings is a good plan, but the main thing is to keep it clean and well ventilated at the season when these conditions are so much appreciated by the fowls.

FRESH AIR IN THE POULTRY HOUSE.

When a large number of fowls are confined to limited quarters, improperly ventilated, it requires but a short time for the fowls to remove all the oxygen from the atmosphere. As oxygen is an essential element in the sustenance of constitutional vigor, its abundant supply is a matter of great importance in maintaining strong, healthy stock.

Farmers as a rule pay little attention to the supply of fresh air in the poultry house. They think that if the door is open during the day the fowls will secure the necessary amount, but there are several serious drawbacks to this method of ventilating. First, it allows circulation of air about the fowls which, in cold weather, chills them. Second, it causes sudden variations of temperature which produce a sluggish physical condition. Third, it promotes rapid accumulation of moisture in the poultry house. Fourth,



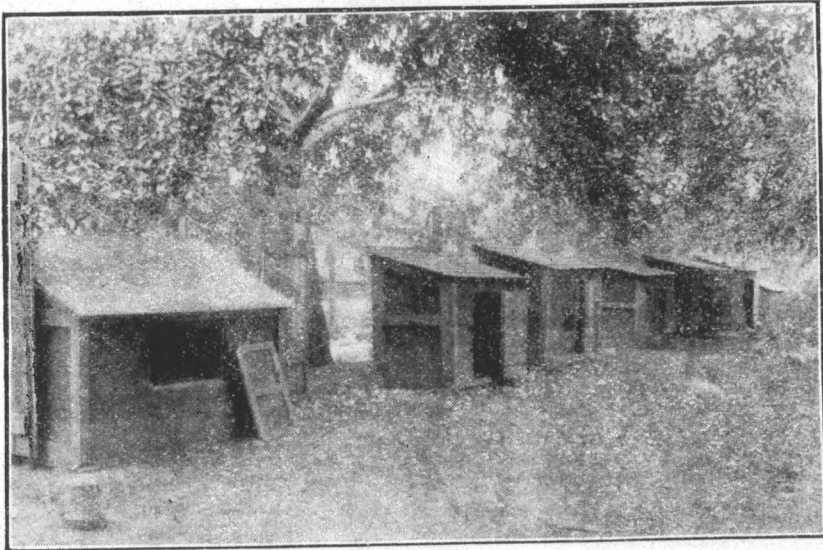
Colony House for Chicks, Built from a Piano Box. (Front View).

that, while these may be a trifle more costly than the old-fashioned coop, they are very much superior as quarters in which to raise chickens. They are easily large enough to accommodate 25 brooder chicks, or, with a partition midway between the ends will furnish a home for two hens with chicks. As the chicks grow, the addition of a few perches will make such a house an ideal roosting place for the young fowls and they will continue to make it their home until their owner is ready to move them to the main poultry building at the season's close. This is far more satisfactory than raising them in coops which they will outgrow before the end of the season, in which case most of them will be found roosting

and no less vitally important, it is productive of disease. There are cheaper and more efficient methods of ventilating than by leaving the door open.

If the house is closed up tight and there is no means of changing the air within it, dampness is sure to accumulate whenever there is a change of weather. Some system of ventilation should be installed whereby the impure air can be removed and fresh air from the outside brought in. Profitable egg production is not possible without an abundant supply of fresh air in the poultry house, and experiments show that it is impracticable to feed for winter eggs in overcrowded or poorly ventilated quarters.

There are several good and practical



A Row of the Colony Houses from the Rear.

in trees, upon gates and fences, in barns and sheds and upon farm implements when frost comes in the fall.

Of course, in the construction of such houses cleanliness and ventilation must be kept in mind. It is a good plan to make the floor detachable after the fashion of the movable hog houses now in use upon many farms. This makes frequent and

ways of furnishing the necessary fresh air, any one of which can be made to meet the needs of the average poultryman. Very effective and quite generally in use are the muslin covered windows. The regular sash is removed and a frame on which muslin has been tacked is substituted. This method has been found very practical as it allows a current of

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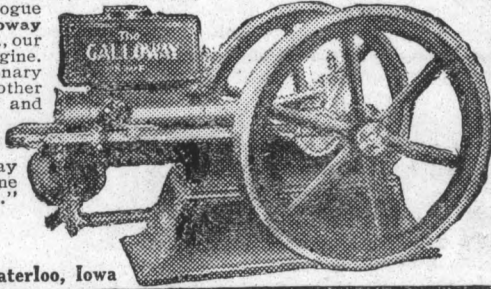
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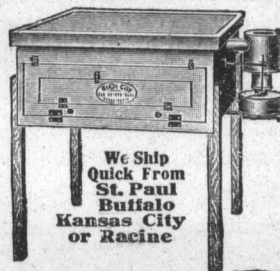
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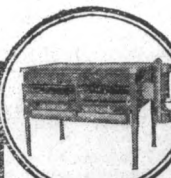


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Strong, fireproof, metal case, High, roomy nursery, Automatic heat regulator, Cold-rolled copper hot water tank, Hot water heating system, Reliable non-breakable lamp, Wide dead air space. Brooder has safety lamp—can't explode or break. Its roomy, cozy, free from drafts, easy to clean, every part quickly reachable. Order both incubator and brooder direct from this advertisement. We guarantee satisfaction or you get all your money back quick. Brand new poultry book free. Act now on this bargain. THE NATIONAL INCUBATOR CO., 140 18th Street, Racine, Wisconsin



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and Almanac for 1911 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 911, Freeport, Ill.

air to pass into the poultry house without causing a draft. On all my poultry houses I use this system and consider it perfectly satisfactory. The King system of ventilation can be installed with equally as satisfactory results, but it incurs additional expense.

The practice followed by some farmers of leaving a window down at the top, or the door open, is imprudent, as the wind is very apt to change suddenly and cause a draft. While the hens are at work, and when on the roost at night, they should be protected from direct drafts, so when a system of ventilation has been installed it is very important that it be kept in proper working order. Preventive measures are much more effectual in forestalling losses from disease than treatment.

Abundance of fresh air in the poultry house has an invigorating influence upon the fowls and promotes activity. The great secret of securing a maximum flow of eggs during the winter months is keeping the hens busy. If the atmosphere of the house become impure and foul it causes a sluggish condition of the entire system and no animal can do its best work under such conditions.

Shiawassee Co. LEO C. REYNOLDS.

HOW I STOPPED EGG EATING.

A few winters since I had 40 fine pullets running together in a scratch pen by day but roosting in four different pens at night. They had just started laying nicely when I found the nests empty and the nest eggs smeared with broken eggs. Now, when a large flock of fowls contracts that habit it is very difficult to locate the offenders, and it is as contagious as smallpox.

I happened at the time to have a quantity of egg shells. I filled these with a mixture of kerosene, cayenne pepper and mustard made into a dough with flour and water. I filled a dozen or so of the shells with this, plastered the cracks with white cloths, deposited them in the nests and looked on. Soon the entire 40 pullets were in a fierce stampede to get the coveted morsels. They gulped them without tasting, if a hen can be supposed to taste. Another dozen were ready for a second helping and again the rush began, but soon a few were satisfied and shook their heads and wiped their bills—as though something was wrong. When the last egg

was increased gradually, until about double that quantity is given. Continue feeding milk if you desire but let it be skim-milk. The thin shells you mention are another indication of overfatness and lack of exercise.

How soon after males are placed with hens in the breeding pen will it be safe to guarantee the fertility of the eggs? Kent Co. A. A. J.

Most authorities agree that it is unsafe to guarantee fertility in the eggs produced during the first week or ten days after introducing the male. Occasionally poultrymen report satisfactory results from eggs secured a few days after mating, but in a matter of so much importance it is wise to take no chances. It is also deemed good practice to get fertile eggs into incubators or under hens within two weeks from date of laying as they are known to decline in germinating power as they grow older, thus increasing the chances of chicks that are too weak to get out of the shells.

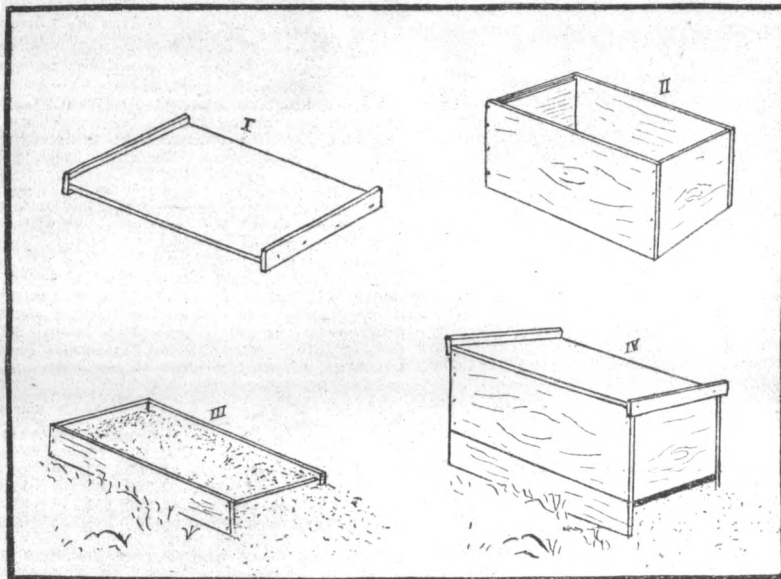
Is rape a good plant to grow for geese? What is the best food for them during the laying season? Have taken your paper for a number of years and like it very much in every way.

Newaygo Co. Mrs. P. G. D. During the breeding season feed the geese a mixture of bran, middlings and corn meal, equal parts by measure, adding to it an amount of beef scraps equal to 5 per cent of the bulk of the grain mixture. Give a light feed of this mixture in the morning. During the day they should have some green food, steamed clover and cooked vegetables being most available at this season. At night give a liberal allowance of cracked corn. We know of no reason why rape should not make very satisfactory pasturage for geese as this plant is closely related to cabbage, and geese are fond of the latter. The fact that rape is a rapid and luxuriant grower, and that it springs up quickly after being pastured off, should make it a very economical source of green food for the purpose for which you propose using it.

CHEAP HIVES FOR EMERGENCIES.

Generally speaking, cheap contraptions are an abomination in the bee yard, but there are times when something which can be gotten up in a hurry and at a small cost will be appreciated.

In preparing such hives, however, one should see to it that spacing is kept right



I, Hive Cover. II, Hive Body. III, Bottom-board. IV, Hive in Use.

was gone I again filled the nests and scattered a few about the floor for good measure. By noon not a pullet would notice an egg if laid at her feet and would not even touch it with her bill or feet. Though the decoy eggs lay about the floor for days, the habit was broken for good and I never knew of one of the flock eating another egg.

PRISCILLA PLUM.

IN ANSWER TO INQUIRIES.

L. W., Oceana Co.: There seems little doubt, from the particulars given in your letter, that your hens are too fat, made so by feeding too much starchy food. The grain ration was sufficiently starchy to call for some animal food to balance it. The addition of potatoes only made matters worse, and the fact that they finally refused to eat the potatoes indicates that the ration did not properly meet their wants. You helped matters somewhat by substituting wheat for the corn. Reduce the grain allowance for a time and begin feeding a little meat scrap or green cut bone. This must be given gradually—half an ounce per hen once or twice a week will be enough at first and it may

and nothing but standard frames should be used. Then when you get around to it you can simply transfer your frames to another hive and nothing will be lost. The hive body can be made by simply nailing four boards together, leaving the ends $\frac{3}{4}$ inch lower than the sides. Then form a rabbit by nailing on a strip $\frac{3}{4}$ inch wide and $\frac{3}{4}$ inch thick on the outer edge of the end boards, nailing it on with the thin edge up. The hive should be just the right depth so that when the frames are hung in the rabbits they will hang with the bottoms just on a level with the bottom of the hive.

A cheap bottom-board may be made by nailing four strips together, leaving one of the ends an inch lower than the sides and the other end. Set this on the ground and fill with sawdust or clean sand and you have a bottom-board that will serve the purpose just as well as a more expensive one. A very good cover may be made by cutting a wide board just the right length and nailing strips on each end to keep it from splitting. I do not advise such hives for general use, but, as I said before, as a makeshift they are all right.

Mecosta Co.

L. C. WHEELER.

HEREDITY

Can Be Overcome in Cases.

The influence of heredity cannot, of course, be successfully disputed, but it can be minimized or entirely overcome in some cases by correct food and drink. A Conn. lady says:

"For years while I was a coffee drinker I suffered from bilious attacks of great severity, from which I used to emerge as white as a ghost and very weak. Our family physician gave me various prescriptions for improving the digestion and stimulating the liver, which I tried faithfully but without perceptible result.

"He was acquainted with my family history for several generations back, and once when I visited him he said: 'If you have inherited one of those torpid livers you may always suffer more or less from its inaction. We can't dodge our inheritance, you know.'

"I was not so strong a believer in heredity as he was, however, and, beginning to think for myself, I concluded to stop drinking coffee, and see what effect that would have. I feared it would be a severe trial to give it up, but when I took Postum and had it well made, it completely filled my need for a hot beverage and I grew very fond of it.

"I have used Postum for three years, using no medicine. During all that time I have had absolutely none of the bilious attacks that I used to suffer from, and I have been entirely free from the pain and debilitating effects that used to result from them.

"The change is surely very great, and I am compelled to give Postum the exclusive credit for it." Name given by Postum Co., Battle Creek, Mich.

Read "The Road to Wellville," in pkgs. "There's a Reason."

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

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THE A. I. ROOT COMPANY, Box 54, Medina, Ohio.

Poultry the Best Paying Branch of Farming

The 1911 catalog by Robert H. Essex, poultry and incubator expert, will start you right. Improved incubators and brooders. Read "Why Some Succeed Where Others Fail." **ROBERT ESSEX INCUBATOR CO.** 92 HENRY ST., BUFFALO, N. Y.

THOROUGHBRED S. C. BROWN LEGHORNS—A few cockerels at \$1.25 each. Eggs \$1 per 15, \$5 per 100. **LEWIS T. OPPENLANDER**, Rt. No. 4, Lansing, Mich.

Barred Plymouth Rocks—A choice lot of cockerels and pullets at farmers prices. Write. **W. C. KEMPSTER**, Coldwater, Michigan.

Barred Rock Chks.—Vigorous, farm raised, and bred from prize winners. \$3 each, two for \$5. **J. A. BARNUM**, Union City, Mich.

Buff Wyandotte Cockerels \$1.25 each, 2 for \$2.25, 3 for \$3.00. Eggs in season \$1.50 for 13. **F. E. HARTWELL**, Cannonsburg, Michigan.

EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Black Polish. **H. H. KING**, Willis, Mich.

CHOICE business & prize bred Mammoth Toulouse Geese & S. C. White Leghorns low prices for quality. New catalogue free. Write. **P. K. FFOUTS**, R. 2, Bucyrus, Ohio.

Buff Rock Cockerels—Farm raised. Healthy, good size, shape and color. Also pullets. **WILLIS S. MEADE**, Rt. No. 3, Holly, Mich.

Big Business Barred Rocks **J. E. TAYLOR**, Belding, Michigan.

COCKERELS FOR SALE—Light Brahma White Wyandotte & B. P. Rocks, good ones, also pullets. **E. D. BISHOP**, Route 38, Lake Odessa, Michigan.

BUFF PLY. ROCK and **S. C. Buff Leghorn Cockerels**. Exceptionally good stock at farmers prices. Eggs in season. **F. J. H. BURCH**, Blaine, Michigan.

R. C. B. Leghorn Cockerels—Kulp strain, the best there is, \$1 to \$3. Eggs in season. **C. W. WAITE**, Gobleville, Michigan.

FOR SALE—Choice S. C. W. Leghorn Cockerels. Celebrated Ferris strain. **JOSEPH OOOBOOK**, Montague, Mich.

Wyckoff-Blanchard Strain and S. C. W. Comb White Leghorn. Farm raised. Trap nested, heavy winter layers. Eggs 100 \$5, 50 \$3.15 \$1. **F. E. BOSTEDOR**, Eaton Rapids, Mich.

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SLYER, GOLDEN and WHITE WYANDOTTES 100 S. White cockerels at \$2 and \$3 each. New circular after January 15th. **C. W. BROWNING**, Portland, Mich.

S. C. B. MINORCAS—Large, beautiful plumage—all right every way. Priced to sell. Guaranteed to please. Eggs \$1 per 15. **R. W. MILLS**, Salem, Mich.

White Wyandotte Cockerels—A few good breeders left. Write soon. **A. FRANKLIN SMITH**, Ann Arbor, Michigan.

BUFF PLYMOUTH ROCKS—Only perfect standard cockerels, April and May hatch at \$2 and \$3 each. Excellent laying strain. **Fred Nickel**, Monroe, Mich.

DOGS.

FOR SALE, Handsome black and white Collie Pups, old. \$3 to \$10 each, according to age and markings. **FLEETFOOT KENNELS**, Detroit, Mich.

TRAINED foxhounds and hound pups for hunting fox and coon. Also collies. Inquire. **W. F. LECKY**, Holmesville, Ohio.

YOU WRITE W. J. ROSS, Rochester, Michigan, for those beautiful sable and white Collie Puppies, of the finest breeding, and from stock workers.

MARKETS

DETROIT WHOLESALE MARKETS.

February 15, 1911.
Grains and Seeds.

Wheat.—Concurrently with the increased probability of the passing of the reciprocity agreement with Canada, dealers loosened their grip on the wheat trade, and prices declined. The likelihood of free wheat entering from across the border, causes millers to hold off in making purchases and thus take from the market the support of their demand. Other conditions contributing to the decline are better weather in the southwest where the dry territory is confined to narrower limits, and liberal receipts from farmers. Flour is not in active demand. Argentine is offering a small surplus to the world and Liverpool has shown a strong trade most of the past week, with occasional weak spots. One year ago the price paid here for No. 2 red wheat was \$1.25 per bu. Quotations for the past week are:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	93 3/4	92 3/4	.98	.95		
Friday	92 3/4	91 3/4	.97	.94		
Saturday	92 3/4	91 3/4	.96 1/2	.93 1/2		
Monday	92 3/4	91 3/4	.96	.93		
Tuesday	91 3/4	90 3/4	.95 1/4	.92 1/4		
Wednesday	91	90	.95 1/4	.92 1/4		

Corn.—The corn situation taken alone is bullish, in that receipts have been held up by bad roads. The receipts, however, are about four times what they were at this season a year ago, with shipments from grain centers proportioned about the same between the two years. This, and the influence of the depressed wheat trade acted against any advance and caused a slight decline. One year ago the price for No. 3 corn was 64 1/2c per bu. Quotations for the past week are:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	46 1/2	47 1/2
Friday	46 1/2	47 1/2
Saturday	46 1/2	47 1/2
Monday	46 1/2	47 1/2
Tuesday	46 1/2	47 1/2
Wednesday	46	47

Oats.—Reports show the receipts of oats on Tuesday to be over twice what were received on the same week-day a year ago. This, with the weak feeling in wheat, sent prices to a lower level and gave the trade a discouraging outlook to farmers. The local market is dull. At Chicago there was a liberal amount of trading on Tuesday. One year ago the price for standard oats was 49 1/2c per bu. Quotations for the past week are:

	Standard	No. 3
	White.	Yellow.
Thursday	33 3/4	33 3/4
Friday	33 3/4	33
Saturday	33 3/4	33
Monday	33 3/4	33
Tuesday	32 1/2	32
Wednesday	32 1/2	32

Beans.—Local bean men are doing nothing. They left prices on last week's basis with the exception that cash goods were put at the same figure as March options. The figures given are merely nominal. No transactions are reported at these prices. Quotations are:

	Cash.	Jan.
Thursday	\$1.97	\$2.00
Friday	1.97	2.00
Saturday	2.00	2.00
Monday	2.00	2.00
Tuesday	2.00	2.00
Wednesday	2.00	2.00

Clover Seed.—Alsike is quoted ten cents higher this week. Other grades run from five cents lower to steady. The market is firm but not quite so active as a month ago. Following are the quotations for the week:

	Prime	Spot.	Mar.	Alsike.
Thursday	\$8.75	\$8.75	\$9.20	
Friday	8.75	8.75	9.20	
Saturday	8.80	8.80	9.20	
Monday	8.80	8.80	9.20	
Tuesday	8.80	8.80	9.20	
Wednesday	8.80	8.80	9.20	

Barley.—Dealers have pushed the price of barley down proportionately with other grains, good samples are now quoted at \$1.60 per cwt., which is 10@20c below the price of a week ago.

Rye.—No change. Market dull. No. 1 rye is quoted at 84 1/2c per bu.

Visible Supply of Grains.

	This week.	Last week.
Wheat	43,133,000	43,740,000
Corn	10,965,000	9,146,000
Oats	16,298,000	16,415,000
Rye	361,000	390,000
Barley	1,424,000	1,544,000

Flour, Feed, Provisions, Etc.

Flour.—The flour trade is dull with prices unchanged. Quotations are:

Clear	4.45
Straight	4.85
Patent Michigan	5.75
Ordinary Patent	4.95

Hay and Straw.—Hay values are steady. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$16.50@17; No. 2 timothy, \$15.50@16; clover, mixed, \$15.50@16; rye straw, \$7@7.50; wheat and oat straw, \$6@6.50 per ton.

Feed.—All grades steady except coarse corn feeds which advanced a dollar. Carlot prices on track are: Bran, \$25 per ton; coarse middlings, \$26; fine middlings, \$28; cracked corn, \$23; coarse corn meal, \$23; corn and oat chop, \$20 per ton.

Potatoes.—This market is sluggish and nothing is being done outside of supplying the easy demand. Stocks are of good size. Prices unchanged. In car lots Michigan potatoes are selling at 37@40c per bushel.

Provisions.—Family pork, \$21.50@22.50; mess pork, \$21; medium clear, \$19@21; smoked hams, 14 1/2@15c; briskets, 13c;

shoulders, 11 1/2c; picnic hams, 11 1/2c; bacon, 15 1/2@16 1/2c; pure lard in tierces, 10 1/2c; kettle rendered lard, 11 1/2c.

Dairy and Poultry Products.

Butter.—The market is steady with last week, except second grade creameries are marked a fraction lower. Dairy goods run steady. Demand good and supply fair. Extra creameries are now quoted at 26 1/2c; firsts, 32 1/2c; dairy, 17c; packing stock at 14 1/2c per lb.

Eggs.—The urgency with which storage men are forcing their goods on the market in the face of heavy fresh receipts has compelled the unusual decline of seven cents per dozen since a week ago. Fresh receipts, case count, cases included, are now quoted at 15 1/2c per dozen.

Poultry.—The only section of the market showing life is the chicken division where the active demand has advanced values a half cent. Other kinds are dull and steady. Quotations are: Dressed—Turkeys, 20@23c; chickens, 15@15 1/2c; fowls, 15@15 1/2c; ducks, 18@19c; geese, 14@15c per lb. Live—Spring chickens, 14@14 1/2c; fowls, 13 1/2@14c; old roosters, 9c; turkeys, 18@19c; geese, 12@13c; ducks, 15@16c per lb.

Cheese.—Michigan, 17c; Michigan, late, 15@16c. York state, September, 17@18c; do. late made, 15@16c; Limburger, old, 16@17c; Swiss domestic block, 18@22c; cream brick, 16@18c.

Dressed Pork.—Price is steady at 9 1/2@10c per lb; for heavy, 9c.

Veal.—Market higher. Choice, 11 1/2@13c; ordinary, 9c per lb.

Rabbits.—Lower. Per dozen, \$1.25@1.40.

Fruits and Vegetables.

Cranberries.—Steady. Quoted at \$3.25 per bu.

Cabbage.—Steady. Selling at \$1.75 per bbl. for new.

Onions.—55c per bu.

Honey.—Choice to fancy comb, 15@17c per lb.

Apples.—A continued active demand at former prices describes this market. Fancy greenings quoted at \$5.25@5.50; Kings, \$5.25@5.50; Baldwins, \$4.50@5.50; Steel reds, \$6; ordinary grades, \$3@3.50 per bbl. Western apples, \$2.25@2.50 per box.

OTHER MARKETS.

Grand Rapids.

The feature of the market this week is the drop in eggs, due to warmer weather and increased receipts. Dealers were paying the outside trade only 17c Tuesday, with prospects of still lower prices if the mild weather continues. No special change is noted in butter, dairy bringing 20@21c; creamery 26c. In live poultry, chickens and ducks are 1c higher, while turkeys are in little demand and are off 1c. Prices follow: Fowls and chickens, 12 1/2@13c; geese, 12c; ducks, 15c; turkeys, 18c. Veal is worth 6@11c. Potato dealers still talk discouragingly about the market and say that Michigan growers are getting more for their stock than outside conditions warrant. Prices are around 30c, the Montcalm county market leading all others as usual. Wheat is off 2c, the mills quoting 88c for No. 2 red.

Boston.

Wool.—The market is easy. Inquiry is confined to narrow limits. Most of the manufacturers are in a waiting mood. Orders for woolen goods are coming in slow and are of unusually small amounts. The unsettled economic conditions appear to be reflected in the trade. The leading domestic quotations are as follows: Ohio and Pennsylvania fleeces—Delaine washed 34c; XX, 31 1/2@32c; fine unmerchanted, 25@26c; 1/2-blood combed, 29@30c; 3/4-blood combed, 29c; 1/4-blood combed, 27@27 1/2c; delaine unwashed, 26 1/2@27. Michigan, Wisconsin and New York fleeces—Fine unwashed, 20@21c; delaine unwashed, 26@27c; 1/2-blood unwashed, 28@29c; 3/4-blood unwashed, 27@28c. Kentucky, Indiana and Missouri—1/2-blood, 27 1/2@28c; 1/4-blood, 26c.

New York.

Butter.—Best grades are higher while others are steady or lower. Creamery specials are quoted at 29c; extras, 25@27 1/2c; seconds to firsts, 19@21c per lb.

Eggs.—Prices have broken badly this last week and the new figures are supporting a weak market. Offerings are large. Fresh gathered extras, 18@19c; do. firsts, 17c; do. seconds, 15 1/2@16c; refrigerators, firsts, 12c; do. seconds, 10@11c.

Poultry.—Market is irregular, with an advance for fowls. Western chickens, 13 1/2@15c; fowls, 13 1/2@16 1/2c; turkeys, 15@23c per lb.

Chicago.

Wheat.—No. 2 red, 90 1/2@92c; May, 92 1/2c; July, 91c per bu.

Corn.—No. 2, 46@46 1/2c; May, 49 1/2c; July, 50 1/2c per bu.

Oats.—No. 2 white, 32@32 1/4c; May, 31 3/4c; July, 31 3/4c.

Barley.—Malting grades, 87@96c per bu; feeding, 60@75c.

Butter.—A further advance of 1/2c on the better grades of creamery has checked the demand, which was showing considerable improvement, and the market is quiet. Dairy butter unchanged. Quotations now are: Creameries, 17@26 1/2c; dairies, 19@22c.

Eggs.—This market has undergone a terrific slump the past week. Top grades have dropped 6 1/2c and miscellaneous receipts 7@8c since this time last week. Despite these declines the market is slow and weak. Quotations: Prime firsts, 16c; firsts, 15c; at mark, cases included, 11@13 1/4c per dozen.

Potatoes.—Prices worked up a few cents late last week and the higher figures are still quoted. However, receipts are heavier than for some weeks and will undoubtedly bring lower values before the end of the week. Choice to fancy quoted at 47@50c per bu; fair to good, 42@45c.

Beans.—Market holding steady under light offerings. Demand quiet. Choice,

hand-picked pea beans quoted at \$2.05@2.10 per bu; prime, \$1.95@2; red kidneys, \$3.35@3.45.

Hay and Straw.—Hay market easy to 50c lower on some grades. Straw steady. Quotations now are: Choice timothy, \$18@19; No. 1 timothy, \$16.50@17.50; No. 2 do. and No. 1 mixed, \$15@16; No. 3 do. and No. 2 mixed, \$11@14.50; rye straw, \$8@8.50; oat straw, \$7@7.50; wheat straw, \$6@6.50 per ton.

Elgin.

Butter.—Market firm at 26 1/2c per lb., which is a half cent advance over the quotation of last week. Output for the week, 468,300 lbs., as compared with 499,040 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

February 13, 1911.

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

Receipts of stock here today as follows: Cattle, 140 cars; hogs, 18,400; sheep and lambs, 25,000; calves, 1,200.

With 140 cars of cattle on sale here today, and 29,000 reported in Chicago, all grades of cattle sold lower. The butcher grades are selling at about 10c per cwt. lower, and all the cattle weighing 1,200 lbs. and over are selling from 15@20c per cwt. below last week. However, the quality of the weighty cattle was not so good as heavy cattle were last week.

We quote: Best 1,300 to 1,400-lb. steers \$6.40@6.65; good prime 1,200 to 1,300-lb. steers, \$5.75@6.35; best 1,100 to 1,200-lb. shipping steers, \$5.50@6.25; medium butcher steers, 1,000 to 1,100 lbs., \$5.35@5.85; light butcher steers, \$4.65@5.25; best fat cows, \$4.75@5.25; fair to good do., \$3.75@4.35; common to medium do., \$3.50@4; trimmers, \$2.75@3.25; best fat heifers, \$5.50@6; good do., \$5@5.50; fair to good do., \$4.25@4.65; stock heifers, \$3.25@3.50; best feeding steers, dehorned, \$4.75@5; medium to good feeding steers, \$4.40@4.60; stockers, all grades, \$4@4.25; best bulls, \$5@5.50; bologna bulls, \$4.25@4.75; stock bulls, fair to good, \$3.75@4.25; best milkers and springers, \$5@6.50; good to best do., \$4@5; common to good do., \$2.50@3.50.

Late springers hard to sell at any kind of satisfactory prices; in most cases have to be sold by weight.

Hog market opened 25@30c lower than Saturday on the medium and heavy hogs, and fully 50c per cwt. lower on mixed hogs; from 50@70c lower on yorkers, and about 75c lower on pigs; 60,000 hogs reported in Chicago today; heavy receipts here, and weather warm and rainy, made our packers very bearish. Sellers held off until about 10 o'clock before any prices were made, and eventually had to fall in line at the packers' bids. Good many of the mixed and medium hogs went to the packers at \$7.50@7.55. Some extremely heavy hogs sold as low as \$7.30@7.35. About everything on the light order is sold; some heavy hogs going over without any bids.

We quote: Heavy, 7.25@7.50; mixed and medium, \$7.50@7.60; yorkers, \$7.70@7.75; pigs, \$7.90@8; roughs, \$6.50@6.60; stags, \$5.50@5.75.

Lamb market opened active today; most of the choice handy lambs selling at \$6@6.10. Heavy lambs, that is, weighing 100 lbs. and over, selling mostly at \$5.25. Look for steady to strong prices the balance of the week. Sheep market was active today; most of the choice ewes selling at \$4@4.15; wethers, \$4.25@4.50. Look for about steady prices on sheep the balance of the week.

We quote: Best handy lambs, \$6@6.10; heavy lambs, \$5.15@5.25; bucks, \$3@3.25; heavy ewes, \$3.75@4; yearlings, \$4.75@5.25; wethers, \$4.25@4.50; cull sheep, \$2.50@3.50; handy ewes, \$4@4.15; veals, choice to extra, \$10@10.25; fair to good do., \$7.50@9.50; heavy calves, \$5@6.50.

Chicago.

February 13, 1911

Cattle. Hogs. Sheep. Received today 28,000 65,000 20,000 Same day last year.....23,346 37,263 13,894 Received last week.....42,640 159,771 87,314 Same week last year.....59,166 145,781 63,685

This week opens with an enormous hog supply here and liberal receipts east and west. The Chicago "run" is a complete surprise to everybody, although a large supply was expected. Of course, the market is demoralized, with Chicago packers operating cautiously, and prices average fully 25c lower than at the close of last week. Small lots of rough, extremely heavy hogs sell around \$6.50@6.75, while the better class of hogs sell at \$7.15@7.40, pigs going as high as \$7.45@7.50. The top last Saturday was \$7.65 and the top Monday last week was \$7.90. Evidently owners are cutting their hogs loose. Cattle are largely a dime lower today, following last week's advance of 15@40c. Sheep and lambs were fairly active once more, but part of the trading was at a decline of about 10c, following last week's advance of 35@50c. Lambs sold at \$5@6.25, and a single-deck of prime lambs went at \$6.35. Wethers were salable at \$4@4.60 ewes at \$3@4.40, bucks at \$3@3.50, and yearlings at \$4.65@5.75. Breeding ewes were in demand at \$3.75@4.25 and feeding lambs at \$5.50@5.75.

The average weight of hogs received last week was 229 lbs., compared with 231 lbs. a week earlier, 214 lbs. a year ago and 205 lbs. two years ago. Decreasing prices will have a tendency to hurry in hogs of lighter weights, it is generally believed, although some stockmen will wait for a reaction in values before making further shipments to market.

Cattle, as well as hogs and sheep, were marketed less freely than usual last week, the widely extended big snow storm being a serious hindrance, as in a great many cases country shippers were unable to obtain cars from the railroads during the early part of the week. While the general requirements of the trade were not

noticeably larger than usual, the limited supplies resulted in a much better market for sellers, and the sharp decline that took place a week earlier was soon recovered. The demand, as has been the rule for a long time, was mainly for the cheaper and medium-priced cattle, and cows and heifers, as well as bulls, sold relatively better than choice long-fed steers, even canners and cutters selling extremely well. By Thursday demand became slower, and the weakness that took place then was felt much more in heavy beefs than in other kinds. During the week beef steers sold chiefly at \$5.60@6.60, the common light steers going at \$4.90@5.50 and the better class of cattle at \$6.25@6.80. Export steers were salable at \$5.75@6.30, and fat yearlings went at \$6.25@6.80, or as high as heavy steers. Cows and heifers on the butchering order brought \$3.60@6.10, while canners sold at \$2.35@2.95, cutters at \$3@3.50 and bulls at \$3.25@5.50. Calves had a decided boom in prices, going at \$3.75@9.50 per 100 lbs. but milkers and springers were as slow as ever at \$30@60 each, with light receipts and a poor demand. The stocker and feeder trade was checked by the snow storm, but light offerings made a high range of prices, stockers going at \$4@5.50 and feeders at \$5@5.85. Feeding and stock heifers sold at \$3.25@4.65, with a fair demand. Michigan farmers are going more generally into fattening cows and heifers than heretofore, steer feeders being regarded as much too high. Popular taste is for cheap beef, and farmers should remember this and act accordingly.

Hogs showed a firmer undertone last week than has been usual in recent weeks, but the sole cause of this change was the diminished receipts, for the packers were as bearish as ever and just as determined in their efforts to hold down prices. Strength in the market was more due to purchases made by local speculators and buyers from eastern packing points than to any buying by Chicago packing concerns, and the latter usually bought late in the day, purchasing the cheaper offerings mainly. The spread in prices continued extremely wide, with pigs that were not quite heavy enough to be classed with hogs selling highest of all, while rough, heavy hogs sold lowest and were extremely slow to rally in prices at times when others were moving upward. Hogs have been maturing rapidly of late, having been fed a great abundance of corn, and the mild weather has resulted in their doing well. The tendency for stock feeders is to hold their hogs until they are heavier than most buyers want them, and it seems to be better policy to send in swine when they weigh around 225 lbs. than to make them much heavier. In quality the receipts still grade unusually high. Hogs are wanted mainly for the fresh meat trade, which is on a large scale.

Sheep and lambs underwent some sharp advances in prices last week that were highly welcome to sheepmen after the low prices paid in recent weeks in so many instances. The better market was brought about altogether by curtailed supplies, for the general demand was not perceptibly better. The call continued to be for fat light-weights of lambs, yearlings and sheep, as domestic slaughterers did most of the buying, with exporters operating very sparingly and only occasionally. Michigan-fed lambs and Mexican pea-fed lambs from Colorado sold especially well, and there was a demand for feeders and breeders that was difficult to fill, as both were marketed sparingly. The cheapness and great abundance of feed nearly everywhere in the numerous sections where sheep and lamb feeding is carried on extensively tends to encourage holders to put on lots of fat, and they are making many of their holdings too heavy to suit the popular taste. Fat handy-weights bring a large premium. Horses weakened last week under too heavy supplies, the receipts being unusually heavy, and prices, except for strictly prime, were largely \$10@15 per head lower. Small southern chunks had a fair outlet at \$65@125, with inferior old horses going as low as \$40, while farm workers were taken at \$140@175 and a few mares up to \$200. Not many drivers sold higher than \$225, others going at \$175 or better. Few drafters sold above \$225, and a fair grade sold around \$200 or less, with well-matched pairs fetching \$450@475 in some instances.

LIVE STOCK NOTES.

Interest in breeding and raising beef cattle is growing in various farming sections, and this is brought into prominence in recent auction sales of cattle. Farmers are becoming aroused to the fact that there is a rapid decrease in the production of stock cattle on the ranges of the country and that the time is here when farm breeding must begin in earnest if the supply of beef cattle is to be maintained. Stockers and feeders are selling dangerously high, and all that encourages their purchase is the abundance of cheap feed in all parts of the country.

Recent prices for feeder lambs in the Chicago market look attractive to some sheepmen, as they compare them with last fall's figures, \$6.50 per 100 lbs. having been paid for choice feeders at that time. Recently purchases of feeding lambs have been made at \$5.50@5.65, but very few have been offered, as cheap feed has encouraged sheepmen to make their flocks unusually heavy. Michigan fed lambs are being shipped to Chicago all the time, although recently the breaks in prices caused many owners to hold back their flocks for a rally in the market.

The Chicago & Northwestern and other leading railway lines are making a better showing in delivering live stock trains at the Chicago stock yards, having found the heavy sums of money paid out to stock shippers for damages resulting from delays too much of a burden. Shorter trains are made up, and more motive power is supplied. This is good business for the railways and is highly welcome to the live stock trade generally.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 16, 1911.

Cattle.

Receipts, 1,021. Good grades 10@20c lower; bulls and common cow stuff steady at last week's prices.

We quote: Best steers and heifers, \$5.75; steers and heifers, 1,000 to 1,200, \$5.25@5.50; steers and heifers, 800 to 1,000, \$4.75@5.25; steers and heifers that are fat, 500 to 700, \$4.25@4.75; choice fat cows, \$4.50@4.65; good fat cows, \$4@4.25; common cows, \$3.50@3.75; canners, \$2.50@3.25; choice heavy bulls, \$4.75@5; fair to good bolognas, bulls, \$4@4.50; stock bulls, \$3.25@3.50; milkers, large, young, medium age, \$4@60; common milkers, \$25@35.

Roe Com. Co. sold Mich. B. Co. 2 cows av 905 at \$3.50, 2 bulls av 975 at \$4.50; to Newton B. Co. 8 butchers av 805 at \$4.50, 7 do av \$64 at \$4.50, 2 cows av 965 at \$3.50; to Cooke 11 butchers av \$30 at \$5.25, 12 steers av 935 at \$5.60; to Mich. B. Co. 25 do av 996 at \$5.50, 12 do av 988 at \$5.50; to Parker, W. & Co. 1 bull weighing 1,360 at \$4.75, 4 cows av 860 at \$3.50, 1 do weighing 840 at \$4.50.

Bishop, B. & H. sold Gerish 18 steers av 933 at \$5.50; to Kamman, B. Co. 3 cows av 950 at \$4, 4 steers av 942 at \$5.75, 2 do av 790 at \$4.60, 9 do av 911 at \$5.25, 1 cow weighing 820 at \$3.40; to Regan 5 heifers av 530 at \$4.60; to Rattkowsky 2 cows av 995 at \$4.10; to Hammond, S. & Co. 8 cows av 894 at \$3.45; to Parker, W. & Co. 7 butchers av 723 at \$4.85; to Bresnahan 8 do av 741 at \$4.75; to Newton B. Co. 9 do av 870 at \$4.25, 16 steers av 1,190 at \$5.60, 3 do av 916 at \$5.50, 15 do av 853 at \$5.25, 2 cows av 935 at \$4, 1 steer weighing 730 at \$4.75; to Hammond, S. & Co. 1 do weighing 650 at \$4.50, 6 do av 933 at \$5.50, 6 cows av 1,041 at \$4.25, 1 bull weighing 530 at \$4.25, 1 do weighing 1,150 at \$4.50, 5 butchers av 702 at \$5.10; to Parker, W. & Co. 1 bull weighing 1,400 at \$4.75; to Rattkowsky 1 do weighing 1,400 at \$5, 2 cows av 1,090 at \$4.10, 3 do av 960 at \$4.10; to Kull 5 steers av 835 at \$5.45, 1 bull weighing 820 at \$4.50; to Goose 5 cows av 1,026 at \$3.75; to Mich. B. Co. 2 bulls av 1,085 at \$4.75; to Hammond, S. & Co. 1 steer weighing 960 at \$5.40, 3 do av 1,050 at \$4.50; to Bresnahan 2 cows av 925 at \$3.40; to Mich. B. Co. 2 steers av 900 at \$5.25, 6 cows av 1,045 at \$4, 7 cows av 850 at \$4, 8 steers av 812 at \$5, 2 cows av 905 at \$3.50, 2 bulls av 975 at \$4.50, 2 cows av 1,250 at \$4.50, 3 steers av 923 at \$5.25; to Newton B. Co. 5 cows av 1,080 at \$4.50, 5 steers av 964 at \$5.75, 3 do av 923 at \$5, 1 bull weighing 1,140 at \$4; to Parker, W. & Co. 5 cows av 846 at \$3.35, 1 bull weighing 1,190 at \$4.75; to Bresnahan 5 cows av 954 at \$3.25; to Hammond, S. & Co. 5 steers av 962 at \$5.25; to Fromm 5 cows av 1,074 at \$4.25.

Spicer & R. sold Newton B. Co. 27 butchers av 916 at \$5.10; to Mich. B. Co. 29 do av 902 at \$5.10; to Applebaum 4 cows av 1,092 at \$4.50; to Rattkowsky 1 bull weighing 1,250 at \$4.75, 1 do weighing 1,320 at \$4.90; to Hammond, S. & Co. 5 cows av 948 at \$3.50, 6 steers av 1,046 at \$5.50; to Mich. B. Co. 2 bulls av 960 at \$4.75; to Sullivan P. Co. 1 do weighing 1,450 at \$4.75; to Thompson Bros. 1 do weighing 1,320 at \$4.75.

Haley & M. sold Newton B. Co. 1 bull weighing 1,500 at \$5, 3 cows av 918 at \$4.50, 1 do weighing 840 at \$3.50; to Hammond, S. & Co. 8 butchers av 615 at \$4.60; to Kolkowsky 2 cow and bull av 835 at \$4.35, 1 cow weighing 1,380 at \$5.25; to Lachiat 4 do av 1,042 at \$4.45, 3 steers av 687 at \$5, 6 do av 783 at \$5; to Mich. B. Co. 2 bulls av 965 at \$4.60, 27 steers av 983 at \$5.50.

Allington sold Bresnahan 1 steer weighing 950 at \$5, 4 heifers av 562 at \$4.35.

Hely sold Breitenbeck 5 cows av 916 at \$3.75.

Allington sold Goose 2 cows av 945 at \$3.25, 2 do av 1,990 at \$3.50, 1 do weighing 1,380 at \$4.50.

Adams sold Kamman B. Co. 2 cows av 985 at \$4, 6 steers av 833 at \$5.25.

Bergin & W. sold Sullivan P. Co. 12 steers av 1,100 at \$5.50, 10 do av 847 at \$5.30, 5 cows av 1,044 at \$4.15, 1 bull weighing 1,220 at \$4.50, 1 do weighing 1,170 at \$5.

Veal Calves.

Receipts, 344. Market steady at last week's prices. Best, \$9@9.60; others, \$4@8.50; milch cows and springers steady.

Bishop, B. & H. sold Hammond, S. & Co. 2 av 135 at \$7.50, 8 av 140 at \$9.50, 3 av 150 at \$9.25; to Mich. B. Co. 5 av 110 at \$8.60; to Hammond, S. & Co. 1 weighing 150 at \$9.50; to Parker, W. & Co. 9 av 115 at \$9.25, 1 weighing 130 at \$9.50, 3 av 115 at \$8.75, 9 av 145 at \$9.25, 16 av 135 at \$9.50, 11 av 140 at \$9.50; to Nagle P. Co. 10 av 138 at \$9.50, 1 weighing 170 at \$9.50, 2 av 140 at \$9, 1 weighing 110 at \$8.

Spicer & R. sold Sullivan P. Co. 4 av 130 at \$8.50; to Mich. B. Co. 1 weighing 140 at \$9; to Goose 7 av 140 at \$9.10; to Burnstine 1 weighing 90 at \$9, 1 weighing 150 at \$9.50, 8 av 150 at \$9.25.

Haley & M. sold Sullivan P. Co. 17 av 140 at \$8; to Mich. B. Co. 7 av 135 at \$9; to Parker, W. & Co. 2 av 110 at \$6.50; to Sullivan P. Co. 6 av 145 at \$9.50, 1 weighing 90 at \$6, 2 av 135 at \$9; to Newton B. Co. 7 av 145 at \$9.

Sharp sold Parker, W. & Co. 16 av 140 at \$9.60.

Bergin & W. sold Sullivan P. Co. 5 av 140 at \$9.25.

Haddick & C. sold Newton B. Co. 2 av 135 at \$6, 7 av 140 at \$9.

Belheimer sold same 5 av 125 at \$8.75.

Stephens sold Burnstine 1 weighing 180 at \$6, 10 av 121 at \$9.

Sheep and Lambs.

Receipts, 4,730. Market steady at last Thursday's prices. Best lambs, \$5.65@5.75; fair to good lambs, \$5.25@5.50; light to common lambs, \$4.50@5.25; fair to good sheep, \$3.75@4.10; culls and common \$3@3.50; heavy lambs, 90 lbs. up, \$4.75@5.

Bishop, B. & H. sold Hammond, S. & Co. 15 sheep av 115 at \$3.60, 33 lambs av 60 at \$5.35; to Nagle P. Co. 221 do av 80 at \$5.65, 178 do av 80 at \$5.75; to Sullivan P. Co. 70 do av 67 at \$5.35, 14 sheep av 100 at \$3, 16 lambs av 55 at \$5; to Mich. B. Co. 62 do av 75 at \$5.65, 26 sheep av 90 at \$3.75, 10 do av 95 at \$3.50; to Chase 59 lambs av 88 at \$5.60, 75 do av 80 at \$5.75, 50 do av 83 at \$5.30; to Swift & Co. 76 do av 82 at \$5.65, 116 do av 85 at \$5.60, 59 do av 75 at \$5.75, 154 do av 80 at \$5.65; to Hammond, S. & Co. 55 do av 110 at \$5, 71 do av 78 at \$5.50, 19 do av 115 at \$5, 11 sheep av 110 at \$3.60; to Fitzpatrick Bros. 12 do av 120 at \$3.75, 36 lambs av 90 at \$5.40.

Haley & M. sold Nagle P. Co. 33 lambs av 85 at \$5.60, 3 sheep av 112 at \$4, 5 lambs av 90 at \$5.50; to Gordon 13 sheep av 100 at \$3.75, 11 do av 88 at \$4.50.

Allington sold Hammond, S. & Co. 5 sheep av 118 at \$3.25, 19 lambs av 70 at \$5.35.

Sharp sold Sullivan P. Co. 30 lambs av 70 at \$5.25.

Spicer & R. sold Sullivan P. Co. 6 sheep av 110 at \$3.25, 41 lambs av 80 at \$5.40; to Bresnahan 188 sheep av 130 at \$4.20.

Logman sold Parker, W. & Co. 100 lambs av 75 at \$5.75.

Hogs.

Receipts, 1,769. Market 15@20c lower than last Thursday.

Range of prices: Light to good butchers, \$7.50; pigs, \$7.70@7.75; light yorkers, \$7.40@7.50.

Bishop, B. & H. sold Hammond, S. & Co. 715 av 150 at \$7.60, 850 av 200 at \$7.50.

Sundry shippers sold same 310 av 200 at \$7.50.

Spicer & R. sold Parker, W. & Co. 115 av 220 at \$7.55, 325 av 180 at \$7.60, 150 av 150 at \$7.65.

Bishop, B. & H. sold same 59 pigs av 125 at \$7.80, 78 do av 125 at \$7.80.

Haley & M. sold Sullivan P. Co. 330 av 180 at \$7.60.

Roe Com. Co. sold same 325 av 180 at \$7.60, 120 av 200 at \$7.50.

A prominent Chicago live stock commission firm is advising Michigan farmers to buy cows for feeding rather than steers, as their cost is much less, while a good many calves can be raised. Calves are always salable and will more than pay half the cost of the cows. In the fall, when the cows are fat, they should bring a fair price in any market. Cows are preferred to light heifers, as the heifers lack the age and do not grow enough to make a good gain during the summer months. A Michigan farmer bought 89 cows at Chicago last spring and sold them in August with their calves, and they gained \$1.150 above first cost.

The first of March is farm renting time generally, and renters who intend to move are selling their hogs this month. This tends to increase supplies in middle western and far western markets.

HAY If you have car lots for sale it will pay you to write The E. L. RICHMOND COMPANY, Detroit, Michigan.

Wanted—Good farm from owner only. Want possession now or next spring. State particulars. FRETAG, Box 754, Chicago, Ill.

Farms Wanted—Don't pay commissions. We describe property, naming lowest price. We help buyers locate desirable properties FREE. American Investment Association, 3 Palace, Minneapolis, Minn.

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MICHIGAN FARMS in Grand & Rough River valleys at \$25 to \$50 per acre. Good for fruit and all kinds of grain and vegetable. C. R. DOKERAY, Rockford, Michigan.

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Washington Fruit & Wheat Farm—100 acres, improv. 320 acres, all in cultivation, good improvements, 2 miles to town, \$80. J. C. Ruth, Pullman, Washington.

FOR SALE—66 acres, new 7-room house, 2 to street car line, 8 miles to Youngstown. \$5,700. D. R. REES, 724 Dollar Bank Bldg., Youngstown, O.

Farm For Sale—120 acres, 1½ miles from graded school dis., good 8-room house, Michigan 36x56, with L 22x36, gravelly soil. Well at door. Cheapest farm in Michigan for \$32, per acre. JAMES BRAND, 600 North Cherry St., Canton, O.

FARMS FOR SALE In Eaton, Calhoun, and Barry Cos. A bargain. 120 acres at \$55 per acre. Fine buildings, best of soil, 3½ miles from Bellevue. Also 40, 60 and 80-acre farms for sale. Please write for list. C. H. LEGGIE, Bellevue, Mich.

FOR SALE—100 acres, dark sand and clay, level, 100 acres in cultivation and free from stumps, balance in pasture. Large 11-room house, basement barn 40x80. 1½ miles to market on main line of R. R. A big bargain. Price \$40.00 per acre. Full information on request. Jno. C. Jenkins, Big Rapids, Mich.

FOR SALE CHEAP, on account illness requiring dairy farm, one-half mile from creamery in Wayne Co., Mich. With or without herd, 40 registered Holsteins. Illustrated booklet mailed to intending farm purchasers. William B. Hatch, Seabreeze, Florida.

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Farms for Sale—Improved farms 40 to 240 acres, \$35 per acre up to \$70. Good soil, excellent roads, rural mail delivery, best of schools, good market, telephones. Soil especially adapted to fruit, potatoes and dairying. FRY & MANNING, Brighton, Mich.

Farm For Sale—156 ACRES Bennington Station and six miles south east of Owosso, Shiawassee Co., Michigan. Good soil, good buildings, windmill, 3 wells, living stream of water, five-acre orchard, 80 rods to church, postoffice, stores, creamery and R. R. depot, grain elevator, stock yards, blacksmith shop, etc. An ideal stock and grain farm, in a good state of fertility and fine location. Price \$70 per acre. B. H. TAYLOR, Bennington, Mich.

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HORTICULTURE

GRAPE GROWING IN WESTERN NEW YORK.

ONE of the most successful examples of intensive agricultural methods on the American continent, rivaling and exceeding in profit the hop fields of Central New York, rivaling the celery farms of Michigan, and even exceeding many of the most famous vineyard and orchard sections of more noted regions of the Pacific coast is found in the grape belt of Western New York. It has especial interest to Michigan because of the many points of similarity between the Michigan and the New York grape belts, the intense rivalry between the two and their close competition as price factors in the annual "rape deal."

There is a section of Western New York, although but an infinitesimal one as compared with the total area of that state or of Michigan, where absolutely nothing is grown but grapes. The grape growers, some of them, do not even keep a cow to supply their own table. This is an actual fact.

The grape belt, so-called, is the strip of land hugging the south shore of Lake Erie, west of Buffalo, stretching like a narrow ribbon of green along that shore well toward Erie, Pa. The belt is widest to the east, where, 25 miles out of Buffalo it spreads out fan-like to a width of ten miles. Further west, at Fredonia, the belt is but five miles wide, while at Ripley it is hardly three. At North East, Pa., and nearly to Erie, Pa., it again widens to five miles in width, and some of the finest vineyards of the section are found here in charge of the prudent, careful, and prosperous Pennsylvania grape men.

The belt is nearly fifty miles long, and hardly averages five miles wide. Now, after a half century of grape growing most of the best locations are solidly set out to grapes, while, as time is now telling, hundreds of acres which should never have been used for vineyard purposes, are also struggling to support grape vines.

Climatic Influences.

From a climatic viewpoint the grape belt is ideally located. The hills are close to the lake, and defines the south edge of the belt. They shut in the water's influence prolonging the warmer temperature until almost the last of October. The same combination of being near a body of water, and shut in by hills prolongs the cold of the spring, retards vegetation, and holds back the fruit buds until after the time of killing frosts.

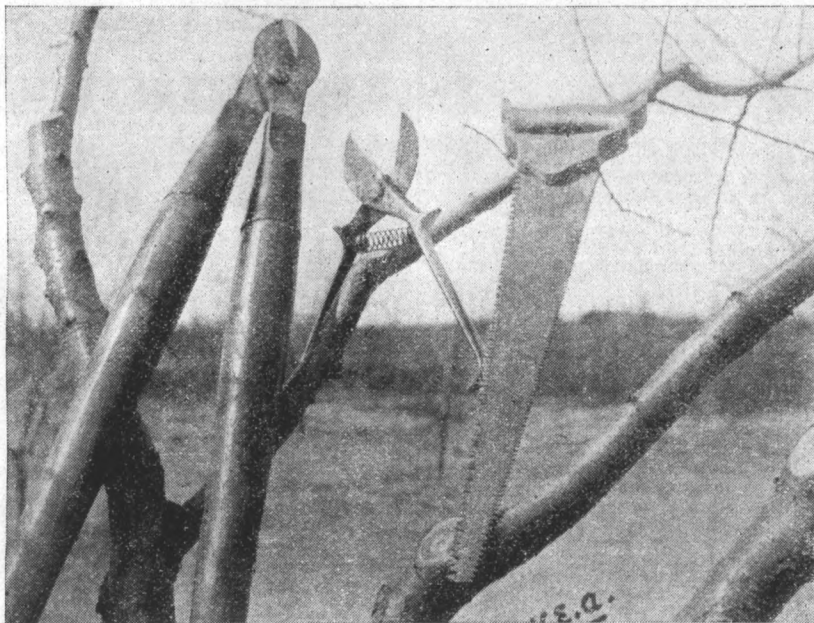
This range of hills at the south edge of the belt rises to a height of several hundred feet, and can be plainly seen from the regular steamers plying the waters of Lake Erie, as the boat nears, or emerges from Buffalo harbor. These hills also produce another climatic effect, taken in conjunction with the lake, and that is constant winds and breezes. There is a day wind from the lake, and a night breeze toward the lake throughout the summer and fall. To those not acquainted with the grape and its tender points, the value of this may not be apparent, but when two facts—first, that the spores causing grape rot, the most dangerous disease of the grape, can not thrive except when it is damp and warm, and second—that when a breeze is blowing all dampness on the grape vines, leaves, or fruit, is evaporated, are put together, it will be seen that the breeze is a constant and sure antidote for the rot. The facts are that while Central New York is ravaged by the black rot, while Ohio vineyards have gone to ruin, and while Michigan vineyards require constant effort with the spray pump and the Bordeaux, up to this time the Chautauque grape growers have never known serious damage from black rot.

The Soil and the Crop.

The soil is a combination of glacial ancient lake beaches and lake bottom origin. Geological configurations show that once the whole belt was under water, presumably of some lake much larger than the present Lake Erie. At least two distinct ancient shore lines and beaches, with distinct gravel ridges, and underlying sand bars can be followed for miles. And then there are glacial traces, terminal and lateral moraines, and also great stretches of clay, both from the bed of some former lake, and from the disintegrating underlying shale rock, which at places outcrops, and under many hundreds of acres lies within a few inches of the surface. It is on the gravel that the best, strong-

est and most productive vineyards are found. On the heavy clays, when thorough cultivation and fertilization is done, with underdraining, etc., there are many acres of profitable vineyards; while on the shallow shale soils are vineyards of surprising productivity, producing the earliest and the sweetest grapes. Even poor soils here seem to be able, under the favorable climatic conditions before mentioned, to become fruitful and profitable. The only unproductive vineyards are those which are too wet, and those whose owners neglect the simplest care. This statement is literally true, but of course here, as in other intensive farming, those vineyards best cared for are most productive, and of the last half dozen years, since a general deterioration has become apparent, the vineyards handicapped by poor soils, or by poor methods have barely paid small profits, while those on the strong soils, and those well fertilized, cover cropped, and cared for have continued to yield the same big margins as attracted the whole countryside into vineyard culture a quarter of a century ago.

There are over thirty-five thousand acres of grape vines in the belt, yielding annually from 90,000 to 95,000 tons of grapes; also from 1,500,000 to 2,000,000 gallons of wine and grape juice, most of the cream of tartar of the east, and grape roots and cuttings for the whole of the United States east of the Rocky mountains. Last year grapes averaged \$40 a ton. The crop was small, probably 3,500



Some of the Tools Needed to Get the Fruit Trees Ready for Business.

cars, that is, 42,000 tons. Figure it out for yourself. A good vineyard will yield, normal seasons, four tons of grapes per acre. They sell in bulk at \$30 a ton. One man can care for a fifteen-acre vineyard until picking time, and then girls and boys, with little supervision, can do the picking and packing. Is it any wonder, under these conditions that the banks of the grape belt are full of money, the vineyardists own automobiles and town houses.

System in Growing.

In handling grapes in fifteen or fifty-acre blocks it is apparent that system must be used. Rows are often trellised the entire width of the farm. Chestnut or locust posts are used if they can be procured. The post question is a serious one. A two or three-wire trellis is used. All this year's growth of wood and that left from last year which produced this year's crop, will be cut off this winter, except three to six canes to each vine, which will be left to "tie up" for next year's crop. The healthiest canes will be left, preferably short jointed ones, with about six to nine buds to the cane. Forty-five buds is considered about right for a normal vine in a normal vineyard. These canes are tied up before the buds swell in the early spring. The vineyard should have been sown to cover crop last August, preferably crimson clover, vetches, turnip, or some similar crop, or combination of crops, but even to oats, or rye is better than nothing. Practice and experiment has shown conclusively that the humus has been burned out of the soils by too intensive clean cultivation, and either cover crops, or expensive stable manuring, the material bought probably from Chicago, is demanded. This fertilizer is used it is home-mixed in most part, potash and acid phosphate in nearly

equal quantities being used. Some run-down vineyards demand heroic treatment, and then nitrate of soda is used, and not spared where needed for although it is expensive, so is the vineyard if it is lost. Commercial fertilizer is sown broadcast and worked under about four inches deep.

From spring to mid-summer the vineyard must be worked constantly to give best results, but the cultivation must be shallow, for the grape rootlets love the heat of the sun and the light, and seek the surface. In former days many vineyards have been ruined by setting the vineyard plow a few inches too deep.

Vineyard Pests.

Thus far the grape has been attacked vigorously by but four or five pests to do severe damage. First, and most dreaded, is the Fidia Viticidia, or grape root worm; then comes the so-called "leaf hopper;" then the grape berry moth, the steely beetle, and the grape blossom midge. The attacks of the last three seem to be localized, and not of great danger, the blossom midge, in particular, attacking only the early varieties as yet. The root worm has been the most dreaded pest of the industry, being to the grape what the potato beetle was to potato growers, until Paris green became known and used as an antidote. The grape beetle, however, is a small eater, and so has not succumbed readily to any poison sprays; and until last year little progress had been made in the fight. Last year, however, the use of molasses in the poison spray

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FARMERS HOME CANNING.—No. 3.

Method of Procedure.

Ask the average farmer how the fruits and vegetables for his home are canned and he will look at you with amazement, for this part of farm industry has never come under his direct care and observation, and for this reason he is not versed in the art of canning. But he may become proficient in this very work if he will follow carefully this farmers home canning series.

A very common mistake made by the average person in entering this new industry, is in purchasing a small canning outfit, which means a slow output now and an equipment inadequate for succeeding years. You should make an estimate of the maximum yield of the products you will have to can and purchase an outfit rated to can one-quarter more than this yield, for once you begin canning you will find that the demand for your farm canned articles will be greater than your ability to supply.

A farmers' canning outfit with a capacity of 1,500 cans of tomatoes or 2,000 cans of apples per day should consist of one canning machine, which will hold about two barrels of water, having two apartments, one for boiling or processing and one for scalding, (under these should be a good firebox with grates for burning wood or coal), one dozen peeling knives, one dozen wooden can trays, (to hold 12 N. 3 cans), two wire scalding baskets, eight or ten wire process crates, two dozen fiber or enamel pails, (never use tin or galvanized wire), two capping steels (for soldering tops of cans), one gasoline fire pot, (for heating the capping steels), one tipping copper, three can tongs, apple slicers, fruit parer, and cherry stoner.

Beginners in canning seem to get the idea that any building will do for canning because it is used for only a portion of the year; but this is a mistake, for it is impossible to keep any but a cement floor clean and sweet, so if one has a building which could be used for canning, put down a good smooth floor and every night flood it with boiling water from the machine and in the morning you have a nice dry place to work again. The man who will not give the time to keep a canning place and utensils scalded and clean, better not enter the industry for he will fail, because, where crevices in the floor of the building and corners in the utensils are allowed to be filled with fermented fruits and vegetables, bacteria and other germs would be reproducing by the million every hour.

The securing of tin cans is not as difficult as most beginners think. Nearly every large city has one or two can manufacturing factories and the No. 3 tin packers cans may be bought from them in any quantity from 100 up and the price ranges from \$17 to \$20 per thousand cans. The No. 3 packers' cans are the size used for canning tomatoes and pumpkin. They have a two and one-sixteenth inch opening and a cover or cap is furnished with sufficient solder on to seal to the can opening. For hand work they are preferable. No. 2 packers' cans are one size smaller than the No. 3 and can be bought at \$12 to \$14 per thousand cans. This size is used for canning berries, beans and peas. Both No. 2 and No. 3 packer cans are shipped in wooden crates holding 150 to 500 per crate. As a rule, the company furnishing the cans make a charge for the crates but make a refund upon return of crates.

Labels are a small item financially in the canning business; yet, there is no part of the industry requiring more thought and good judgment than this. It is the label that introduces the canned article to the customer. If the label is neat and bright, the grocer will give it a prominent place on his shelf where it will attract the attention of customers and when a customer finds that the contents of the parcel is as good or better than suggested by the label, you have gained a permanent patron and an advertiser. So, too much stress cannot be laid on the selection of a label. The better way is to use what is known as stock labels for the first year or two. These can be purchased at \$1.50 to \$3.00 per thousand from any lithographer making can labels a specialty. By doing this you will have time winter evenings while sitting at your fireside to draw upon your imagination and mentally formulate an artistic design for your trade mark.

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When trees are of poor varieties, or if it is not deemed worth while to spray them, they should be destroyed at once as they will never give fruit of any value and will serve to spread the scale to neighboring trees.

Pruning Before Spraying.

In order to do the best work, the trees should be pruned, removing all the dead branches and cutting back others that have been seriously injured, or that are very high. All surplus shoots and branches that can be spared from the trees should be cut away, thus both reducing the surface to be sprayed and making it possible to do a better job when spraying for the scale.

Time and Method of Spraying.

The best results are secured when the spraying is done during the latter part of March, or before growth has started, although if the trees are badly infested they should be sprayed in the fall and again in the spring. The most effectual remedy is lime-sulphur solution, using the commercial mixtures at the rate of one part to ten parts of water; or, one to eight if the trees are badly encrusted. Be sure to spray the trees from all sides and cover every portion from the ground to the ends of the branches.

If the spring spraying has been omitted, it will lessen the injury to the trees if they are sprayed about the first of July and again the first of September when the young scales are upon the trees, using one part to 30 parts of water for apple and pear trees; one to 60 for plums and cherry and one to 100 upon peach and Japanese plums.

Agril. College.

L. R. TAFT.

CANCER IN PLANTS.

The department of agriculture has in press a bulletin entitled "Grown Gall: Its Cause and Remedy," which promises not only to revolutionize present views respecting the nature of various overgrowths in plants, but also to throw light on the cancer problem in men and animals. This bulletin deals with a widely distributed and harmful disease of orchard trees and other plants, commonly known in the United States as crown gall, but it may occur not only on the crown of plants, but on roots and shoots.

The disease has been known for a long time, and under the supposition that it was infectious and injurious various states have made quarantine laws against it. The disease has been ascribed to various causes, without satisfactory proof, and many persons have been led to believe that it was not due to any organism. The experiments detailed show clearly that the gall is due to bacteria and is infectious, being readily transmitted, not only from plant to plant of the same kind, but also to many plants of widely different families. The growth is not only of itself injurious to the plant, but also may form an open wound through which other parasites are likely to enter, such as the fungus of root rot, and the bacteria which cause blight of apples and pears.

It is recommended that the inspection laws now in force in the various states be continued and enforced. It shows what plants it is not advisable to use as a crop following a galled one. It describes the life history and cultural characters of the organism involved, points out the difficulties through which it was isolated and identified, gives numerous illustrations showing the nature of the tumors produced and the time involved in their production when pure cultures of the organisms were used, shows that the organism has a wide range of host plants and that the overgrowths produced are in many ways anatomically and otherwise strikingly like those found in certain malignant animal tumors.

The cause of cancer is unknown and a majority of animal pathologists at the present time are inclined to regard it as non-parasitic chiefly, however, because no parasite has been found. The bulletin shows that a similar argument might have been advanced with equal force some years ago against the parasitic nature of crown gall. No good reason can be adduced why cancers should not occur in plants as well as in animals, and if these plant growths are truly cancers then it is extremely probable that micro-organisms of some sort are also the inciting cause in sarcoma and carcinoma. Tubercle diseases occur in plants as well as in animals and superficially they resemble these growths, but not structurally nor in the groupings of the parasite.

The bacteria causing these plant tumors are not abundant in the tissues,

sometimes very rare; are hard to see and difficult to stain; they perish readily, both in the tumor and in culture-media; are difficult to cultivate from the tissues unless one knows the technique; do not form abscess cavities after the manner of the tubercle diseases, but multiply in limited number within the tissues and apparently only inside the cells which their presence stimulates into rapid division. The disease metastasizes readily, and on this account is cut out with difficulty. The organism loses virulence easily, both inside the tumors and in culture media, and finally if the plants are not destroyed by it they seem to acquire a partial or complete immunity.

The bulletin should not only be of very great importance to the orchardist and grower of hothouse plants, but also to all specialists who are interested in the cancer problem, inasmuch as in the present uncertain state of research on that disease any clue whatsoever becomes of importance. It is not claimed that the organism here described is itself the cause of malignant tumors, but only that in many respects the growths produced by it are suggestive of malignant animal tumors, and that probably some similar parasite lies at the bottom of the malignant phenomena of such growths. The bulletin involves teamwork done by four people in the department of agriculture, covering a period of six years and the total number of experiments involved amounts to thousands.

COMMERCIAL LIME-SULPHUR SPRAYS.

The value of any lime-sulphur spray mixture is in proportion to the per cent of sulphur contained in solution, and a law passed by the last legislature requires the manufacturers of lime-sulphur solutions, as well as makers of all other insecticides and fungicides, to submit a guaranteed statement of the analysis of their brands.

State Inspector L. R. Taft announces that the brands now on sale in Michigan have a good margin of sulphur in solution above the guarantee, and indicate that the manufacturers are putting out a good article and are endeavoring to comply with the requirements of the state insecticide law.

Some authorities advise against the use of a solution which contains less than 24 per cent of sulphur in solution, but the writer would not discriminate against them, except to value them in proportion to their guaranteed analysis, and considering that a brand containing 24 per cent of sulphur is worth one-third more than a brand which contains only 18 per cent, making a barrel of the former worth \$10 as compared with \$7.50 for the latter.

One should not be deceived by what purports to be the guarantee on the label, as if a label reads, "Sulphur—18 to 27 per cent," the amount guaranteed is only 18 per cent, and the use of the two percentages indicates that the manufacturer is either trying to deceive the public or that he does not have sufficient confidence in his method of manufacture to guarantee a definite percentage.

Some of the local dealers in lime-sulphur are charging from ten to 12 per barrel, but in sections not too far remote from a factory and having fair railroad facilities it should not cost more than \$9 to \$9.50 per barrel.

If one does not object to the bother of making it at home the cost would not be more than \$4 per barrel, including labor, fuel and materials, but it is important that the lime used should not contain more than five per cent of magnesia, while most of the lime on the market has 15 per cent and some as much as 40 per cent. This is objectionable as it wastes the sulphur, and besides unless one can be sure of the quality of the lime the product will not be uniform. For these reasons most growers will find it more satisfactory in the end to purchase some of the commercial brands.

CATALOGUE NOTICES.

Isbell's Seed Annual for 1911, sent on request by S. M. Isbell & Co., of Jackson, Mich., is a profusely illustrated book of 104 pages, descriptive of this firm's line of farm, garden and flower seeds. The company's new home is also shown on the inside cover page.

Harris' Seeds for 1911 is the title of a new 72-page catalog describing and illustrating the Harris line of farm, garden and flower seeds and accessories. The motto on the cover of this catalog is "From the Grower to the Sower."

Darling & Behan, Petoskey, Mich., are sending out their 1911 catalogue of northern grown seeds. This is a 72-page catalogue fully describing and illustrating their full line of farm, garden and flower seeds.

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Deming Spray Pumps

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We have proved that the "Moreton" potato will positively yield 50 bushels more per acre than other varieties, with exactly the same care. It is handsome, smooth, round and white. Vigorous grower; late or main crop. We offer **20 Other Splendid Varieties—5,000 Bushels of Seed This Year**

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Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

Associational Motto.—

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

Associational Sentiment.—

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

THE SHARE OF THE FARMER'S WIFE.

Paper read before the State Association of Farmers' Clubs by Mrs. Alfred Allen, of the Ingham County Farmers' Club.

When I read my subject, "The Share of the Farmer's Wife," I thought, her share of what? And I asked a member of the committee how I should treat the subject, he said, treat it any way you wish. He said, "we did not know what you wanted to write upon so we gave you this subject to fill in," and sometimes I think that's what a wife's share is—to just fill in, and perhaps that is what my paper will do, fill in.

In the discussion part of my paper I wish to speak of the wife's share as to the home-making, the wife's share as to work and the wife's share as to money—the three principal things that we must share in and contribute to if we have any home at all.

Larwaine says that there is a woman at the beginning of all great things and I count the share of the wife in the making of a home an important share. While mothers do not form the whole of a family executive, they must by order of things take a greater share in the making of a home and the training of the children. Every man believes he chose his wife as she did her wedding gown, for qualities that would wear well, so he is willing to have such a one help make his home and help train his children.

Then the home-making (not just house-keeping), is certainly the share of the wife. Of what does a home consist? Of a beautiful house? All modern improvements? Expensive carpets? By no means. There may be a small house, rag carpets on the floor and only a few pictures on the wall but if the mother in that home imparts to this humble abode an atmosphere of home, it is home indeed.

Bishop Vincent says: "Religion is an atmosphere." Can one grasp and analyze atmosphere? It is the intangible something that makes a home home. Helen Hunt Jackson has given among her writings a picture of a home as it ought to be. At any rate people, old and young, like to visit such a home and in days past we have thought, as we have been in homes like that, "Some time we will have such a home." Each of us has pleasant memories of coming in out of the frosty air, hungry and tired after perhaps a walk or hard work, and hearing the snapping of the fire and the singing of the kettle, and with the smell of browning potatoes and warm apple sauce and a smiling, though perhaps tired mother, we have realized what home was. Ah! that was home, sweet home.

If we are not among the number of born home-makers, since it is our share, let us study to make our homes real homes in a broad sense. Have a pleasant fire, a wide lounge with plenty of pillows of the washable sort, not too nice to lounge upon, some easy chairs, and some pictures, if possible, of real art, perhaps painted by a daughter, or at least, pictures with good morals to them. Plenty of good wholesome reading, magazines and books, and music if possible. And the dear children, let us make a home for them. Let the boys and girls have their playthings, dolls, books, fishing tackle, and jack knives. They must have them, the same as the mother must have her utensils for baking and cooking. In later years they will not remember the bits of dust about, but they will remember the cross words and angry frowns of

mother. We are influenced by the homes we enter and we bring the memory of each into our own. So let the influence of our homes go out to the betterment of others as the spirit of others have come into ours.

Now as to the work; the woman's share of the work. Some one has said all a woman has to do in this world is contained within the duties of a daughter, a sister and a mother. I have always contended that if a woman did all that needed to be done in the house it was her share, unless perhaps, the care of the chickens and flower garden. I believe woman's cause is man's and that many times the man can help the woman in the performance of her duties and the woman the man.

There is much said these days of women studying agriculture. In fact, I have read of some very successful women farmers. You have noticed from time to time, running through the Michigan Farmer, articles headed, "Country Women as Money Earners." Instances of one woman successful in bee culture, another in extensive poultry raising, which is a fine thing in case she be a well woman and small family, but for the most part a woman living on a farm, rearing her children and doing her own work, even though she has a few social engagements, is already a busy woman and adding more would mean overwork, (that dreaded thing that we see so much of among our farm women). Of course, one could hire some of her work done and then do the work desired outside, which would be no advantage unless she needed the outdoor work for health's sake, or to do away with the monotony of housework. I think the farmer's wife and daughters ought to understand some of the practical things of agriculture. Perhaps the daughter could make use of one of the agricultural courses for girls on the farm if the mother could not.

We ought to lighten the work of the farm inside as well as out, let the women have a fireless cooker, a food chopper, a gasoline iron and the numberless other things that are labor savers. Perhaps some of you read the speech that Theodore Roosevelt made to a Grange gathering this summer. He said, "It is a matter of highest obligation for us to see that the work of woman is performed under conditions which make for her welfare and happiness and for the welfare and happiness of the children she brings into the world."

Now, what share of the money is the wife's? This is a step on dangerous ground, for that problem is a problem still. Giving a woman money when she asks for it is neither just, reasonable or businesslike. Perhaps that seems as though it ought to satisfy her if she gets it by asking, but it does not. It makes her feel so dependent. One man said the other day that he gave his wife the proceeds from butter and eggs. With the present prices that might mean quite a little but, of course, that would depend upon the amount of butter and eggs she had to sell.

Shall the wife have an allowance? If so, she should know what the income of the husband is, in order to know what share she is getting and in order that she may not be either scrimping or spending more than was her share. Then her allowance would depend upon the family income and the bills she had to pay with it.

Or again, should the husband and wife have one pocketbook? A friend of mine (a wife), said, "That's the way we do, have one pocketbook, but he carries the pocketbook." If the woman is "sole partner and sole part," as Milton says, she should know what is in, and be at liberty to go to, the pocketbook as often as the other partner. One should be fair with a partner in business with him.

If women are so successful as financiers they ought to be capable of using or spending their share, (shall I say one half), whatever it may be, or at least to help plan how it shall be used.

Would it not be wise to have all of the money go into one pocketbook and every time John gets a labor-saver for the farm let Mary get one for the house? Let each share in the enjoyments and pleasures and when they sell something from the farm or have a little good luck, as we say, let each enjoy the benefits thereof, perhaps in a trip or a holiday, or in paying a debt they owe. But whatever we do, let each, husband and wife, strive to keep up the right spirit, in the home, the spirit of unselfishness and each will be doing his or her share.

GRANGE

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

THE FEBRUARY PROGRAMS.

Suggestions for Second Meeting

Opening song.
Reading, "The Worth of a Boy."
Review of a late number of my favorite paper or magazine, briefly reported by a man and woman.
Music, by Grange orchestra.
Home Nursing, I—Hints on care of the sick—in charge of Woman's Work Committee.
Music.
Distinguished guests—some illustrious Americans.
Song.

POWER OF PROMPTNESS.

"Why preach better business when you don't practice it?" was the querulous comment of a man who was being urged to join the Grange. "You never begin on time, you never close on time—I can't stand such methods." And, instead of lending a hand at bettering conditions, this modern Jeremiah refused to sign an application blank.

After all, one can't blame him overmuch. As is commonly true when sharp, off-hand criticism is made, there may be reasonable excuses for delay in opening many a Grange meeting, but more often the delay is avoidable. There ought to be a steady, persistent effort to overcome any tendency to delay, first, time of opening; second, time of calling for the lecture hour; and, third, time of closing in every Grange. This is business and business methods should prevail. A master is the business head. It may require considerable sacrifice on his part to forego the pleasure of visiting and the temptation to indulge in the general jollity belonging to the real Grange; but, while the master should be what is called "a good mixer," he should not dilly-dally in his sociability. No long stories, no quiet visits, no animated discussions, however alluring or even profitable in themselves, should he indulge in if the time to call the Grange to order is at hand. Neither should he take time for these until every detail for the meeting, possible to arrange in advance, has been attended to.

Pomona masters occasionally allow the entire morning to slip away without calling to order, simply because the number present is small, or one or another officer has not arrived. There are always plans that need to be made, business to be transacted and a sense of the dignity and importance of a county organization to be maintained. In the subordinate Grange want of promptness is scarcely less serious in its results. Members arrange their schedule of work at home so as to give certain hours to the Grange. Having done this, it is a sort of theft on the part of officers in charge if members do not get that for which they planned and at the time it is due.

True, many masters are diffident, especially when new in the office, or dread to interrupt a good social time, or feel that they may seem to be too officious; but, as with any difficult task that must be done, the more promptly it is accomplished the better he will feel for having done his duty. The Grange blessed with such a master will respond accordingly. Its general tone will improve. Its exercises will take on fresh interest because members will come to them before they are tired. The social life of such a Grange will have a vivacity and snap wholly wanting in a lagged out audience. The outside influence of such a Grange will take a perceptible brace at once.

"If I could get all the officers in my territory just to call to order on time, it would begin the revolution of Grange sentiment and efficiency," said a deputy recently. And so it would. An officer may lack marked brilliancy of intellect; he may be unblest by either grace of action or glibness of tongue; he may be awkward and gawky and dress like a backwoodsman—all these and yet, being prompt, he will achieve wonders!

JENNIE BUELL.

WHAT THE GRANGE IS DOING FOR MENOMINEE COUNTY.

Menominee county is being recognized more and more as an agricultural county. True it is that saw-mills still dot it here and there, furnishing a valuable asset to the farmer, who can get his timber manufactured into lumber for building pur-

poses. The farmer is each day recognizing more and more the value of intensive farming and in bringing him to that realization there is no stronger force than the Grange. This county has 13 subordinate Granges, with a total membership of 1,000, this number including the second largest Grange in the upper peninsula—Stephenson, with 275 members. It also has a Pomona of 160 members which is thoroughly active.

Through its influence, at the last Menominee county fair there was a Grange day, with a Grange speaker, a competitive booth exhibit by subordinate Granges, and other prizes for the members. The booths were educational and instructive, the speaker aroused the enthusiasm of the Patrons, and a new spirit seemed born in the farmers for bettering their condition. This year when the Menominee county agricultural school has its short course, one day—March 22—will be Grange Day. The dairy, the judging of seed corn and other practical subjects, as well as Grange topics, will be taken up. N. P. Hull, Master of the State Grange, has already been obtained as one of the speakers. One and one-third fare will be granted by the railroads and a prize will be given by the school for largest attendance from any subordinate Grange. Thousands of dollars have been saved through co-operate buying and selling. Dairy clubs are being organized and all indications point to a better, stronger, and more prosperous county, with the Grange doing its full share toward that end.

RALPH N. SEWARD.

AMONG THE LIVE GRANGES.

Brant Grange, of Saginaw Co., made Jan. 20, the occasion of its visit by General Deputy H. B. Fuller and County Deputy Fred Wittse, a time of all-round revival. Heartily entering into the campaign, the members invited the State Lecturer to be present, prepared a brief local program to intersperse among the addresses and, at the close of afternoon and evening meetings, served an oyster supper to 70. This number were all Grange members, 22 candidates received that day being among them. A good day's work.

Star Grange, of Gratiot Co., had a good meeting Jan. 28. After conferring third and fourth degrees on one candidate, a recess was taken, followed by the lecturer's program. The first question discussed was, "Do you think that equal suffrage would benefit the state?" It was fully discussed by Bros. Hale, Marvin, Hutchison, Houser and Wetherel, and it was decided that it would not. Roll call was answered by quotations. The subject, "Games and Refreshments for Winter Evenings," was led by Mrs. Baker, followed by Mrs. Hutchison and Mr. Wetherel. They thought it better to allow games in the home than to find the children seeking them elsewhere.

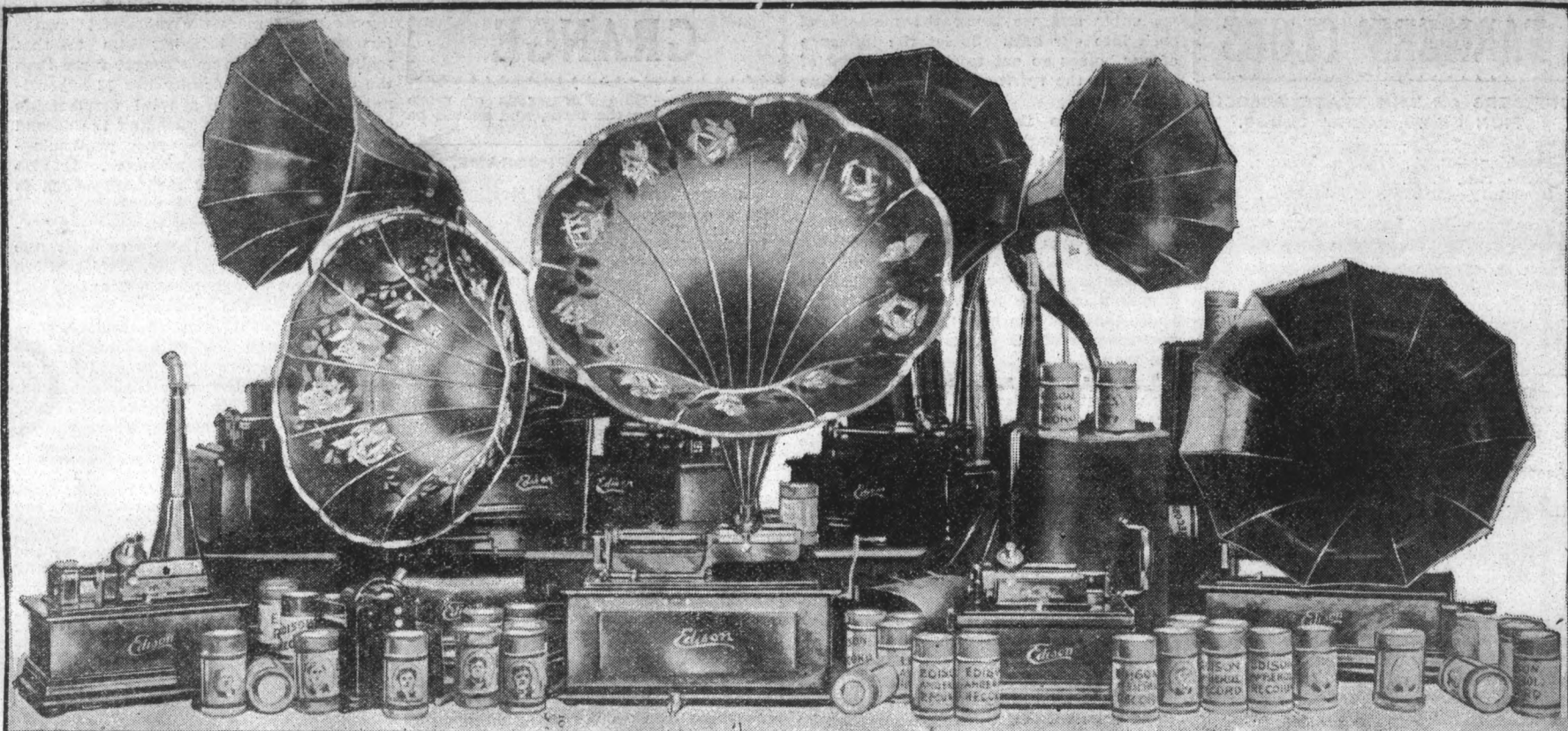
Enjoyable Union Meeting.—Hesperia Grange, of Newaygo Co., visited their Holton brothers and sisters recently. The members of both organizations turned out in good numbers and made the occasion one that will be recalled with great pleasure by everyone present. Holton Patrons made the dinner one of the biggest features of the day's program. When this had been enjoyed to the fullest extent, a short musical and literary program was given, Bro. Marvin opening the discussion of the subject, "Best Papers and Magazines for the Farm Home." The Michigan Farmer appeared to be strongly preferred by a majority of those present, with the Youth's Companion a general favorite among the young people. A young ladies' quartet and a number of the children contributed to the program. Bro. Wm. Robertson gave a rousing talk on Grange fire insurance, proving his statements as he went along and clinching his arguments with figures. The meeting closed with all convinced that in no other organization are pleasure, recreation and intellectual development for the farmer and his family so well supplied as in the Grange.

Young Patrons at Helm.—Berlin Center Grange, No. 272, was reorganized by Former Master Horton about the beginning of the new year. In reorganizing, the older members yielded the offices and the responsibilities of the organization to the young Patrons and its prospects appear very bright. The young officers selected for the present year are: Master, Ray Smith; overseer, Wade Allen; lecturer, Edith Chamberlin; steward, Harrison Sherwood; asst. steward, Clare Waitman; chaplain, Ella Carman; secretary, Birdie Sherwood; gate keeper, Clayton Sible; Pomona, Lalia Harwood; Flora, Mrs. Lenton; Ceres, Mrs. Chas. Lowry; lady asst. steward, Eva Woodard; organizer, Lillian Shaver. Delegates Mr. and Mrs. Frank Daniels, of Keene Grange, and our installing officer were greatly pleased to know that Berlin Center had so many young people and believed that the older members had made no mistake in giving over the responsibilities to them. The first task of the young officers was the initiation of five new members at a recent meeting and they accomplished the work in fine style.—Mrs. L. J. Barnard.

COMING EVENTS.

Pomona Meetings.

Arenac Co., with Bay Grange, at Arenac, Friday, Feb. 24. (Postponed from Feb. 17). Geo. B. Horton, state speaker. Installation of officers.
Ingham Co., with Wheatfield Grange, Wednesday, Feb. 22. Special patriotic program.
Barry Co., with Johnstown Grange, Wednesday, Feb. 22.



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