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MICHIGAN DAIRYMEN'S ANNUAL MEETING.

THE Thirty-ninth Annual Convention of the Michigan State Dairymen's Association was held in the municipal auditorium of the city of Saginaw, on February 4-7 inclusive. The accommodations afforded by the magnificent building which housed the convention were appreciated by not only the dairy farmers, creamery men, cheese makers, and ice cream men who attended, but also by the supply people who found there excellent conditions for the display of their products. While the weather was cold there was nothing about it to discourage any who attended and all seemed to enjoy the bracing effect of the sharp winds coming down from Saginaw Bay.

Although the attendance was not all that may have been desired, especially at the early session, on Wednesday afternoon there was none too large seating capacity in the hall to fully accommodate all those who came to listen to the addresses. The fact, too, that the sessions were divided, butter makers, ice cream men and cheese makers each holding smaller sessions by themselves, made the attendance appear smaller at times than it actually was. One could not help but observe, however, that there was intense interest on the part of those who were there, as shown by the animated discussion following the different talks and papers, and also the ease with which it was possible to profitably employ the time made vacant by the absence of two or three speakers who were to have appeared upon the program.

The exhibits of the supply men were more than usually attractive, due, possibly, to advantages afforded by the large spacious room in the auditorium which gave every opportunity to show goods to advantage. The space, too, was fully occupied, showing these men to be loyal supporters of the Michigan organization.

The first session was called to order by President Eldridge, of Gratiot county. After invocation the dairymen were welcomed by the Mayor of Saginaw and following the response, the president gave his annual address which contained advanced ideas for the consideration of Michigan's dairymen. Secretary Bechtel, of Tuscola county, then gave a report of his work as secretary and treasurer. We cannot refrain from expressing the general appreciation of the members and others of the work of the organization's officials, particularly that of Mr. Bechtel, who seemed to have the affairs of the whole convention well in hand and managed them with no apparent discord.

A Greater Income.

There was a fair attendance present when the president called for order at the afternoon meeting, which was known as the dairy farmers' session. Vice-president Vanderboom, of Marquette county, was asked to take the chair for the session. He pointed out that the dairyman was the foundation of the whole dairy industry, and that upon the farmer's knowledge of the dairy cow, of the ways of treating her, of provid-

ing her with good water, properly compounded, wholesome feed, fresh air, sunshine and grooming, depended the whole superstructure of the great dairy business divided between the butter makers, cheese makers, condensed milk manufacturers, ice cream men, etc. He stated that if our milk could be produced in sanitary barns by sanitary men and cooled properly immediately after milking and then kept cool until delivered, that a much greater revenue would be received by our dairymen. He believed that we could get on an average two cents more per pound for our butter if produced under conditions that can, without great inconvenience, be maintained by our dairy farmers.

Chairman Vanderboom then called for

cow in his herd that was nine years old and had consumed silage from the time she was old enough to eat roughage, and yet appeared to be in the very best of health.

The importance of the right form for a silo was impressed. The early silos were made too wide and too low to give best results. Mr. Bullock mentioned a silo built many years ago on former Governor Rich's farm, which was 22 feet square on the ground and 30 feet high. In these large silos much loss occurs because of a lack of weight of the material in the silo which prevents proper packing and the exclusion of air, and also because it is usually impossible to feed the material out rapidly enough to prevent decomposition. He recommended that it

The speaker recommended growing as large a variety as the climate of the locality will mature. By allowing it to grow a long season a greater bulk can be obtained from the same acreage than from corn that matures earlier. Even though this time extends beyond the early frosts a good silage can be made from it. In fact, Mr. Bullock is not frightened if the corn is frosted; he believes, however, that it should be hurried to the silo as soon after such frosting as possible.

With regard to feeding, he mentioned that his plan was to feed the silage twice each day, at morning and at night.

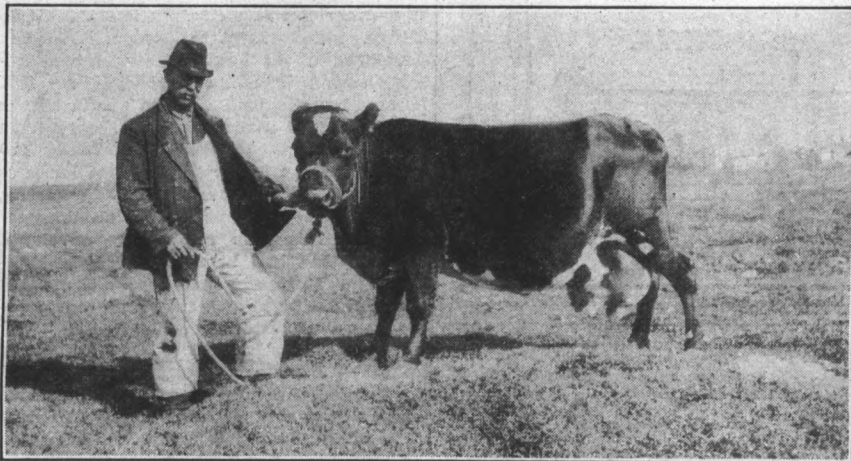
Certain experimentors are endeavoring to improve the quality of silage by steaming it at intervals when filling. This, Mr. Bullock thought was an expense that was unwarranted, inasmuch as comparatively little of the silage when properly made under ordinary methods, is lost, and besides, the gradual heating caused by the fermentation of the material necessarily cooks it sufficiently without using foreign heat for that purpose. Nor does the speaker add salt to silage, as is the practice of some. He has found it easy to make good silage without this additional expense and naturally does not practice it.

Concerning the amount of silage corn required, investigation shows that on an average one acre of corn when ensiled will feed three cows for a period of six months. As compared with other sources of feed this shows the silo to be unusually economical, not only because it increases the amount of digestive nutrients to be gotten from an acre, but also because, within such a structure can be placed a larger amount of feed than in a barn that would cost many times the price of the silo.

Discussion.—The discussion was led by H. W. Kinney, of Saginaw county. He is interested in the silo and has investigated the question over the country and finds that the enthusiasm for ensilage is widespread. There are many ways of obtaining information these days and he mentioned that these avenues are being widely used by farmers, stockmen and dairymen to obtain facts regarding the construction and filling of silos. In almost every community are those who have attempted ensiling corn but failed to follow the recognized rules and secured a poor product, thereby bringing prejudice to bear against silage that is altogether unwarranted. However, at the

present time these prejudices are being largely overcome and farmers are recognizing the utility of the silo, as may be seen by the exceedingly large number that are being built all over the land. He believes that accurate information is an important thing just now and suggested that silo talks be started in every community in which animals are fed.

In the general discussion Mr. Bullock was asked with regard to the casing of his silo. It seems that he first built a square silo 16x16 feet on the ground and 22 feet high. Later he



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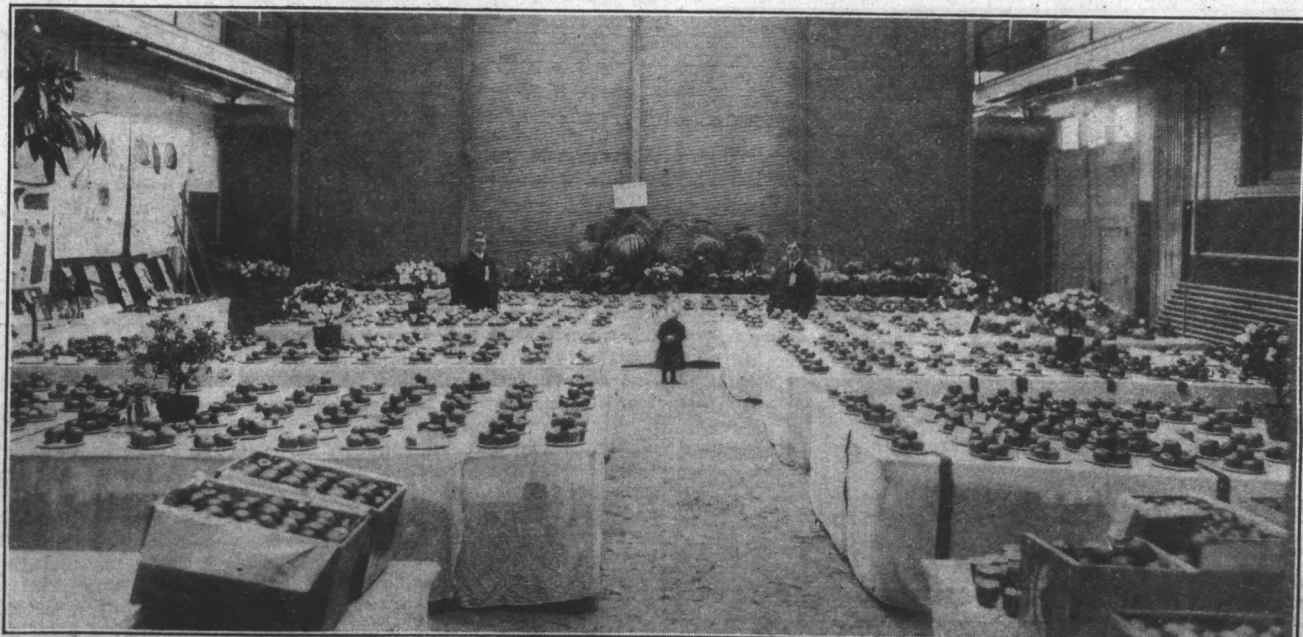
the first paper on the program by C. A. Bullock, of Lapeer county, entitled, **Silo and Silage.**

As is common in all innovations in methods of doing things, the silo has come in for a number of complaints, in this case, however, bearing upon one particular subject and that is the effect of the acid generated by the fermentation of the silage upon the digestive system of animals. Mr. Bullock first mentioned this complaint and answered it by pointing out that those making it were almost invariably men who had never used silage in their feeding or who had experience only in the use of a poor quality of this feed due to ignorance of the proper method of making it. He mentioned a

is better to build two silos of a smaller diameter than to build one of larger dimensions and it is also advisable to have the silo from 30 to 50 feet in depth.

Silos should be anchored in some manner, that is, when built of wood. Mr. Bullock reported that an insurance company of his locality had paid insurance on 30 silos that had been blown down. This impressed the necessity of giving attention to this feature in the construction, although most of the manufactured silos have provided against such contingencies.

The cost of the ensilage is determined to some extent by the kind of corn used for making it. It is possible to grow larger varieties of corn for this purpose than where the crop is used for grain.



View of the Popular Fruit and Flower Show Recently Held at Michigan Agricultural College. (See report on page 195).

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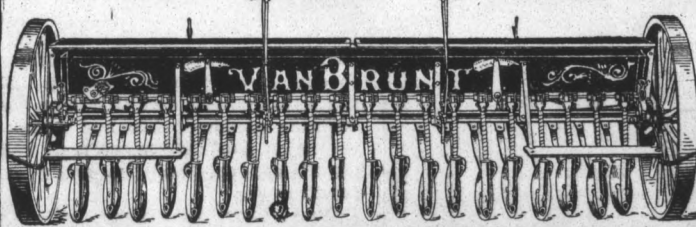
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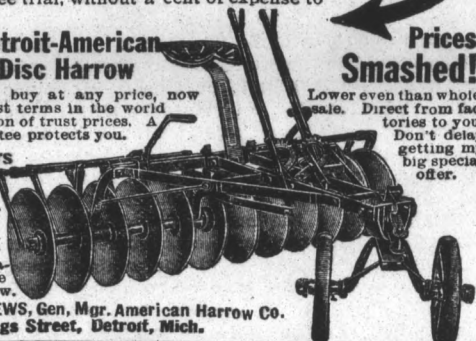
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erected inside of this square silo a round one 14 feet in diameter and 30 feet high. He has found advantages from this casing. The hoops on the round silo have never required tightening, the air space between prevents the silage freezing and the outside structure insures against wind. The roof is built upon the outside casing and from the top of the round silo over the air space between that and the casing is constructed a floor. This enables him not only to fill the round silo completely full, but also to pile ensilage underneath the roof so that it can be pulled into the silo after settling. Mr. Bullock throws water on the silage immediately after filling and again in about a week. This saves considerable of the material on top and aids in pressing the silage down to exclude the air.

Mr. Kinney suggested a method of keeping silage from freezing, the plan consisting in making a trench in the silage around the wall of the silo, this trench being about a foot wide and from 12 to 15 inches deep. As the body of the silage is fed down, this trench is gradually worked down with it. The air space between the silage and the wall of the silo prevents the body of the silage from freezing. It is, of course, advisable to start this trench before the silage has frozen as it would be difficult to dig out the material after frost had once congealed the material around the walls.

There are often complaints of silage molding near the walls of the silo. The cause for this, suggested by some, lays in the walls absorbing moisture from the material immediately next to it, thus permitting the air to enter and mold it.

How to Build a Dairy Herd.

This, the second topic for discussion at the afternoon meeting, was ably handled by Prof. A. C. Anderson, of the Michigan Agricultural College, with whom the audience appeared to be well acquainted. The American stock raiser has done two things, stated Prof. Anderson. He has developed a fat hog and by careful selection and breeding produced a fast horse. Practically all other useful breeds in our list of live stock have come from abroad. American conditions really required the fat hog, and the fast horse is characteristic of this nation. Whereas, in other lines it was better economy to bring to this side the highly developed animals that had been produced by English and European breeders. Some ten years ago a band of men attempted to develop an American coach horse. This enterprise may be said to have failed, not so much because of its being impossible to develop the type of animal these men had in mind but because of the introduction of automobiles which satisfied the demand for an animal of this type.

Experience and observations of the past are leading breeders to hesitate in setting a limit to the possibilities of breeding. Take, for example, the history of the fast horse. Within the memory of many men living today a horse that could trot in 2:30 was considered an unusual animal and that speed was calculated to be the fastest that horses could ever go. Nevertheless animals have been developed which have gradually cut the speed down until today there are scores of animals that travel faster than 2:10 and a few that reach the two-minute gait. The dairy cow is another example: When the first 1,000-pound cow was recorded men declared that she was a sport and only some such abnormal individuals would ever be found to equal such a record, but Prof. Anderson stated that we have now records of 31 cows that have produced over 800 pounds of butter-fat, which means practically 1,000 pounds of butter. Within the past five years 15 animals have exceeded the 1,000-pound mark. The records shows that 16 Holsteins, eight Jerseys, six Guernseys and one Ayrshire have yielded 1,000 or more pounds of butter in a year.

Taking the country as a whole there are no short cuts to the increasing of good dairy stock. Such stock must be bred by making use of the good blood we have and that which may be imported from abroad. A fault with the American dairyman is that he does too much mixed breeding. An instance came under Prof. Anderson's notice where a man had been breeding his cows to a Guernsey sire for a number of years until he had secured a high-grade and an excellent type of this breed. Upon visiting this herd he discovered that this man had changed and was using a Hereford sire because a neighbor had remarked that that breed had valuable dairy qualities. The progeny would probably neither be economical as a milker nor produce a decent type of beef animal. A second example came to his notice at the agricultural college where

an animal was brought for service which the owner thought had excellent qualities because, in her were strains of some excellent Shorthorn, Holstein and Jersey blood, and now he desired to breed to a Guernsey in order that he might incorporate the qualities of all of these different breeds in a single animal. This tendency of mixing the breeds is wrong and yet it is more common among the rank and file of farmers and dairymen than one may be led to believe. In trying to get all the qualities combined in a single animal we are certain to miss all.

One influence that probably leads to this cross breeding is the fact that we often find in the fat stock ring animals of such breeding taking first prizes. Now it often happens that the progeny of the parents of different breeds makes an excellent individual, but when this individual is again bred the results are very discouraging. For this reason cross-bred animals have no place in the dairy herd. Their progeny cannot be counted upon and the dairyman who expects to stay in the business must depend upon the calves for maintaining the standard of his herd.

The dairyman should keep to a certain line of breeding for he will defeat his purpose if he changes his policy after a few years. The ground should be carefully studied not only as to the purpose for which he is in the dairy business, but also to include his personal likes and dislikes and select a breed that will best meet the requirements. In three or four generations, even if he starts with a grade herd but uses a thorough-bred sire of his favorite kind, he is sure to secure the appearance and producing qualities of the breed selected.

The herd can be developed most economically by saving the heifer calves. These should be kept until they freshen when the less likely ones may be sorted out. One should attempt to have a surplus of such stock so as to give a wider chance to secure better animals.

The man who attempts to build up his herd should be persistent. He needs that quality which enables him to follow a single policy year after year. Too many men want variety, they desire to change from one thing to another but the dairyman cannot do this and succeed. If results are not what he thinks they ought to be then the possibilities are that a little closer application to the dairy business will improve them since a certain amount of equipment and expenditure of nervous energy are needed to care for a few cows, which equipment and energy would probably suffice for many times the number of animals kept.

Prof. Anderson closed by impressing the need of making our dairy farming intensive. More cows are required in a single community to make the business pay best. The expense of the long haul and the deterioration of products due to inconvenient transportation both work to the disadvantage of dairy economy and both of these objections may be partially eliminated by the farmers of the community making dairying a more intensive business.

(Continued next week.)

WHAT PLANTS TO GROW FOR THE FIRST CROP ON MUCK LAND.

I have recently purchased 40 acres of muck land with muck ranging in depth from six inches to six feet. It has never been plowed and I would like to have someone advise me through The Farmer as to the best crops to raise on it the first year.

H. A. M.

There is so much difference in the character of muck land that one cannot tell without making a careful investigation, and really without some little experimenting. This the farmer has to do himself. Sometimes the muck land will grow almost any kind of crops the first thing without the addition of any manure or fertilizer or anything of that sort. On the other hand, some muck land won't grow anything at first. It all depends upon the muck land. Usually the best crop to put on muck land is corn, but I have seen muck land where corn didn't seem to grow at all. I have seen muck land where you had to put on a good application of potash and phosphoric acid to get corn to grow. The muck is so raw and so much in the form of peat that even the nitrogen is not available, and you can practically grow nothing until it is weathered. In such cases as this a good application of stable manure is the best medicine that you can give it. If you haven't got the stable manure then a good complete fertilizer will help out. I would say that you must experiment in a small way until you find out the best crop to put upon this land because nobody knows what kind of muck you have got.

COLON C. LILLIE.

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FARM NOTES.

Applying Lime to Bean Ground.

I would like some information on how to sow lime and what kind to sow. I have eight acres which I intend putting into beans in the spring, and the land is very sour. I want to sow this to wheat next fall and seed it to clover the next spring. Will it pay to sow lime with beans or would you advise sowing it with some other crop?

Kent Co.

C. J. S.

There would be the same reason for applying lime to land which was in an acid condition as a preparation for the bean crop that would obtain if the land were being prepared for alfalfa or to be used for clover. The bean, like these other plants, is a legume and for the best success of the crop requires the soil to be in condition to become an acceptable home to the nitrogen-fixing bacteria which finds a home in the roots of the bean as other species do in the roots of alfalfa and clover, thus affording nitrogen for the crop and a residue for succeeding crops.

The kind of lime to sow will depend upon local conditions and the amount should depend largely upon the kind used. If ground limestone is used, from one to three tons per acre should be applied as

season for its development, provided a stand of clover can be secured as suggested.

It will be impossible to tell whether this alfalfa will make a stand until spring, when an examination will determine whether it is alive and whether the nodules are present on the roots. If the plants are not so inoculated it will not make a successful stand. Inasmuch as the clover seeding also failed on this land it may be possible that lime will be required to place the land in a condition to be successfully seeded to alfalfa. The plan of planting early potatoes and seeding after the crop is removed is a fairly good one and if lime is needed it had best be applied when fitting the land for potatoes.

Seed Oats.

Would it be all right to sow oats in Clare county that were shipped in from Chicago?

Clare Co.

J. F. S.

It would be much better to secure seed oats from some Michigan farmer who has a heavy producing strain of seed of some desirable variety. While there is no doubt that seed oats secured on the general market from a distant point would grow and probably give fair results, yet unacclimated common seed will not gen-



The Farm Barn of C. I. Roosa, of Gratiot County.

it will leave a residue in the soil and its application will give more permanent results. If caustic lime is applied, from 500 pounds to one ton may be used. The smaller amount might correct the acidity but would not leave a residue of lime in the soil, and generally about 1,000 pounds per acre is to be recommended. The kind of lime to use will depend upon local conditions, as to its availability, cost, etc. If lime is to be applied to this soil it would certainly be better to apply it before the bean crop than before any other.

Clover Seeding Failed.

I have a field of five acres of rather worn sand on which I have failed to get a stand of clover. Last winter I manured nearly all of it and planted it to potatoes last summer, securing slightly over 100 bushels per acre. Now do you think it would pay me to sow Canadian field peas or soy beans to plow under to bring this land up, or not. About how much of either to sow per acre and when is the proper time to sow, and about how much is the usual price per bushel? Last spring I decided to try a small piece of alfalfa, so I plowed under a half acre of heavy rye and manured it well before plowing, sowing the last of May. Alfalfa came up very nice and grew well for a short time and then the weeds fairly swamped it. This last fall what was left of it was very dry looking and yellow. Do you think it will amount to anything, or would it be best to plow and plant to early potatoes, keeping all weeds out, and try again after harvesting potatoes?

Allegan Co.

C. E. W.

The failure to get a seeding of clover on this soil may have been due to an acid condition of the soil rather than to lack of available plant food or poor physical condition. In that case it may be necessary to apply lime as a soil corrective to promote a stand of clover. However, the application of stable manure would tend to promote a better physical condition in this soil and the wet season of last year may have also tended to correct this condition, so that a successful seeding of clover might be secured in a crop of spring grain, such as a light seeding of oats or barley. In the writer's opinion it would be worth a trial and if the seeding failed a catch crop could be sown to provide vegetable matter for plowing down the following spring, such as rye and vetch or even rye alone. As a means of determining whether lime is needed it would pay to apply lime on a small plot while the ground is being fitted for oats.

The culture of soy beans was described in a recent issue, but it is not, in the writer's opinion, good economy to devote the time to the growing of a crop for green manure which occupies the entire

erally produce as well and where one knows nothing of the source of the seed he is not apt to get as productive a strain as could be selected by securing it from a Michigan grower of reputation. If one is to secure seed from a distance it would be better to get it from some reliable seed dealer than to take an ordinary market quality of oats.

Best Method of Handling Sandy Field.

I have recently purchased an old farm that has been farmed for years and has never been kept in shape nor had any manure to speak of and therefore is in a rundown condition. There is one field in particular that is very light sand with quicksand from two to eight feet below the surface. What should I plant on this field to improve the soil so that it will produce a paying crop and how should I handle same?

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It is a pretty difficult proposition to place a field of this kind in a first-class condition of fertility. Where there is no heavier subsoil a sandy field with quicksand below it should be so handled as to have something growing on it at all times in order to hold the available plant food which is contained in or may be incorporated with the soil. Such land should always have a cover crop on over winter and considerable vegetable matter plowed down to improve the physical condition of the surface soil. Rye will serve this purpose very well. However, unless stable manure is available or chemical fertilizers are applied it will take some time to build the soil up in condition where it will produce well.

Using Chicken Manure.

When and how should chicken manure be applied to get best results? I have about a ton, stored under cover. Have a 40-acre farm of light sandy soil. We raise corn, rye, clover, potatoes and garden truck.

Calhoun Co.

W. R. I.

The best way in which to use chicken manure is to mix it and apply with other manure made upon the farm. While chicken manure contains considerably more plant food than most other manures produced upon the farm it is not in any sense a concentrated fertilizer and under ordinary conditions it will not pay to treat it as such. It is difficult, however, to apply it evenly and thinly enough unless mixed with the other manure, placing a portion of it on top of the load when the other manure is being drawn to the field.

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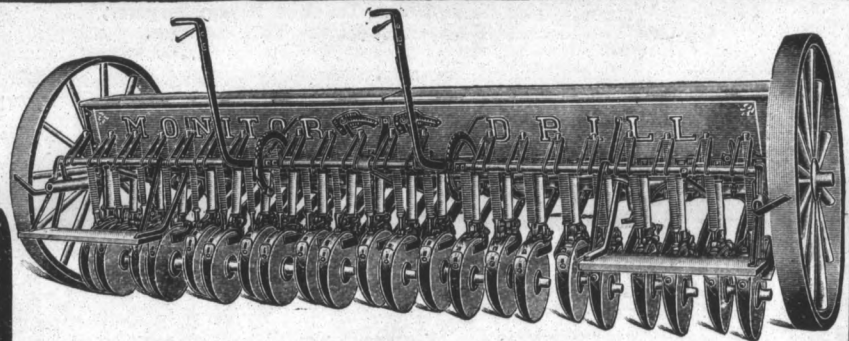
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The Big Cylinder, the Man Behind the Gun, the patented Grate and Check Plate and the Shakers that toss the straw up and beat it as you would do with a pitchfork, save the grain that others waste, whether it be wheat, oats, rye, barley, flax, peas, rice, alfalfa, timothy or other grains or seeds.

THE RED RIVER SPECIAL WORKS ON AN ENTIRELY DIFFERENT PRINCIPLE OF SEPARATION from any other make. It beats it out, while other makes hurry the straw to the stack and expect the grain to fall out, which it does not do.

W. F. Miller and sixteen other farmers of Lorraine, Kas., say: "The Red River Special wasted less of our grain than any other machine we ever had. From Universal Feeder to Wind Stacker it did its work perfectly. We believe it saved enough more grain than other machines would to pay our several thresh bills."

Have your threshing done this year by a RED RIVER SPECIAL. IT WILL SAVE YOUR THRESH BILL.

Write us for the proof or call on our Branch House or Dealer.

NICHOLS & SHEPARD CO., Battle Creek, Mich.

The Only Builders of the Red River Special Thresher, Self-Feeders, Wind Stackers, Weighers, and N. & S. Co. Traction Steam Engines, Oil-Gas Tractors and Everything for the Thresherman.



Good Crops of Oats were Formerly the Rule; Now a Good Crop is the Exception.

One reason is starvation—the lack of the right kinds of plant food in the right form, available at the right time. The result is weak plants that grow slowly, yield light, chaffy grain and fall an easy prey to rust, blight and insects.

POTASH

has been shown to greatly decrease the liability of the small grains to attacks of rust, as well as lodging because of weak straw. Be sure that your oats fertilizer contains 6 to 8 per cent. Potash. Ask your dealer to carry such brands, or Potash Salts, to enable you to bring the brands up to this standard.

If he will not, we will sell you Potash in any amount from a 200-pound bag up. Write for prices and for free book on fertilizer formulas and how to adjust them.

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Dan Patch Steel Plow



Greatest walking plow value ever offered. Lowest price ever. A plow to fill every requirement. Double shin and solid steel shin welded on top of moldboard. Bottoms perfectly shaped—always scour. Strongly braced. Shin welded to landslide, carefully bolted to share. Handles and beams proper length—made of white oak.

More than 2,000,000 farmers are customers of mine. I save them money. I'll save YOU money.

M. W. Savage, Pres.
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Write Today For My Special Implement Catalog—FREE
Thirty days' free working trial on your own farm. Compare my price with anybody's. Then write at once.

MONEY BACK IF YOU'RE NOT SATISFIED

FIFTH NATIONAL CORN SHOW.

The first National Corn Show, held at Chicago, in 1907, came as the result of what some people termed an effort to popularize scientific research in corn growing. There was much criticism of a "one-crop show," at which prizes valued at thousands of dollars were awarded for single ears or groups of 10 ears. The critics pointed out the danger of attaching undue importance to single features of corn growing, and directing too much attention to a single crop. Perhaps this early criticism had its effect, and perhaps the managers were guided wisely by these early objections. But certain it is that the organization and the show started six years ago have outgrown criticism and have developed the most valuable and comprehensive agricultural exposition of the present time.

The Fifth National Corn Show has just closed at Columbia, S. C. No longer a one-crop show, it combined all of the elements of a real national agricultural exposition. While better crop production was prominent as one of the aims of the exposition, better farmers and better farming through more liberal education was the chief aim.

The strictly educational features were made stronger than ever before, denoting the attention that is being given at present to adapting and developing our schools to country and farm needs. The study of the work of the school and the church as community centers, the adaptation of rural school curriculums to agricultural instruction, and the development of corn and canning clubs to interest the boys and girls of the farm all dealt with the educational problems. And perhaps no place in the country is in greater need of such a demonstration than that selected by the managers for this year's show.

An Alabama teacher, in commenting on the tomato clubs organized by the government for girls, remarked that these clubs have done the first work in instructing southern housekeepers in the economy of canning and preserving fruits and vegetables. A South Carolina teacher said that from the interest thus aroused she hoped to make progress in teaching sewing and mending, two arts and economies which have been entirely neglected.

Corn and Tomato Clubs.

The show just closed was the round-up of the corn and tomato club work for the year. There were close to 60,000 boys and girls throughout the south enrolled in such clubs during the past season, and the winners in corn production and in securing the greatest net profit from an acre of tomatoes were brought together, free of personal expense, at this show. There were about 550 of these young people, about 10 being girls. The boys were housed at the show grounds under military organization, while the girls were provided with rooms in the city. A week's school was given, the boys being instructed by college and department teachers in corn and general crop growing, while the girls were given instruction in canning, sewing and general home economics.

Station Exhibits.

The management has done well to prevent all exhibits of an advertising nature to enter the show. There were no land or orchard booms there. Each state was represented by its experiment station, and these station exhibits reflected the leading agricultural interests of each state. More stations were represented than ever before, and while the ground covered by each was not as varied as in previous years, the aggregate show was stronger and more instructive. Each station put on exhibit the lines of work to which it had given greatest attention, and thus indicated the present status of its leading industries. Thus Michigan led in seed selection in grain and forage crops; Pennsylvania in its soil and fertility experiments, both in general crop and orchard work; New York in plant breeding work; Indiana in corn breeding; Wisconsin in pure-bred seed development; the southern states in cotton and corn studies, and the western states in grain and live stock work.

Michigan.—This state was well represented with a splendid showing of the grains and grasses and legumes, showing the improvement that has been made by selection and breeding. Being a leader in the production of beans, fiber flax, beet sugar, peppermint and potatoes, the work with these crops figured prominently. An exhibit showing the various steps in the manufacture of sugar from sugar beets was, perhaps, the most popular. This process was shown by samples of the product in its various stages. The dried

pulp proved to be of particular interest to southern cattle feeders who are looking for such a product to lighten up cotton-seed meal in their feeding rations. The Michigan booth drew many visitors through this exhibit alone, and there were many inquiries as to the supply and availability of feeding pulp. The exhibit was in charge of Prof. Spragg and Mr. W. F. Raven.

Pennsylvania.—The Pennsylvania Station attracted wide attention with its graphic exhibit of results obtained in its 30-year fertilizer tests. The comparative yields from different methods of treatment were shown by charts and also by bales of forage crops and glass cylinders of grain corresponding to production yields. The comparative results obtained from cultural and fertilizer experiments with orchards, under direction of Dr. Stewart, were shown by boxes of apples from the various orchards. The quantity of apples per box corresponded with yields, and the apples themselves showed the quality. The small model respiration calorimeter attracted a great deal of attention, and directed interest to the animal nutrition studies.

New York.—The New York Station exhibited results obtained in plant breeding applied to oats, wheat, corn and timothy. As plant breeding is one of the more recent lines of investigation taken up by stations and is proving to be a field of wonderful possibilities, all stations are doing more or less work in it. There was probably more duplication of this work shown in the exhibits than in any other, but New York was easily the leader, just as it is the leader in results obtained. Improvements shown in timothy and grains particularly were highly enlightening to the show visitors. Another feature of the New York exhibit was a 21x40-foot model of a county or local fair ground adapted to meet the needs of a community social center.

Ohio.—The Ohio exhibit specialized in two lines, wool studies and soil and fertilizer tests. Ohio authorities have gathered what is, perhaps, the most instructive exhibit of wool and woolen fabrics that is to be found in this country. It not only shows samples of wool from all breeds and all wool producing sections, but it also shows how wool is handled in the manufacture of fabrics, and gives suggestions on improvement in growing, shearing, tying and packing. The exhibit appealed particularly to visitors from live stock states. The exhibit in soil studies was along the well-known lines of investigation conducted in that state.

Virginia.—Virginia showed strong in studies of grain and forage, both from standpoint of improvement and prevention of diseases. Tobacco studies were also prominent. It showed the best exhibit of apples on the grounds, in demonstrating the possibilities of orchard work under proper care and treatment.

Other States.—Indiana had an interesting exhibit of general live stock and grain farming, based on its corn growing industry. Its work in corn breeding helped to explain the supremacy of this state in national corn contests. Indiana has won the national trophy on ten ears five years in succession, and leads in winnings on single ears. Rhode Island specialized its exhibit in poultry and soil studies. The effect of lime, alone and in conjunction with other fertilizer, was a prominent feature of the exhibit. South Carolina exhibited studies in cotton in all of its phases, from cultivation of soil to weaving of cotton cloth in a small-sized loom. Studies of soil formation, soil erosion, effect of fertilizers and advantages of rotations; studies in dairy husbandry and the relation of live stock to cotton and corn growing, and studies of effect of careful seed selection, rounded out what was, perhaps the best state exhibit on the grounds. Wisconsin showed results of pedigreed seed production and results in the state from furnishing such seed to farmers. Georgia showed studies in cotton growing on 10 types of soil most common in the state. Washington showed studies in grain, grasses and apples; Missouri in grain and soil studies, also process of cob pipe manufacture; Kentucky, corn, tobacco, soy beans and hemp; Texas, corn, grains, tobacco and rice; Nebraska, effect of cultivation on corn yields, relation of water supply and heat upon corn yields; Louisiana, sugar cane and rice and manufacture of sugar from canes; Minnesota, corn studies in selection, testing and cultivating. The New England States and New Jersey, Delaware and Maryland were not represented.

Government Exhibit.—In keeping with (Continued on page 211).

HAULING MANURE IN WINTER.

In regard to the article written by Mr. Haynes, of Pennsylvania, in the Michigan Farmer of January 11, I would like to ask if it would be good judgment to haul out manure in the winter when the ground is frozen like a rock, or had perhaps a foot of snow on the surface? He stated that no man would think of buying a ton of commercial fertilizer, and piling it up for three or four months, to be wasted by leaching, and I don't think he could find a man that would be foolish enough to spread his commercial fertilizer on top of the snow or on top of the frozen ground, to be washed away before the frost was out of the ground enough to take up any of the goodness of it.

Now this has been a question in my mind for some time, and I would like to hear from other men who have had experience in this matter of hauling out manure on the frozen ground or on the snow.

I would like to hear from Mr. Colon C. Lillie on this subject, and others, for it would be a great saving in labor to me if this manure could be hauled out on this frozen ground without being wasted, as we handle more manure than most farmers on 80 acres, for in addition to what is made on the farm we haul from town, only a mile distant, all that we can buy, and at present have quite a lot on hand.

Two years ago I hauled all winter as fast as I could get the manure, and covered about 16 acres during the winter. Now our land is quite level and heavy clay loam, but in the spring the water in the county drain was red with the leaching from my fields, for a mile below us, and I think I must have lost a large portion of my labor.

Of course, there is bound to be a waste in either case, whether it is left in a pile or spread on the fields, at this season of the year, when the land is frozen and dormant, and there is no plant life growing to take up the plant food, and hold it, but what I want to know is which is the most economical of the two methods.

At present we are piling the manure that we get from town back of our cow barn and mixing it with the cow manure by driving over the pile and unloading on both sides and keeping the pile flat and well spread out to prevent heating.

Mason Co.

SUBSCRIBER.

On comparatively level land it is the consensus of opinion among practical farmers, as well as scientists, that it is better economy to haul the manure direct from the stable to the fields, even during the winter season, provided it is applied to sod ground. Of course, when there is considerable snow on the frozen ground and this melts rapidly there is undoubtedly some plant food carried away with the surface water, which is lost beyond recovery. But there is also an unavoidable loss of plant food where the manure is stored in piles over winter, both from the leaching of the manure and the chemical changes which take place due to the action of the bacteria which hasten the decomposition of the manure. Where the manure is mixed as described in this case and stored in a large, flat pile, this loss would be nowhere near as great as is the case where the manure is carelessly piled under the eaves or in the barnyard, and perhaps less than would be the case if the manure were hauled directly to the field. But considerable more labor will be required to handle it in this way, and labor is money in the spring of the year when the season's campaign is beginning. Where the manure is hauled out on sod ground the turf will tend to hold a larger proportion of the surface water and most of the plant food will settle into the surface soil and become available to the grass roots. Also a vigorous early growth of grass will be promoted which will be beneficial on the later plowed fields. The plan above described is undoubtedly a good one but for the average farmer, labor cost considered, we believe it the more economical plan to haul manure direct from the stable for application on level, sod ground when conditions are reasonably favorable. The ideal method of handling the manure during the winter would be to store it in a cement lined manure pit or shed where there would be no loss from leaching and where the temperature of the mass could be better controlled by adding water as heat developed. But few farms will soon be equipped in this way and their owners must conserve the manure as best they can in some other way.—Eds.

In the south, membership of boys' and girls' agricultural clubs increased from 46,000 in 1911 to 60,000 in 1912.

A Marvelous Corn Planter!

Put in Extra Kernels Where Soil Is Extra Rich, Thus Increasing Corn Crop Amazingly! No Stopping to Adjust Machine

Our patented Variable Device now makes it possible to instantly change the number of grains dropped. No stopping or even slowing down! Just shift a lever, while riding, and presto!—you plant as many grains to the hill as you choose.

Do you realize what this latest corn planter invention means?

It means that you can plant EACH HILL according to the richness of the soil. You can shoot in an extra kernel where soil is rich enough to make it grow. Where soil is thin or poor, you plant less grains to the hill and thus waste no seed corn.

Ten thousand farmers are already using this latest-model planter, some for the past three seasons. They say it's the most wonderful farm machine of the age. In all our 57 years' implement making we have never seen a more remarkable machine. It seems that this planter almost thinks!

From Edge to Flat Drop Without Emptying Hopper

And with the Rock Island No. 1 you don't even have to empty the hopper when changing from edge to flat drop or back again. Simply tilt hopper forward and slip in plates. You can do it in a moment. We furnish all plates needed without extra charge.

Straight Rows Regardless of Speed

No matter how fast or slow your team walks, or who drives—yourself, your hired man or your boy—you'll always get straight, even rows.

Hills are in perfect check. All done by our patented Kick Back Valve.

Most Positive Clutch

Every Rock Island No. 1 is blessed with a positive, yet absolutely trouble-proof clutch. We spent thousands of dollars in perfecting the clutch feature alone. Long before this Planter was put on the market we knew we had a positive clutch. We knew we had a TROUBLE-PROOF clutch. We knew we had a clutch that outwears four ordinary clutches. The principle of our Clutch is fully pictured and described in the catalog we will send you.

Built for Hard Service

Every piece and part of this Planter is built right—built of best materials—built by experts of widest experience. Every little detail has been perfected. We use a special flexible connection to front frame to insure even depth in planting and to prevent possibility of breakage on rough ground. The width is adjustable. Seat is adjustable. Discs or runners, as wanted. 30 or 36-inch wheels, concave, flat or open.

Yet with all these improvements and perfections, with all this added quality, the price is very reasonable. The machine much more than earns its cost in one season.

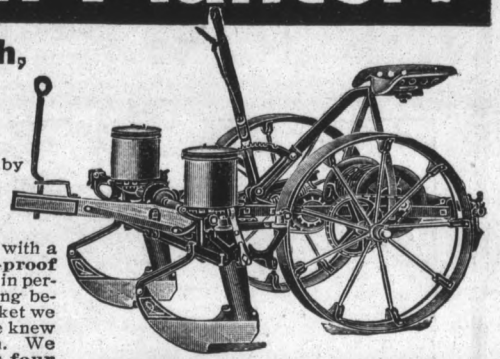
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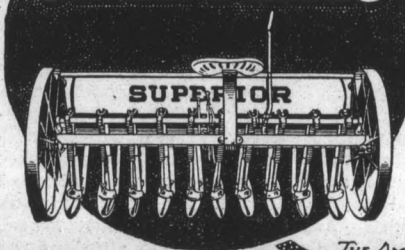


Rock Island No. 1 Corn Planter

Corn Planter Book. And we will tell you where you can see the Rock Island No. 1 Planter. Then with your own knowledge and experience you can see why it's truly a wonder and a great crop getter. Postal brings all information. Don't do a thing about buying any planter or even using your old one without learning all about the Rock Island No. 1.

FREE—We have just bought 6,000 additional copies of Professor Holden's famous book on corn growing. One copy is yours free if you write for it at once, and you should certainly know more about this planter. Write today.

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WARRANTY—Castings replaced **FREE ANYTIME**—one year or 20 years—if shown to be defective. Disc Bearings Warranted for **LIFE OF DRILL**; replaced **FREE** if they ever wear out. Every Drill guaranteed to be and do all we claim.

Superior Drills are made in all sizes and styles in plain and Fertilizer—Disc, Hoe and Shoe.

No seed too large; none too small for the Superior Double Force Feed. Be sure and send for the Superior Catalogue. Tells just what you want to know. Read it. Then go to your local dealer and insist on seeing the **SUPERIOR**—"The Name Tells a True Story."

THE AMERICAN SEEDING MACHINE CO. INCORPORATED
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BIG FREE BOOK ON CLOVER

A gold mine of information

We have just published a wonderful new book entitled "Clover, the Great \$Cash Money Crop." It tells you how to get a sure "catch" first planting; how to keep clover in the rotation; about clover as a soil enricher; how to handle the crop for hay and seed production; how to grow clover that makes richer feed—that produces more beef and milk. It explains the cause of clover failures; how to avoid winter killing; how to prevent ground heaving; how to guard against the loss from heat and drought; all about the causes of "clover sickness" and how to deal with it. Hundreds of other questions, covering sixteen clover varieties, are fully answered. Ordinarily this book sells for 35c, but for a short time we will mail a copy free, or until a certain number have been distributed. Write at once.

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\$1,200 to \$3,000 a Year—at Home or Traveling

Send Coupon for "Horse-Trainers' Book" FREE

Prof. Jesse Beery, known from one end of the country to the other as the World's Master Horseman, having retired from the arena with an independent fortune, is giving the world the priceless secrets of his marvelous success. A copy of his wonderful "HORSE-TRAINERS' PROSPECTUS" will be mailed, free of charge, to all who are ambitious to master this highly profitable and intensely interesting profession.

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The thrilling exhibitions given by this King of Horse-Tamers and Horse-Trainers have never been equalled. His mastery of fierce, man-killing stallions, without whip, curb bit or other cruel devices, has astounded the world. The most unruly horses—kickers, tricksters, balkers—subdued while multitudes watched, wondered and applauded. Medals, trophies and honors of all kinds, showered upon Prof. Beery by admiring thousands, bear eloquent testimony to his matchless skill.

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The Beery Correspondence System of Horse-Training is the only instruction of the kind in the world. The lessons are simple, practical and complete. Learn in spare time, right at home, to take the most vicious horse and subdue him in a few minutes. Prof. Beery can teach you how to break any horse of bad habits—teach a horse to drive without reins. How to tell the disposition of any horse on sight—judging a horse right the first time! How to cure shying, kicking, biting, balking, fear-of-automobiles-and-trains and all other bad traits forever.

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If you want to get into a big money-making profession—if you own unruly horses with bad habits—if you enjoy travel—if you are a natural-born trader and can buy cast-off horses cheap to sell at big profit when trained, send now, today, for this grand Free Horse-Trainers' Prospectus. Tell me all about your horse.

Prof. Jesse Beery, Box 42, Pleasant Hill, Ohio



Prof. Jesse Beery

Break a Colt in 8 Hours!

The lessons in Colt-Breaking alone are worth the price of the entire course. You can train a colt, in 8 hours, to be absolutely trustworthy. There is big money in breaking colts and curing horses of bad habits.

Graduates Making Big Money

For example, take the case of Emmett White, Kalona, Iowa, now a prosperous professional Horse-Trainer. Mr. White says: "I wouldn't take \$500 for what you have taught me. You may judge of my success when I tell you that I have been able to buy a home and an automobile solely through earnings from training horses as taught by your excellent methods."

A. L. Dickinson, Friendship, N. Y., writes: "I am working a pair of horses that cleaned out several men. I got them for \$110, gave them a few lessons and have been offered \$400 for the pair."

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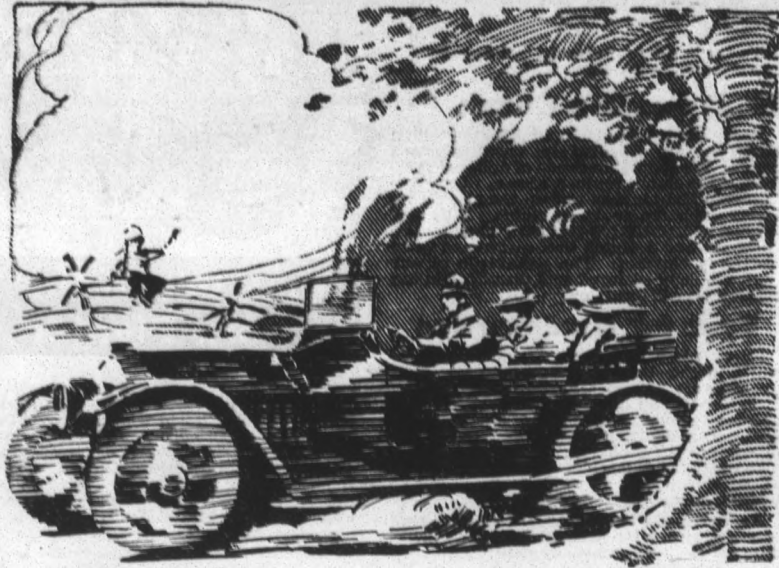
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THE 1913 Mitchell makes three strong, favorable impressions on the man who wants to buy a car; the first by the way it looks; the second by the way it is made—the details of its construction and equipment; the third by the way it runs when he is taken out for a demonstration.

All exaggerations and sensational effects are eliminated in the design of the Mitchell; its lines are those of simple elegance and utility, developed by our engineers along the lines of the best foreign cars.

The man who examines the 1913 Mitchell carefully will soon satisfy himself that no other car at anywhere near the price offers so complete a combination of the newest improvements developed in the motor industry. All the essentials of the highest-priced automobile are in this car—the things that assure power, speed, comfort and convenience.

In the case of the Mitchell, moderate price does not mean "moderate" workmanship or materials; only the best available of both have been utilized—built according to the same standards that have made Mitchell vehicles famous for the past 78 years.

All 1913 Mitchell cars have left drive and center control; Bosch ignition; Rayfield carburetor; Firestone demountable rims; rain-vision windshield; Jones speedometer; silk mohair top with dust cover; Turkish upholstered cushions; Timken front axle bearings; gauges on the dash to show air pressure and oil pressure; gauge in gasoline tank showing amount of gasoline it contains; and a portable electric lamp which also illuminates the instruments on the dash.

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

	Motor	Wheel Base	Prices F. O. B. Racine
7 passenger Six	60 H. P. 4 1/4 x 7 in.	144 in.	\$2,500
2 or 5 passenger Six	50 H. P. 4 x 6 in.	132 in.	1,850
2 or 5 passenger Four	40 H. P. 4 1/4 x 7 in.	120 in.	1,500

DEALERS EVERYWHERE.

Mitchell-Lewis Motor Co.

Racine, Wisconsin

M. A. Young, 754 Woodward Ave.,
Detroit, Michigan.

Dual Purpose Cattle.

It does not require the cutting words of a severe critic to remind the observing people of the present time, that as to the producing beef of good quality by the general farmer, Michigan is in a sorry condition. A glance at the stock sent forward from the different parts of the state on market days, will convince the average on-looker that fairly good specimens of beef cattle are scarce. A real good lot of bullocks would stand out like "apples of gold in pictures of silver." Or it might be truthfully said that the good ones would be as apples of gold in a background of baser metals than silver. There is a profusion of pinch-backed, potbellied, weasel waisted cattle, that give but small, if any, profit to the producers, and little satisfaction to the consumers who have a taste for palatable, juicy and nutritious beef.

Another feature of the meat business is exasperating. Instead of meat dealers in the cities, villages and hamlets getting their supplies of meats from farmers near them, they are supplied from large dealers in our great slaughter house centers. Consumers are compelled to pay a profit to the shippers who send the stock to market, the cost of transportation to and from the market, and a profit to the slaughterer and finally to the distributor. It is not strange that the prices to the farmers have not been high for the great bulk of the cattle sent forward, and that prices are high to the consumers. There are too many getting a living between the producers and the consumers.

Crusade Against Farmer's Beef Cattle.

For more than a quarter of a century the trend of the cattle raising business has been of a nature that has destroyed beef production among the farmers, instead of encouraging the breeding from the most profitable specimens of farmers' cattle. During the sixties and seventies there was an interest in good cattle nurtured by the agricultural press as well as the meat dealers and the consumers. When it began to look as though good, profitable cattle for the general farmers to raise were going to be universally sought for, the bewitching and deceptive claims of that foe to good sense, the goddess of fashion, entered the breeders' arena and begun the destruction of one of the noblest and best breeds of cattle, the Shorthorns, that was ever originated. By one fell swoop of her magic wand the beautiful roans, red and whites were eliminated, and the red craze became rampant. The fashion in blood lines, or "unfashionable crosses," helped to eliminate still another very useful and profitable class of cattle. Then, to keep pace with breeders of the great west who had had to compete with the early maturing Polled Angus, the pony-built Scotch Shorthorns were allowed to supplant the noble cattle of the old sort that were good at the milk pail and the butcher's block.

The idea of dual purpose cattle has been pretty nearly eliminated from the minds of the cattle breeders of the state. The dairy business has had a rapid growth, but has not rendered any material aid toward the production of a good class of beef cattle needed to meet the demands of the increasing numbers of consumers. In fact, the dairymen are not raising calves enough to maintain the needed numbers in their herds; they too often go outside to replenish their stock of dairy cattle. The question naturally arises, what should be done?

A Revival of Interest Needed.

The fact that a large proportion of the rich herbage in the shape of grasses that spring up in many of the by-places in our state, goes to waste for the want of a good class of cattle to consume it and convert it into juicy and palatable beef, is pretty well known. If, by chance, a thick-skinned, heavy-boned, narrow-headed, narrow-rumped, "lathy" specimen of a mongrel, bred to retain all the undesirable qualities of the inferior breeds, wanders over the verdant fields, the herbage is only partially utilized, for it is not in that class of cattle to make more than just fair returns of inferior meat for the feed consumed, and much is wasted—going no man can tell where, for it is not saved in bones or meat, fat or lean.

Looked at from the viewpoint of an economist, it seems as though vigorous efforts should be made to revive, among the general farmers, an interest in good cattle that will yield well, both at the milk pail and the butcher's block. Such are not a mere dream, but a reality.

While there may not be enough to supply all who need them at present, there can be found sires among the milking Shorthorns to begin with, and many a community can be made richer in the dollars that they can gather, and the fertility which they can add to the soil. The grades of such pure-bred sires can bring forward a fine conformation, or bloom of beauty, and a wealth of flesh that will not only bring profit to the producer, but a toothsome quality of meat that will satisfy the consumer.

Every farmer, not a professional dairyman, breeder or feeder, should awaken to the opportunities which confront him. All need some cows to supply the family with milk, cream and butter for domestic consumption, and some butter to sell to add to the general income of the farm, and aid in securing the necessary comforts of life. By using a pure-bred sire from dual purpose stock, the bull calves can be made steers of and fattened for market at an early age, and the heifers that possess the necessary size and general characteristics which commend them as being fitted to be retained in the herd as cows, may be used to replace the inferior cows in the herd, and the general character of the herd can be gradually improved. The business of milk production and beef production can be carried on at the same time, and a liberal income realized from both sources.

Wayne Co.

N. A. CLAPP.

FATTENING HORSES FOR MARKET.

Among the horse dealers in the big cities fattening is considered a legitimate operation. Some of these men have regular feeding stations to which they send thin horses picked up at a low price. In Chicago many horses change hands for the purpose, the buyers fattening them for the eastern market.

The cost of feeding is quite large, some of the feeders reckoning it at not less than \$10 per month. Some of them get hold of poor feeders sometimes. Of course, such horses are handled at a loss. The desirable animal is the horse that is thin but young; for that horse generally has a well-developed digestive system and will lay on fat rapidly if properly fed.

The men who make a business of fattening horses expect, of course, to pick up their equine material at a low price. The farmer sending a thin horse to market need not expect to obtain much for him, for these men must buy low in order to make a good profit off their operations. The man who has a horse to sell should, therefore, see that his animal goes to market in sufficient form to sell regularly, rather than be picked up as a "feeder."

The horse that is being fitted for the market should have good teeth. Experienced horse fitters examine the horses' teeth and where needed have them filed or "floated." In some cases they have a veterinarian extract decayed teeth. A buyer of thin horses says that it is remarkable how many horses there are that are thin in flesh on account of the poor condition of their teeth. Such horses improve very rapidly when once the trouble with the teeth has been remedied.

When feeding horses for the purpose of fattening it should be remembered that the stomach of the animal is small in proportion to his size. The horse cannot take at one time one-fourth as much into his stomach as can a steer of the same age. The horse that is being fed to get into condition should therefore be fed a little at a time, but frequently. It should also be kept in mind that it is a very easy matter to feed a horse too much corn fodder or other roughage.

Long time between feedings is not desirable. The regulation of the feeding hours is a matter of considerable importance. The horse adapts himself to receive food at a certain time, and if he is disappointed by a failure to receive his ration at the expected time he is worried thereby.

The appetite of each horse should be carefully studied and the ration regulated accordingly. Also the ration should be well balanced for best results.

Illinois.

W. H. UNDERWOOD.

Hog cholera is raging in Minnesota, and the experiment station officials advise farmers whose hogs have become affected to cut down their feed to the lowest amount that will keep them reasonably strong.

BROOD SOW MANAGEMENT.

To produce strong healthy litters it is not only necessary that the sows be fed correctly upon feeds that furnish sufficient muscle, bone and energy-making materials, but that they be handled wisely during the period of gestation.

The mother sow needs food for three important purposes; first, for her own maintenance; second, for growth on her own body; and third, for the nourishment of the fetal pigs. Corn lacks muscle and bone formers and in addition is too concentrated (not bulky enough for breeding swine). Tankage, meat meal, linseed oil meal, skim-milk, buttermilk, bran, oats, middlings, shorts, soy beans, clover and alfalfa are the logical supplements to corn in the middle west. At the Iowa Station we have found that most excellent rations for gilts carrying litters are:

1. Corn 88 to 90 per cent; meat meal or tankage containing 60 per cent protein, 10 or 12 per cent.

2. Corn, 75 per cent; finely cut clover, or alfalfa, 25 per cent.

3. Corn, 80 per cent; oats, chopped clover or alfalfa, 10 per cent; meat meal or tankage, 10 per cent.

For old sows the proportion of meat meal or tankage can be cut down practically one-third to two-fifths and still get excellent results.

Stronger, healthier litters having more hair, more color and more bone have been the result whenever we added a suitable protein and ash supplement to corn. When we selected our supplements wisely we also got cheaper pigs. At present prices for purchased protein and ash supplements, meat meal and tankage are our cheapest sources.

Above all things, excepting the food supply only, an abundance of exercise is most important. All classes of pregnant animals do well only when abundant opportunity for exercise is allowed. The general tone and vigor of the mother is reflected in the offspring; the better the general health and condition of the dam the stronger and more vigorous the young. Range on pasture is perhaps the best of all. Allow the sows to follow cattle for awhile but be sure to remove them when they tend to become clumsy and heavy. Scatter the feed over the ground, such as sheaf oats, soy bean hay, etc., and let the sows gather it. Feed on the side of the field opposite the sleeping bunks. Allow hay in racks, the eating at which is conducive to light exercise. Shut the sows from the houses in the middle of the day rather than allow them to huddle up and snooze peaceably. Schemes to induce exercise cost little, yet the returns are considerable.

Warmth, dryness, ventilation and sunlight are the essentials of an ideal hog house. Such conducive conditions can be secured with a little forethought. Good dry bedding is needed and to be kept dry must be changed regularly. Arrange the houses so as to avoid draughts and heavy winds, preferably placing them in sheltered nooks. Although the hog can stand considerable cold yet the breeding hog does not have the fat which should ordinarily keep the fat hog warm, neither does the breeding sow have such a warm coat as the horse, for instance, that roughs it. We have found in our experience that sensible shelter saves many cents.

We hog men cannot afford to feed our hard-earned corn and other grains to lice and worms. Crude oil is cheap, costs not more than \$4.00 a barrel, is easily applied and does the lice up brown and black, hence why hesitate. It kills the nits at one application and can be used in winter because it is an oil and does not evaporate. An old broom, a sprinkling can and a couple of hurdles handled by two active men is sufficient equipment for ridding the farm of hog lice.

Worms are a serious drawback. I know of no better remedy than santonin, six grains; calomel, four grains to 100 pounds of hog given once on an empty (12 hours off feed) stomach and repeated in 10 days if necessary. It is not well to use any worm medicine upon sows within a couple of months of farrow, because all pregnant animals in advanced stages have some tendency to abort when given a strong laxative. The thing to do is to tend to the worms in time.

Laxativeness of the bowels is highly desirable as costiveness is a menace. Plenty of exercise, combined with laxative feeds, such as tankage, oil meal, bran, alfalfa, hay, etc., will largely solve the problem. However, if it does not, a week before farrowing, an emergency remedy of an ounce of epsom salts per 100 pounds of hog will help considerably.

The essentials of brood sow management may be briefly summarized: Provide suitable food, but do not overfeed. Emphasize the protein and ash constituents. Keep the sow growing nicely but do not fatten. Devise schemes to induce exercise. A dry, warm, well ventilated bed in a sheltered house is in order. Kill off the lice and drive out the worms because you cannot afford to feed parasites. Avoid constipation by natural feeding management but resort to emergencies if necessary. Practice gentleness with your brood sows, speak kindly in their presence, recalling always that good treatment bespeaks contentment with its corresponding profits.

Iowa Exp. Sta.

J. M. EVVARD.

SALT FOR HOGS.

I noticed an article from St. Clair county on feeding salt to hogs, which very much interested me, and now I want to tell my experience on one single hog that I once raised and fed it salt, a single handful two or three times a week, from the time it weighed 70 lbs. until it was butchered. I also gave it stock food and all it wanted to eat and drink besides, and it would eat a lump of salt as large as a walnut as though it was sugar. I kept account of all this hog eat as I had to buy its food, and at the time I killed it this hog made me 55 per cent on my investment, and it was seven months old the day we killed it, it weighed 381 lbs. I think hogs should be salted two or three times a week, the same as other stock, then I don't think it will hurt them but do them lots of good.

Lenawee Co.

E. B. SMITH.

LIVE STOCK NEWS.

The recent widely published estimate of a well-informed statistician that the seven surplus corn states held four million fewer hogs than a year ago has acted as a powerful factor in hardening prices for hogs in the markets of the country, and even the big Chicago packers have bought hogs in a way that showed plainly their eagerness to secure all the raw material possible. To maintain their stocks of lard and cured hog meats at such a time has been simply impossible, for in addition to the hog shortage, they are confronted with the necessity of providing for the biggest fresh meat consumption ever witnessed. The Chicago market for hogs has been the center of a large eastern shipping demand, the choicer class of light and medium-weight hogs being usually wanted for this purpose, and these have sold at the highest prices paid for anything in the hog line. Hogs are coming to market largely of medium weight, recent receipts in the Chicago market having averaged around 226 lbs., and the average stockman does not care to hold his swine after reaching medium size, notwithstanding prospects are everywhere regarded as excellent for the future market. Farmers who have sufficient feed and hogs to follow their cattle are fortunate, hogs selling at much higher prices than were paid a year ago, while feed of all kinds is very much cheaper. For some weeks past farmers have been disposed to let their hogs go when they could sell for around \$7 per 100 lbs.

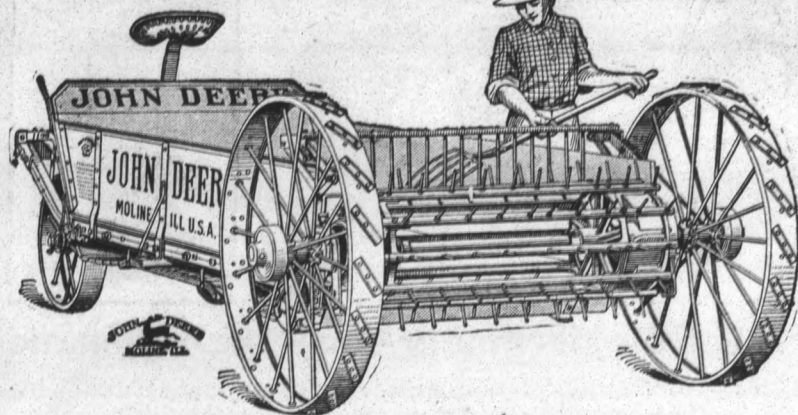
The remarkably mild, pleasant, open winter has been the means of a great saving of feed on the farms of the country, and the corn surplus is thereby materially increased. A recent St. Louis message said: "In summing up the many causes of lessened corn consumption an important factor is the high quality of all roughness. Live stock is requiring much less grain and is keeping fat on clover and cowpeas and hay. I am wintering horses that are fat on hay and four ears of corn at a feed, that would usually require eight ears of corn."

A prominent live stock commission of Chicago is advising its country patrons to buy good quality feeding steers weighing from 950 to 1100 lbs. from the middle of February to the first of March, providing these cattle come on the market as freely as they promise. They could be fed from 75 to 100 days to make money. In the opinion of the firm, market prospects are favorable for the beef cattle trade next May, June and July. Furthermore, they believe, the August and September markets promise to be all right, it being an assured fact that the northwest will have a big shortage of beef cattle for the autumn trade. The indications are that warmed-up cattle will come to market in large volume for four or five weeks more, but after that reduced supplies are looked for.

For years the packers have been making serious ravages in the beef supply by slaughtering cattle of only feeder quality, their object being to secure plenty of cheap beef, and they are still doing this, thereby still further lowering the chances for getting a good supply of choice beefs in the future, bidding higher prices in many cases than stockmen feel able to pay. For the present year a shortage of cattle is inevitable. Fewer thin cattle went to feeding districts during the last six months than usual, with a large percentage of young cattle and cows. The fancy prices for finished steers seen last year may not be repeated this year, but the rank and file of the steers will undoubtedly sell high. It requires the best part of three years to produce a steer, while raising supplies of hogs or sheep can be done in a short time.

John Deere Spreader

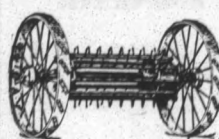
The Spreader with the Beater on the Axle on the Axle

Revolutionizing the Spreader Business
Simplest and Strongest Spreader

On the John Deere Spreader, the Spreader with the Beater on the Axle, two hundred working parts that continually give trouble, are done away with. This spreader is so simple and strong that it does not get out of order. It has no clutches, no chains, no adjustments.

The John Deere Spreader is the greatest improvement in spreaders since their invention. It is as much in advance of ordinary spreaders as the self-binder was over the old reaper.

The Beater on the Axle



The Beater on the Axle

Mounting the beater on the axle makes the John Deere Spreader possible. This feature is fully patented. You cannot get it on any other spreader. The beater on the axle does away with all chains and clutches. It puts the strain and stress of spreading on the main axle—where it belongs—not on the sides of the box or the frame of the spreader.

Mounting the beater on the axle makes the John Deere Spreader easy to load—low down.

Only "Hip-High"



Easy to Load

Sides of the John Deere Spreaders are only "hip-high." The first three feet you lift a fork of manure are easiest of all. From there on to the top of the ordinary spreader is hard work.

You lift manure only three feet with the John Deere Spreader. You always see into the spreader, just

where each forkful is needed. Wheels do not interfere with loading.

Few Parts

There are no clutches to get out of order, no chains to give trouble, and no adjustments to be made on the John Deere Spreader. On old style spreaders, ten to twenty adjustments are necessary before they will work at all. Any one of these, wrongly made, might put the spreader out of business.



Out of Gear

To start spreading with a John Deere Spreader, move the lever at the driver's right back until the finger or dog meets the large stop at the rear of the machine—there is no clutch.

The John Deere Spreader does not get out of order. It is always ready for use.

Roller Bearings

Roller bearings, few working parts, the center of the load comparatively near the team and the weight distributed over four wheels, make the John Deere Spreader light draft. There are four sets of roller bearings, two between the main axle and the beater, and two in the front wheels.



Roller Bearing John Deere Spreader light draft. There are four sets of roller bearings, two between the main axle and the beater, and two in the front wheels.

Bridge-Like Construction

The substantial steel frame on John Deere Spreaders has high-carbon structural steel side sills. Like modern railway bridges it is built on the best known principles of steel construction.



Built Like a Steel Bridge

It is securely bolted, insuring rigidity and perfect alignment, even after years of use.

Valuable Spreader Book Free—Get this book at once. It contains reasons for using manure—how to apply it to the land, how to store it, and a description of the John Deere Spreader, the Spreader with the Beater on the Axle. Ask us for this book as Package No. Y 5

John Deere Plow Co., Moline, Illinois

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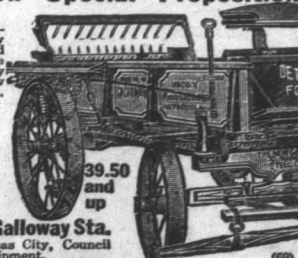
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I will save you \$25 to \$50 by cutting out middlemen's profits on a spreader that will work better and outlast any spreader built. A low-down, easy-to-load, light-draft machine covered by eleven patents protecting our big new improvements and making it the only spreader of its kind in the world. Backed by a \$25,000 bond and \$5,000 challenge offer no other manufacturer dares to make you. My big illustrated catalog tells all about the Galloway. Write for it today, and I will send you my new starting 1913 special proposition, telling you how you can get your spreader wholly correctly free. No work or canvassing to do. And I will send you my big book

"A Streak of Gold" FREE

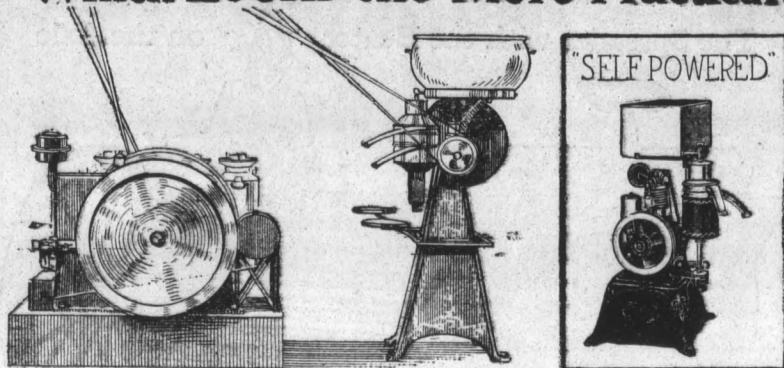
This book is worth many dollars to any man; regular price, \$1.00. It is free for just writing me today. It tells how to care for the manure, how to spread it, how to treat your soil, and how to make the manure-pile pay for your spreader. Write me, without fail, today.

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The "AUTOMATIC" is self-powered; engine and separator in one. The two are not loosely connected; they are solidly combined. The little engine is compactly built into the separator itself, and is so nicely adjusted that the bowl spins at high, even speed *without a trace of vibration*. This is a very different matter from the makeshift of hitching a hand power separator to any old gasoline engine. The two are ill suited. The explosive impulses of detached gasoline power are certain to jar and rack so delicate a piece of mechanism as a hand and gear driven separator. No manufacturer would recommend such a makeshift if he were not hard up against "AUTOMATIC" competition. He knows that hand power is doomed. A dairyman with eight or more cows to milk won't put up with the drudgery and expense of cranking a separator by hand—not a day longer than he has to.

"The 1913" Cream Automatic Separator

requires no cranking. It saves time and labor. Skims faster than ten men can milk. When the milking is done, skimming is done, Hand power varies. The "AUTOMATIC" skims even—absolutely even; its speed is maintained without variation. The result is more butter fat and smoother cream. No hand cranked machine can possibly skim so close. The engine is highly efficient and very dependable. Starts with the pulling of a cord. Can't kick. Runs continuously for hours without the slightest attention. Is protected against freezing or choking or balking by an automatic fuel feed and magneto equipment.

If you are milking eight to ten cows or more you ought to know about the "AUTOMATIC" Cream Separator. See it in actual operation. Then you won't go on cranking a hand machine any longer. You cannot afford to. By writing you can obtain full information by mail. We will tell you where you can see the machine in operation—of what dealer you can buy one. Give us the name of your dealer. Ask for Catalog No. 13.

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This year's Saginaw is simply a wonder! Strong as a City Skyscraper. Never a chance of the most terrific storm even budging it. It cannot blow down, nor twist, nor warp, nor collapse, nor cave in, nor tilt. Even when empty, it stands as immovable and strong as the great Rock of Gibraltar. And so scientifically is the Saginaw made that your Silage is always bright and clean clear to the edges, next to the wall. Five mammoth factories are now kept busy day and night making Saginaw Silos. The Saginaw is four times more popular than any other. Last season, in one day 587 Saginaws were sold.

Write! Rush a postal to us at once and you will soon have before your eyes the fascinating story of the World's Greatest Silo. No Dairyman or Stockman can afford to miss such a treat. Mail just a postal now, saying you want the new Saginaw Silo Book No. 42, and it will be sent you by return mail.

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Dairy.

CONDUCTED BY COLON C. LILLIE.

HOW TO VENTILATE A COW STABLE.

I would like advice as to how best to ventilate my cow barn. This cow barn is a lean-to on south side of main barn and is 40 ft. long, 14 ft. wide and 8 ft. high, with floor above stable and straw being kept above cows for bedding. This stable has a door on east end to let cows out and into stable, also small door at end of feed alley in front of cows. The cows stand in stable facing the north. There is a door at west end of feed alley entering the silo, also a door in south side used when cleaning out stable. There is a large door on north side of cow stable directly in front of driveway in barn through which we feed the cows, and is left open at night; this is the only ventilation there is. There are four doors on south side of stable. I would like the most practical way of ventilation described fully in The Farmer.

Calhoun Co.

E. O. P.

The question of ventilation is a simple one, it simply means a change of air. When air has once been breathed by animals it becomes unfit to breathe again, and the problem is to get in fresh air in exchange for this air which has been already breathed. You can do this by letting windows down at the top, you can do it by opening the door, you can do it by the hay chute which opens just through the ceiling of the stable, but in all of these ways, while you produce a change of air in the stable you are doing it at the expense of temperature; that is, you cool the stable at the same time. The troublesome thing about ventilation is that the need of ventilation comes at the same time when we need to keep the stable warm. In other words, it is a cold weather problem. We don't have to figure about ventilation in the summer time when we can keep the windows and the doors open, which provide an exchange of air and good ventilation. But when it comes cold weather and we have to shut up the stable in order to keep the cows comfortable so far as temperature is concerned then we have to provide some way of changing the air in the stable without reducing the temperature, and there is where the problem comes.

It don't make any difference about how many doors or windows there are in a stable, about ventilating it. They really haven't anything to do with the problem. You want a stable tight so that you can control the air current. If the floor over the cows isn't tight no system of ventilation will work properly. This ought to be double boarded with the cracks mis-matched. Then it would be better to have stable sealed besides. And the stable ought to be double boarded with a dead-air space in the wall. The doors and the windows ought to fit tight. This is the only way that you can control your temperature and the only way that you can control your ventilation. You have got to have a tight barn to keep it warm in cold weather. Then if you open the windows to get a change of air you cool it off, and so there isn't any particular use in making the barn tight.

Prof. King, of the Wisconsin Experiment Station, solved this problem. He realized that if you made an opening through the wall of the stable up next to the ceiling the warm air up next to the ceiling would rush out and cold air would rush in. This would give a change of air but it would lower the temperature of the stable. He, however, conceived that if he would box this hole in, as it were, and extend the box down on the outside of the stable to within a foot of the ground that the cold air could come up this box and enter the stable but the warm air couldn't go out, since it is lighter than the cold air and could not pass down through the column of cold air. Now this solved the problem of getting pure cold air from the outside into the stable without allowing the warm air of the stable to go out. These openings we call pure air intakes. You want a number of them scattered all around the barn. In fact, you want enough of them so that if the wind blows hard from one direction on a cold night that you can shut up the ventilators on that side and still have enough openings on the remaining sides of the stable to furnish all the pure air that you need for your cows.

Now that you have succeeded in getting pure air into the stable you must draw the impure air out, and Prof. King does this by going to any convenient place in the stable and building a chimney,

nothing more or less than a chimney. We call it a ventilating shaft. But it is a chimney that opens at the bottom. It is built up through the stable, up through the storage part of the barn and out the roof, and the taller it is above the roof the better, because the taller a chimney is the better it will draw, and this wants to be made tight for the same reason that the chimney should be tight—if leaky it does not have a good draft. It should be double boarded with tar paper between. Now the pure air enters the intakes up next to the ceiling and gradually diffuses with the warm air and this forces a circulation and the impure cold air from the floor of the stable goes along to the ventilating shaft, enters this and passes off outdoors. Here we have a continual circulation of air or exchange of air and good ventilation and at the same time we have retained the warm air of the stable and not allowed the temperature of the stable to get down too low for the comfort of the cow.

BEAN MEAL FOR DAIRY COWS.

I would like a balanced ration for my Holstein cows weighing from 1,000 to 1,200 lbs. I have the following feed on hand: Good corn silage, clover hay, wheat bran and buckwheat bran, and middlings. Corn meal is \$22 per ton, cottonseed meal is \$33 per ton, dry brewers' grain is \$22 per ton, bean meal is \$15, and ground oats \$22 per ton.

Isabella Co.

P. J. McR.

You can make a splendid ration out of clover hay and corn silage by simply feeding wheat bran and buckwheat bran and middlings. You wouldn't need anything better if you have plenty of these. But on the other hand if you can get bean meal as cheap as you say I think it would pay to encourage the cows to eat a portion of bean meal at least. I am well aware that bean meal is not used very much as a dairy food but I see no reason why it shouldn't be encouraged. We are bound to have a large quantity of cull beans in this state every year, and they ought to be utilized to the best advantage. If we can get our cows so that they will eat bean meal it makes a splendid source of cheap protein. I don't know why bean meal isn't just as good for food as pea meal, and if we can gradually get the cows to eating the bean meal it will save very much in the ration, and therefore I would suggest that you, for a grain ration, use 100 lbs. of bean meal, 200 lbs. of buckwheat middlings and bran, and 100 lbs. of wheat bran, or in that proportion. Mix together thoroughly and feed a sufficient quantity to enable the cows to produce maximum flows of milk. If you want to encourage them to do their very best feed a pound of grain per day for every pound of butter-fat produced in a week. In this way you can get a good ration without buying any very expensive feed. Give them all the clover hay they will eat up clean every day, and also all the good corn silage they will eat without wasting.

RATION WITH CORN FODDER, CORN-AND-COB MEAL AND BUCKWHEAT MIDDINGS.

Will you kindly tell me how to compound an economical balanced ration for cows? The roughage is corn fodder. I have corn and oat meal and buckwheat bran and middlings. Is the buckwheat as good as anything I could get? Also tell me how to balance a ration with one feed a day of clover.

Van Buren Co.

S. H. M.

This ration is deficient in protein and it lacks variety, especially in the roughage. Corn fodder makes a very good roughage as a part of the ration but when you attempt to feed nothing but corn fodder it doesn't give the cow a fair show. There isn't variety enough. It would make a much better ration to have one feed a day of clover hay, but even with one feed a day of clover hay and one feed of corn fodder you could not balance this ration very well with the corn-and-cob meal and buckwheat middlings. Unless you fed quite heavily of the buckwheat middlings you would hardly get a sufficient amount of protein. I would suggest that you add a feed of clover hay. Give the cows all the clover they will eat up clean once a day and all the corn fodder they will eat up fairly clean once a day. This will do very well for roughage. Then mix corn-and-cob meal and buckwheat middlings and wheat bran, equal parts by weight, and feed as many pounds per day to each cow as she produces pounds of butter-fat in a week. At first begin gradually by feeding less than the amount indicated by the above rule and then gradually increase the quantity until the cows are on a full grain ration.

DAIRY FARMER'S QUESTIONS ANSWERED.

I have been reading so much about the balanced ration for dairy cows that I want to be sure if I have it right. When I put up my silo I was told to simply feed cottonseed meal in connection with the corn silage. I am now feeding wheat bran with the meal, mixed together equal parts by measure with the corn silage. Then I feed mixed hay in the forenoon and afternoon and cut corn fodder at noon. Now am I feeding the right kind of feed in the right kind of a way to get best results?

Will the following four-year rotation improve my soil? Corn, oats, wheat and clover? Where should the stable manure be applied to top-dress the wheat in winter or put on the clover sod for corn? Will alfalfa grow successfully on self-drained clay soil that is fertile, with a hard subsoil, the top soil being 12 to 14 inches deep and very sticky.

Allegan Co.

T. W. K.

Good dairy cows will do very well on corn silage, good mixed hay, and corn fodder for roughage with two pounds of cottonseed meal per day fed on the corn silage. If they are large cows this is hardly enough grain so that they will give maximum yields. Small cows could get along very nicely with this. Yet I would prefer to feed something besides the cottonseed meal, and personally I would object to mixing cottonseed meal with wheat bran half and half and then feeding it, because I would be afraid that it wouldn't always be mixed thoroughly and that I would feed more cottonseed meal to some cows at certain times than they ought to get. I don't think that any cow ought to have over two pounds of cottonseed meal a day. This should be the limit, and if I fed cottonseed meal I would feed it alone so that I knew just exactly how much I was feeding every time. The principle, however, is right. That is, to feed a grain ration that is rich in protein to help balance up the carbohydrates in the corn silage. If you want to feed cottonseed meal then I would feed that separately once a day, giving two pounds to the fresh cows, and making the balance of the ration bran or corn meal, using your own judgment as to the amount of grain feed to use. If you want cows to do their very best you should feed each cow about as many pounds of grain ration per day as she produces pounds of butter-fat in a week.

A Crop Rotation.

A rotation of crops does not increase the fertility of the soil. It rather increases the yield of the crops. There is no way you can figure it out that by changing the crops on the soil that it would add anything to the soil by doing it, but you can figure out that you can get better yields, and it is better business management to have a rotation of crops than it would be to grow one crop in a rotation. If you have a four-year rotation of crops and feed all of the roughage to live stock, carefully save this manure and put it back onto the land, by the addition of a very little extra plant food in the form of commercial fertilizer you can keep up your land in crop-producing power and in fact increase it, and at the same time raise profitable crops.

Disposing of the Manure.

As to whether it will pay best to put the stable manure as a top-dressing on the wheat or put it on the clover sod to be plowed under for corn, is largely a matter of opinion and conjecture. You will get good results either way. If you put it on the wheat it will increase the yield of wheat and it will practically assure a splendid seeding of clover that follows the wheat. On the other hand, if you put it on the clover sod it will practically assure a good corn crop. I think you should use the system here that works out best in your plan of farm management and make no particular mistake. One trouble with top-dressing wheat is that many times during the winter the wheat land is not in condition to drive on, and one don't like to cut up the land. Then again, if there is plenty of snow it is difficult to spread it evenly, and where you are top-dressing wheat it would be possible to put on so much that the wheat would lodge down. I have thought this matter over carefully for my own farm business and believe, taking everything into consideration, including the labor problem, that I get as good, or better, results by putting the stable manure on land that is to be plowed down for corn the next spring. Of course, I want to raise big crops of ensilage corn because that is one of the basic foods of the farm dairy.

Alfalfa on Clay.

Alfalfa will do just as well upon clay as it will on sand, sometimes I think better. On one clay knoll in one field I get a better growth of alfalfa than I do on

sand in the same field, and on one particular side hill which is nothing more or less than a regular clay bank grows the nicest alfalfa that I ever say growing anywhere. Here the clay comes right out to the top of the ground, there is no top soil, yet those alfalfa roots go right down into that solid clay. But you can't grow alfalfa on flat clay land that holds moisture without first tile draining it. Alfalfa won't grow with wet feet. This clay bank that I speak about has plenty of natural drainage because at the foot of the bank, or side hill, is a tile drain, and it is well drained, and so all clay must be if you want to grow alfalfa. When it is properly drained alfalfa thrives on clay because most all of our clay soil in this country is rich in carbonate of lime.

WHAT FEEDS TO BUY WITH CLOVER HAY AND CORN FODDER.

What feeds can I buy to get a balanced ration for milch cows? I have clover hay, shredded cornstalks for roughage, and corn meal and peas and oats, mostly oats. Also some mangels.

Ottawa Co.

N. DeW.

With corn meal and peas and oats you have a pretty good start for a balanced ration where you have clover hay to feed for roughage. I would suggest that you feed gluten feed to help out the corn meal and peas and oats, as you say there aren't very many peas with oats, and I would suggest that you mix corn meal, ground peas and oats, and gluten feed equal parts by weight, to make up your ration for the cows. If you want to feed liberally and encourage your cows to do their best, feed as many pounds per day of this feed as they produce pounds of butter-fat in a week. It is an excellent thing to feed a few mangels as a succulent food in the ration. If you haven't enough to last all winter then I would feed only a small amount of mangels once a day and make them last as long as possible so as to get the full value of their succulency. Give them all the clover hay they will eat up clean and the same with corn fodder, only don't insist on the cows eating the corn fodder all up clean, because much of it is not palatable.

SILO INSIDE OF BARN.

I have a barn 34x70 ft., but lack stable room and am now contemplating building a silo. Would it be all right to build the silo at the end and continue the length for a number of feet, with stalls on either side and an alley the entire length? And if the silo is inside would not the staves be as good as the vitrified clay hollow block one? Is there any objection to the silo being inside? It will be much cheaper than the vitrified clay one outside.

Clinton Co.

E. A. C.

My advise is not to put the silo inside of the barn. If you need more stable room build onto the end of the barn, making it longer, so that you have the room desired, and then put the silo outdoors at the end of the barn. Have the chute built between the barn and the silo so that when you open the door it will connect directly with the silo. Place your silo outdoors. You don't want it in the barn. It isn't intended to be in the barn and you will always regret it if you put it there. I know from experience because I have tried it, and nearly spoiled a barn by putting a silo on the inside. A stave silo will last just about as long outdoors as it does on the inside. If it is kept painted on the outside wood is practically indestructible, and it will stand outside as long as your barn will stand.

COTTONSEED MEAL WITH BEAN MEAL AND GROUND OATS.

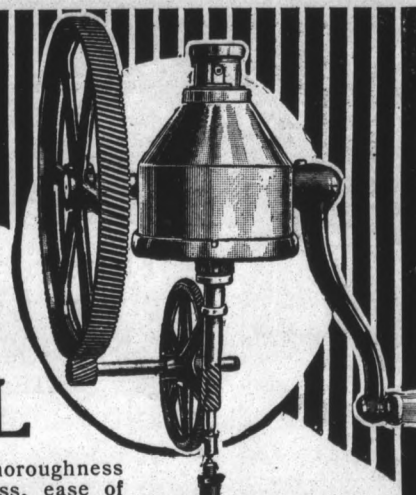
I am feeding oats and beans half and half by weight. How much cottonseed meal should I feed with it for a balanced ration? My rough feed is cornstalks, clover hay and bean pods. I feed silage twice a day.

St. Clair Co.

G. A. G.

If you have no difficulty in getting the cows to eat the bean meal, that is, if they seem to relish it, then I would mix the oats and beans in equal parts by weight, and grind them. Now I don't think anybody ought to feed over two pounds of cottonseed meal a day to a cow, and I would figure upon this. Feed two pounds of cottonseed meal, then a sufficient amount of bean meal and ground oats to give each cow about as many pounds of grain per day as she produces pounds of butter-fat in a week. The balance of the ration is good. There is a splendid variety and they are all good feeds, and cows ought to do well upon them. If the cows do not seem to relish the bean meal then I would mix more oats with the beans, say 200 lbs. of oats to 100 lbs. of beans.

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will increase the net earning of your corn field and reduce the cost of feeding. It will double the profits of your dairy and fatten your feeders at low cost. It will condition all your live stock, make pork at half the cost of ear corn and keep your hens productive when eggs bring top prices. It will eliminate the disagreeable features of winter feeding and cut down the farm pay roll.

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COWS DOING FAIRLY WELL BUT YET NOT SATISFIED.

I have read a number of replies to inquiries relative to a balanced ration for dairy cows, where different kinds of roughage is fed, and as none of these replies fit my case I would like to have Mr. Lillie or someone informed, give me a little advice. I am feeding my cows silage morning and night, all they will eat. Also, bean straw, cornstalks and mixed hay. I feed silage in morning as soon as milking is done. As soon as the cows have cleaned up their silage I feed a liberal amount of bean straw. When they have picked this over pretty well I turn them out for water and feed them a liberal amount of cornstalks in feed rack outside. About four o'clock I put them in the stable and feed them mixed hay, about 25 per cent clover, and then feed silage again after milking. For grain ration I feed each cow six quarts of cooked cull beans and one pound of cottonseed meal night and morning, this is fed after milking and just before feeding silage. Cull beans clean and free from dirt, cost me \$13 per ton, or 39c per bushel. My cows are doing pretty well, but am not satisfied. Think they ought to do better and would like to be advised what change to make in my ration or method of feeding to secure better results.

E. J. R.

Theoretically this ration that Mr. R. is feeding is correct. It is a good one, and it is composed of the most economical kinds of food. If these cows will eat these cooked beans readily and seem to relish them I cannot think of a more economical ration than is being fed. If they eat six quarts of cooked beans and seem to like them it might be that you could do away with the cottonseed meal entirely and get just as good results because beans are rich in protein and there is no use in feeding any more protein than is necessary. This can be determined on trial. Mr. R. says the cows are doing fairly well but he is not satisfied. Now from this description no one can tell anything about whether the cows are doing as well as they ought to or not. The question is, how well are they doing. How much butter-fat on the average are they producing? Perhaps Mr. R. expects more of the cows than he ought to. Perhaps they are doing as well as they could under any conditions. Then again, the question comes up, is this hay which he feeds of good quality, or did it get too ripe, or did it get wet, or something of that sort? All of these things have something to do with the way the cows perform. They not only want the right kind of food but these foods must be in the right condition, that is, they must be palatable. Cows must like them in order to have them do their best.

I suspect that one reason why these cows do not do as well as Mr. R. expects them to is because they are left outdoors too long in the winter time. I believe that if he would put them back into the barn as soon as they all get through drinking, and feed them there, that he would get better results. I believe it is a case of too much exposure in cold weather. This, of course, is supposing that the barn is warm, well lighted and well ventilated. If such is the case I would let them out only long enough to drink and then put them back, and I am of the opinion that they will increase in the flow of milk without any change in the ration.

QUESTIONS ABOUT COTTONSEED MEAL.

1. How many pounds of cottonseed meal can profitably be fed, daily, to breeding cows with a ration consisting of silage night and morning and hay or straw at noon? 2. Is the right feeding of cottonseed meal, say two pounds daily, apt to cause abortion in a healthy Hereford herd? 3. Which will be the most profitable feeding, cottonseed meal at \$32 a ton, or linseed meal at \$45 a ton?

Huron Co. E. C. McC.

The consensus of opinion of men who have been feeding cottonseed meal for a number of years is that no animal ought to receive over two pounds per day. That ought to be the limit.

I do not know whether cottonseed meal can produce abortion or not. I have a notion that in my own herd cottonseed meal tended to produce irregularity in breeding, but this is only a notion. I cannot prove it. Cottonseed meal at the price named will certainly furnish you a pound of digestible protein cheaper than you can get it in oil meal at the price named, but, of course, it isn't all there is to a ration. We have got to have a ration that does the business and keeps the animal in good condition. While I do not believe that two pounds of cottonseed meal per day will injure mature cows after freshening, I would not like to feed any more. Oil meal is a safer feed than cottonseed meal.

A DIFFERENCE It Paid This Man to Change Food.

"What is called 'good living' eventually brought me to a condition quite the reverse of good health," writes a N. Y. merchant.

"Improper eating told on me till my stomach became so weak that food nauseated me, even the lightest and simplest lunch, and I was much depressed after a night of uneasy slumber, unfitting me for business.

"This condition was discouraging, as I could find no way to improve it. Then I saw the advertisement of Grape-Nuts food, and decided to try it, and became delighted with the result.

"For the past three years I have used Grape-Nuts and nothing else for my breakfast and for lunch before retiring. It speedily set my stomach right and I congratulate myself that I have regained my health. There is no greater comfort for a tired man than a lunch of Grape-Nuts. It insures restful sleep, and an awakening in the morning with a feeling of buoyant courage and hopefulness.

"Grape-Nuts has been a boon to my whole family. It has made of our 2-year-old boy, who used to be unable to digest much of anything, a robust, healthy, little rascal weighing 32 pounds. Mankind certainly owes a debt of gratitude to the expert who invented this perfect food." Name given by Postum Co., Battle Creek, Mich. "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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By Keeping them Healthy.

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For sixteen years **Kow-Kure** has been proving its value as a great cow medicine, and thousands of cow owners use it constantly for the prevention and cure of the ills of cows. Unlike a so-called stock food which at best can only stimulate temporarily,

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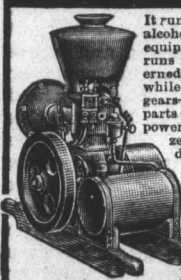
is a remedy of great medicinal value, acting upon the blood, digestion and the organs of regeneration. It repairs run-down systems and enables cows to thrive on nature's food. **Kow-Kure** is a positive cure and preventive for Scouring, Bunches, Red Water, Milk Fever and Lost Appetite; for Abortion, Barrenness and Retained Afterbirth. Sold by most feed dealers and druggists, in 50c and \$1.00 packages. Valuable free publication, "The Cow Book," can be had at your dealer's or from

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Horticulture.

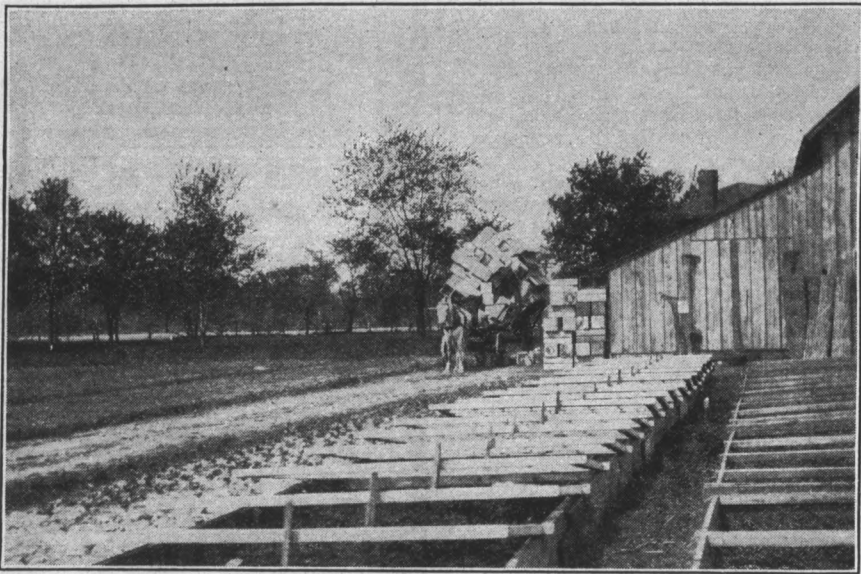
OBSERVATIONS ABOUT HOT-BEDS.

Keeping a sufficient quantity of rich soil out of the reach of Jack Frost is the care of the truck farmer who produces his own plants. Hot-beds and the care of them is getting more and more intelligent attention with each year. Some time ago some of the farmers undertook to dispense with the hot-bed, but every one of them went back to them the next year.

Late in the fall a plot of ground is covered with straw or manure and the covering weighted down all winter. When it is ready to start the beds, the right kind of soil is at hand for the purpose. The farmer also keeps on hand close to the beds a plentiful supply of strawy ma-

apples, pears and quinces, including several promising new seedlings, were exhibited. Collections of apples were received from the following states: Delaware, Colorado, California, Arkansas, Connecticut, Ohio, New York, Wisconsin, Massachusetts, New Jersey, Montana, Vermont, Indiana, Iowa, Pennsylvania, Rhode Island, and Oregon. British Columbia was also represented, and a few choice specimens from the Bureau of Plant Industry of Washington, D. C., were shown.

Michigan apples occupied first place, 17 counties being represented. Field Agent O. K. White, judged the Michigan fruit, and first, second and third prize ribbons were awarded to the best county collection of varieties, and the best single plate



Illustrating a Convenient Method of Ventilating Hot-bed.

nure, and he watches the weather close enough to cover the entire bed, wood frame and all, when there is danger of freezing.

Some of the farmers have been able to utilize the old windows taken from wrecked buildings in Chicago for hot-bed sash. Here and there sash of the right length are to be had at advantageous prices.

Hot-beds should not be too wide. A little less than twice the length of the average human arm, so that the center of the bed may be reached from either side is the popular width.

The accompanying picture shows some beds opened to admit warm air. The sticks holding up the sash have notches so that the sash may be held up at different distances from their resting place on the siding. The man with the team is unloading old orange boxes to be used in handling spinach.

Illinois.

J. L. GRAFF.

MICHIGAN AGRICULTURAL COLLEGE FRUIT AND FLOWER SHOW.

The Fifth Annual Fruit and Flower Show of the Michigan Agricultural College was held on Friday and Saturday afternoons, January 24-25, in the pavilion of the Agricultural Building.

The show is held under the auspices of the Horticultural Club, and is managed by the senior members of the organization. Each year, since the inauguration of the show in 1909, it has grown in size and importance. The first three shows were held in the laboratory of the Horticultural Building; last year larger quarters were needed, and the show was held in one of the larger laboratories. So great has the show grown in magnitude and popularity, that in order to have ample room for the exhibits this year, it was necessary to utilize a large part of the pavilion of the Agricultural Building.

From the moment that the doors were opened, Friday afternoon, large crowds of interested visitors kept the members in charge busy explaining the varied features of the exhibit. The fact, that not only students, but people from the vicinity of Lansing and nearby towns were among the visitors, proves that the merits of the show are being appreciated and are becoming greater in the opinion of the public.

The collection of fruit was large and varied. Over 150 identified varieties of

choice of all varieties. For the best collection of varieties, Allegan county was given first place; Newaygo, second, and Grand Traverse, third. The Canada Red was given the choice over all other varieties. A plate of this variety from David McCann, of Van Buren county, was given first place; J. G. France, of Calhoun, receiving second, and Kent third.

No prize ribbons were awarded for the state collections, other than Michigan. The state collections, as a whole, were exceptionally good. Those from Ohio, Delaware, Connecticut and Oregon were certainly worthy of mention.

The New York State Experiment Station again sent an interesting exhibit of apple crosses. These apples come from trees of known parentage, and are the result of experimental work in apple breeding, which was started by the experiment station about 12 years ago. A large number of the crosses were shown with apples of the parent tree. None of the crosses seem to carry with them quality characteristics, yet the exhibit was highly instructive to those who were interested in plant breeding.

Considerable interest was centered about a plate of Northern Spys which were said to be the fruit from cions of the original Spy tree. It is known that the variety originated considerably over a century ago, still we can detect but little difference, if any, between the fruit from cions of the original tree, and those far removed. In other words, the fruit has not changed appreciably through propagation during all these years.

Insects and diseases of fruits, tools and material used in pruning and grafting, and the instruments and materials used in pathological work were effectively displayed, creating an unusual interest in this feature of the show. The various methods of pruning and grafting were demonstrated.

The college green houses furnished the plants and cut flowers for the floral display, which was very attractive and greatly enhanced the beauty of the show.

Following the plan of last year, an apple pie contest was held, which was open to all young women of the home economics course. The pies were judged by competent judges, and three prizes were awarded. The first prize was \$5.00 in gold; second, one barrel of apples; third, one bushel of apples. Twenty-four choice apple pies were received as a result of the prizes offered. The first and second



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New and Easy Way**

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Pour a pint of Arsite into 100 gallons of Bordeaux mixture and spray thoroughly. Bordeaux mixture is not necessary if you add 3 or 4 pounds of freshly slaked lime to 100 gallons of water.

Arsite is the most easily applied efficient insecticide made. Arsite sticks to the foliage through even heavy rains and can not injure any plant because it contains absolutely no free arsenic.

Arsite keeps under all conditions, is always ready to use, remains in suspension—does not settle and clog the pump.

Write for complete information and learn the economy of Arsite; and Calite—an insecticide that you can use with just plain water.

If your dealer can not supply you we will sell direct—Arsite, 1/2-pint can, 35c; pint, 65c; Calite, pint can, 30c; quart, 50c.

THE HERRMANN LABORATORIES
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Sole Manufacturers of Herrmann's
Hi-Grade Pure Paris Green

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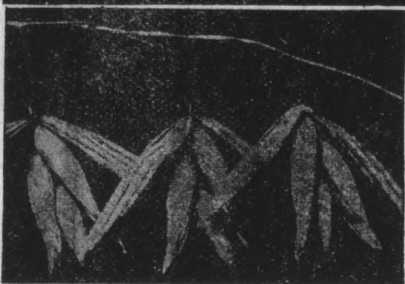
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OATS Reg. Swedish Select and Imp. American. Two heaviest yields from same varieties tested. Also Alfalfa, Clover, Timothy, Barley, Millet, Seed Potatoes and GARDEN SEEDS. High quality, low price. Samples and Catalog Free. **THEO. BURT & SONS, Melrose, Ohio.**

prizes were won by senior girls, and the third by a junior. The pies were auctioned just before the close of the show. Choice fruits and fresh sweet cider were on sale during the show, and the odds and ends of these were auctioned with the pies.

Each afternoon two short illustrated lectures were given by senior horticultural students in the large lecture room on the second floor of the Agricultural Building. "Twenty-year-old Campus Scenes," and "Fruit Growing in Michigan," were the subjects discussed. The lectures were interesting and instructive and were well attended.

As an educational feature there is no better fruit show held in the state. While the quantity of fruit is not as great as that displayed by the larger land and apple shows, there is a large assortment of varieties from various parts of the country. It affords an admirable opportunity for the study of varieties, and the comparison of varieties as grown in the different fruit-growing sections of the state and of the country. It is of additional value, coming as it does at this time of the year, as there are a large number of short course students to whom the show is valuable and interesting.

There are many counties in the state where fruit is grown, and it is hoped that more counties will be represented at future shows. No great effort is made to obtain fine specimens of fruit, the object being to get suitable specimens for comparison and study. The show is proving to be a strong factor in upholding the horticultural interests of the state, and while all due credit must be given to the Horticultural Club, still more credit is due the members of the horticultural department whose enthusiasm and loyalty act as an incentive for greater effort on the part of the students.

Agri. College. R. E. LOREE.

ROOT GALL ON NURSERY STOCK.

Trees having crown or root gall are unsalable, according to the laws of Michigan. Not only does this apply to the tree affected, but to all the trees with it. That is to say, one tree of this kind is sufficient to condemn a carload, if the buyers are so inclined. This is going to an unfair extreme. To refuse good trees because one or two have galls is taking an unjust advantage of the nurserymen, but it can be done.

Crown gall is to be found most anywhere and on a great variety of plants, so that though the trees are free of it when planted it does not follow that they will remain so. The soil may be filled with the disease germs that have come from some native or cultivated plant, in which case the trees are promptly inoculated. Then, too, it must be admitted, according to reports, that trees with galls on them when set out have later been dug, only to find the roots clean. From this it is easy to infer that perhaps too much stress has been laid upon the gall. But no one wants to plant diseased trees, at least not till the causes and effects are better understood than they are at present.

The stringency of the law compels the nurseryman, as a matter of self-defense, to sort his trees very carefully, throwing on the brush heap all trees having such galls as cannot be readily removed without injury to the roots. Galls on the smaller roots can be cut off and the tree be left with a strong root system sufficient to overcome the disease. But with all the care exercised, objectionable trees will frequently escape notice.

It is a good plan for buyers to examine the trees when they are delivered and so settle the matter at once with the nursery company. If the trees are good, except for a few specimens of gall, do not refuse them. If many are bad, settle the matter then and there.

Oakland Co. F. D. WELLS.

KEEPING BEETS FOR TABLE USE.

When we want to use a few of the table beets during the winter months and do not have them in the storage we have put them in among the pile of carrots that is in the stable to feed to the stock. A few scattered around in the carrots make it easy to get them when wanted and to have them fresh all the time. If there are too many of them then they are good feed for the horses and cows as well as the carrots. When they are stored in this way they are always fresh while from the storage they are oftentimes dried and shriveled to some extent.

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Yellow Dent

costs you but forty cents an acre to plant the seed. You will spend a lot of time and labor, fitting your fields for corn, why not plant a seed that has twice won the Michigan State Championship Prize, and be rewarded for your labor with a big yield of this beautiful Early Yellow Dent Corn?

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APPLE TREES—ALL KINDS Trees and plant wanted. **MITCHELL'S NURSERY, Beverly, O.**

What The Fruit Buds Show.

Many farmers have a very vague idea of what the fruit buds show, or perhaps it would be nearer the truth to say that they have no idea what a fruit bud is. Yet the buds can tell the orchardist something of the next season's prospects, even in the early winter, if he but knows how to read the story. And he should know, for with this knowledge he can better plan for the work of the spring. If he finds no buds have set, forwarned he can plant some crop to take the place of the expected fruit. Another reason why he should know is that he may better plan for the marketing. Thrifty growers order baskets, boxes and barrels in the winter, when there is ample time for the hauling from the railroad; and, by studying the buds, it is possible to judge in a general way how many will be needed. Then the spring of an off season is the best time for severe pruning; especially is this true of the peach. By knowing in advance the prospects, a severe heading-in may be done without the loss of the crop, as might be the case if one knew nothing of the story of the buds.

Apple, pear, peach, plum and cherry trees form their fruit buds the previous year, and by knowing the difference between these and the leaf buds it is possible at any time during the winter or early spring to tell if there be any probability of a harvest. Also, one may determine if the buds have been injured by cold weather.

The fruit buds of the peach are very easily distinguished. Upon shoots of the past season's growth, especially if the trees have made a lot of strong new wood, will be noticed lateral buds, usually growing in sets of three, the outside ones large and plump with the middle one small and undeveloped. The large buds are fruit buds and the small one is a leaf bud only. Some shoots may be seen bearing only single buds, these generally on the weaker-growing trees. Such are leaf buds only. When the winter temperature has been so low as to endanger the life of the embryo, one may tell if harm has been done by cutting across the base of the bud and should the undeveloped flower have a small dark spot in the center, it is winter-killed. Live buds should be of a greenish color, but

when the cold has been too severe they appear of a dark brown hue. As the fruit buds of the peach grow on strong wood of the previous season, this emphasizes how important it is that the trees should be in a good growing condition. The strong trees will also withstand the ravages of cold, and come through the winter with a larger percentage of live buds than will the trees of weaker growth.

Apple trees have a different habit of producing their fruit. By closely examining a tree one may not only predict for the coming year, but can also tell if the tree has produced a crop the previous season. Apples are grown at the ends of short branches commonly called fruit spurs. When an apple is picked from a spur a scar is left where the stem separated. Those spurs which have fruited the past year will have scars upon them, and at one side of the scar will be seen a small pointed bud. This is a leaf bud. Other spurs may be found upon the tree bearing the same kind of buds, but which show no fruit scars. All these slender buds will bear leaves only, but upon stronger shoots may be found larger rounded buds and these will be found upon examination to contain embryo flowers and consequently may be expected to produce fruit.

In the fruit-bearing habit of the apple tree may be found the reason for non-bearing and biennial crops, just as we found it in the case of the peach. Old neglected trees have insufficient vigor to produce strong new spurs each season, and the tree that bears every other year devotes all its energies to fruit development one year with the result that no new fruit buds are produced. So we see that if a tree can be kept growing all the time, new spurs of sufficient strength to develop flowers each year may be produced.

The pear produces its fruit in a manner very similar to the apple. The strong terminal buds are generally fruit buds, and the same methods of cultivating, pruning and thinning as advocated for the apple should encourage annual crops. The plum and cherry are more like the peach in their fruit-bearing methods.

New Hampshire. C. H. CHESLEY.

SETTING A STRAWBERRY BED.

When one moves to a place where there is no fruit of any kind, as I have done several times, the first thing to do is to get about establishing a bed of strawberries, for this is the quickest way to get fruit of the best kind. Plants set this spring will bear bountifully the next year, and there is no such thing as a total failure of strawberries.

While the strawberry will do its best on light soil with warm red clay subsoil, it will grow on any land. If the land is wet throw it up in beds and fertilize with plenty of rotten manure. It would have been better to manure a piece of ground last year and put it in some cultivated crop so that it would be clean of weeds with the soil loose, but if you have no such place select the best you have. New ground, either timber or sod, that has been in some other crop for a year in order to kill the grubs, is good for the strawberry.

It would have been better to break the land in the fall, but since this could not be done, the work may be done as early in the spring as it will do to work, and harrowed several times to thoroughly pulverize and pack the soil. Where there is not too much sod new ground will often be found to be the best place for the strawberries. Since the first year is the only time you can apply stable manure on account of weed seed, this should be done at the rate of not less than 20 loads to the acre before the plants are set.

The selection of the plants is of as much importance as the soil where they are to be set. It must be remembered that there are two kinds of plants, which are called perfect and imperfect flowering. It is better to have both kinds, and when the imperfect flowering are set there should be a row of perfect blooming kind every fourth row in order to fertilize and make them productive. The perfect flowering plants will produce alone. If you should select the plants yourself from an old bed, be sure to get those with clean, white roots, as these are the young ones, while those with the dark roots and setting up out of the ground are those which bore fruit last year, and are worthless. It is best to get the plants as near home as possible,

and keep the roots dampened till ready to set in the ground. Bunch the plants evenly, and cut off a little of the tips of the roots with a sharp pair of shears, as well as remove some of the large leaves if the leaf area seems to be out of proportion to the root.

There are three ways of planting. If you have only a few square rods in the garden to devote to strawberries you will probably decide on the matted row, which consists of setting the plants 18 inches or two feet apart in rows three feet apart and letting the runners take half of this space the first year, the balance being kept clean by cultivation. The hedge row is similar except that the row is not allowed to get as much as a foot wide, the runners being kept cut off. The hill system requires more work in cultivation but is more satisfactory in gathering the berries, and probably produces a greater per cent of large fruit. The plants are set two feet apart in rows wide enough to allow cultivation, and none of the runners is allowed to root. This cutting back results in a large thrifty plant a foot or more in diameter with a powerful root system.

When you have decided the distance apart to set the plants lay off rows with a small garden plow or marker, then take a dibble or trowel and make a hole, setting the plant in this with the roots spread out fan-shaped so that the crown of the plant will come even with the top of the ground. If the ground is moist press the dirt to the roots and continue to the next. If the weather is dry put a little water in the hole before pressing the dirt to the roots. If the plants are puddled by keeping moist in a bucket of water into which dirt has been stirred they will rarely need further watering. A convenient way to set strawberry plants is to take the plant in one hand, and when the trowel is thrust into the ground and pulled to one side, set the plant by the side of this implement so that when it is removed the dirt will fall back around the roots of the plant.

I do not set strawberry plants as early in the spring as I would some other plants, as I have found the best time to be May. If it is possible take the plants up with a little dirt adhering to the roots.

H. F. GRINSTEAD.

Be First With Ripe Tomatoes

Stokes' Bonny Best Early Tomato leads all in early ripening, quality, and productiveness. It produces perfect fruit until frost.

"Bonny Best is the best; ten days ahead of Earliana and far better in looks, flavor and crop," reports Long Island R. H. Experiment Station. "Smoothest, most uniform early red," says Prof. Watts, Pennsylvania State College. "Best for forcing," says J. O. Gourley, Ohio Experiment Station.

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Speciosa Seedlings, 8 to 12 in. \$1.75 per 1000

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Clover, Timothy, Alsike, Alfalfa and all kinds of Pure Field Seeds direct from producer to consumer; free from noxious weeds. Ask for samples. A. C. HOYT, & CO., Fostoria, Ohio.

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Food Value of Eggs.

A study of nearly four hundred American dietaries, recently made by the Minnesota College of Agriculture, revealed the fact that meats and fish formed 17.8 per cent by weight of the total food material; eggs 2.1 per cent; dairy products 18.4 per cent; and all animal foods combined formed 38.5 per cent of all foods consumed. Thus over one-third of the food eaten came from animal sources; the remainder from the plant kingdom.

Meats furnish nutrients at a higher cost than that of the same nutrients when obtained from vegetables; but, owing to their pleasing flavor, they will probably remain an important part of the American dietary, at least until their cost becomes prohibitive except to the wealthy. As a substitute for meats eggs are employed with less objection on the part of the consumer than are such vegetable products as beans, macaroni, peas, etc., and, at present market values, a given sum of money will buy more food nutrients in the form of eggs than in most kinds of meat.

Eggs do not differ greatly in composition from meat. The average egg, as purchased, consists of about 11 per cent waste material or shell. The edible portion consists of about 74 per cent water, 13 per cent protein or muscle-building material, 10.5 per cent fat, and one per cent mineral matter.

For comparison, medium fat round steak, as purchased, consists of about 7 per cent waste material, bone, fat, etc. The edible portion consists of 66 per cent water, 20 per cent protein, 14 per cent fat, and 1 per cent mineral matter. Thus round steak contains slightly less refuse and water than eggs, but rather more protein and fat.

WINTER CHICK RAISING.

We have hatched from 2,400 eggs, over 1,200 chicks, and up to the age of four weeks have not lost more than five per cent, 58 chicks, and this, too, in January and February, when all nature is against you. This is an extraordinary good work, and maybe some of your farmer readers would like to know how we have accomplished this.

In the first place, I would like to have it understood that all of these chickens will be disposed of as broilers, when weighing between one and one and a quarter pounds alive. So our one idea was to make them grow as fast as possible, without making them go off their feet and legs, which often happens with winter chickens when fed too heavily.

In the incubation of the eggs we used plenty of fresh air, and much moisture. We sprinkled the floor every day, especially at hatching time. After they were all hatched we would leave them in the incubator another 36 hours, during which time enough fresh air was admitted to prevent them panting. Then they were moved to the brooder, which was previously thoroughly cleaned and disinfected and heated up to 95 degrees. Great care is exercised not to get them chilled while moving from incubator to brooder. We use a covered basket, previously warmed to about 95 degrees, and get them moved as quickly as possible. We place in flocks of 50 chicks, and no more. The first 12 hours in the brooder they are obliged to stay under the hover, without either food or water. When 48 hours old, fresh water with the chill taken off is set before them in small fountains, into which they can not get and wet themselves. Likewise a dish of oyster shell and charcoal, and grit (chick size), is set before them. About 12 hours later they get their first feed, the following mixture: Rolled oats, 3 lbs.; bread crumbs, 3 lbs.; sifted beef scrap, 2 lbs.; bone meal, 1 lb. This is slightly moistened with sour skim-milk and for first four days is fed five times a day. This is fed on low rim pie plates, about two plates for 50 chicks. One thing we always kept in mind, and that was to feed them just a little less than they would have eaten, if they had it, and not, as so many say, to feed all they will eat up clean, because they then eat too much.

From four days to two weeks the grain mixture: Cracked wheat, 3 lbs.; cracked corn, 2 lbs.; pinhead oat meal, 1 lb., is fed in the litter twice a day, and the rolled oats and bread crumb mixture, moistened with sour skim-milk, fed three times a day. In addition to this, they have the following dry mash mixture always before them in self-feeding hoppers: Wheat bran, 3 lbs.; corn meal, 3 lbs.; wheat middlings, 3 lbs.; best sifted beef scrap, 3 lbs.; bone meal, 1 lb.

From two to four weeks feed same as

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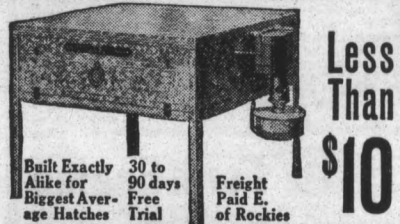


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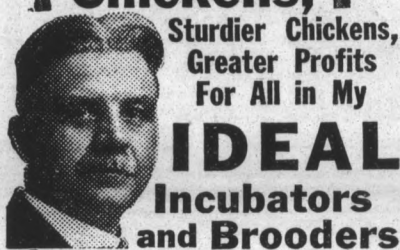


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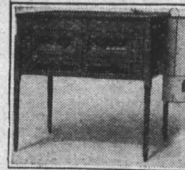
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above only cut the moistened mash down to two feeds a day, and from four to six weeks same, but cut moistened mash feeding down to only one feed a day. After they are six weeks old the cracked grain can be replaced by whole grain.

As before stated, charcoal, grit, oyster shell and granulated bone is always before them in hoppers. Twice a day they get clean fresh water to drink, being careful to always have the chill taken off.

Green Stuff Necessary.

After they are five days old we commence feeding green food, starting with a half handful for 50 chickens, and between one week and four weeks feed a big handful a day to 50 chickens, being sure that whatever you feed it is not frozen. We use very fine cut cabbage and think it about as good as anything you can get for its purpose. We use a chopping knife and wooden bowl to cut it with. The finer you cut it the better. Once in a while an onion cut up very fine to about 200 chicks when they are small and 100 when they are larger, is very beneficial and much relished by them. This green food is scattered over the litter so all have an equal chance of getting their share.

The hovers are cleaned out once every three days and thoroughly disinfected and renewed with clean straw. We use cut straw about four inches long for the litter in the scratching pen, and for under the hover about two inches long. Some advise the use of sand under the hoppers, but we could never get the best results with its use.

The feeding utensils and drinking fountains are scalded once a week and rinsed every day.

Fresh air in abundance is allowed inside, and muslin windows are employed for getting it inside without drafts. Fresh air and sunshine are especially necessary in winter for the successful raising of chicks.

Whatever you do, let me remind you in conclusion, do not overfeed, keep them warm, and everything about them scrupulously clean.

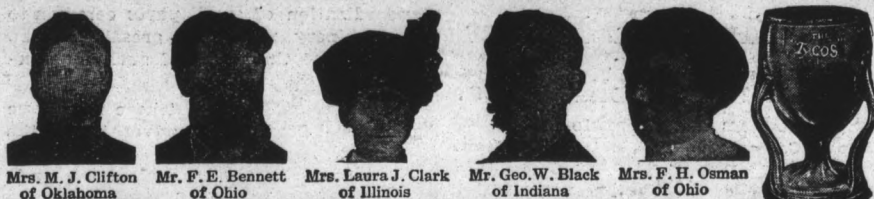
New York. F. W. KAZMEIER.

WINTER CONDITIONS FAVORING BEES.

We are having a good winter for the bees. There has been but little snow, and the alternating cold and warmth have given them repeated chances for winter flights thus far. It will now be very strange if they do not come through the winter well. Bees are warm blooded, and as long as a colony keeps in health the temperature of the cluster is about the same as the normal temperature of the blood of a human being. So bees go safely through some of the most extreme cold spells, even with a great deal more ventilation than one would think good for them. An occasional warm day, allowing them to take wing and cleanse themselves, is always beneficial, and it may be safely asserted that with a warm day once every three or four weeks ordinary colonies will live through the most frigid weather known in our latitude. But when cold spells are of long duration the bees are not only in danger of being compelled to discharge their bowels in the hive, but are also running the risk of constipation.

Where bees were properly housed in November, as they should be in our climate, not a great deal remains to be done for them, but it is important that this be done when necessary. If they are being wintered out of doors, when snow comes and drifts so as to obstruct hive entrances and exclude the air, it should be shoveled away as soon as the storm is over. If allowed to remain it may soon thaw, seal the hive entrance with ice, and smother the bees. As a rule, the principal cause of winter losses among bees in this part of the country is lack of ventilation. Some bee-keepers, in their anxiety to protect their bees from the cold, cover and make the hives so nearly air tight that it causes the bees to sweat. Then the little air they may have in the hive when the temperature drops low, becomes foul, causing the insects to become so weak that they cannot leave the cluster to seek their stores; thus they hang in the cluster until they starve, and when the bee-keeper opens his hives he finds the frames damp and moldy and his bees dead. Packing is all right if the bees are kept dry. Bees do not often freeze, but they can be easily smothered. Thus it would be preferable to prop up one end of the hive rather than to seal it down air tight. Bees can live in either a moist or cold atmosphere only at the expense of vitality.

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Direct from factory. 18 years experience. Safe, sure, simple. Redwood, triple walls, asbestos lined. Copper hot water heating tank, self regulator, automatic ventilation, safety lamp, nursery, tested thermometer. Comes all set up, ready to start. Write for free Catalog and Poultry Book. Address **Mankato Incubator Co., Box 875, Mankato, Minn.**

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WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started. Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription. The Lawrence Publishing Co., Detroit, Mich.

DETROIT, FEB. 15, 1913.

CURRENT COMMENT.

In a recent report Postmaster General Hitchcock stated that notwithstanding the abuse of the franking privilege by the members of Congress, the postal service of the country is on a self-supporting basis. Incidentally he recommended the abolishing of the franking privilege under which a vast amount of literature of doubtful value is circulated by members of Congress, particularly during a campaign season. Judging from the wording of the Postmaster General's report the volume of franked matter is very much larger than is appreciated by the general public.

Another interesting feature of this report was the recommendation made for a change in the parcel post law, both as to increasing the weight limit and decreasing the rate on matter of this class. Also the Postmaster General recommended including present third-class matter under the provisions of parcel post. These recommendations bear out the idea often expressed through the columns of the Michigan Farmer that, even though not wholly satisfactory, the present parcel post law would act as an entering wedge for the introduction of the system and that public sentiment would demand its gradual amendment and improvement until it measures up to the needs and demands of the people of the country for this kind of service.

At the annual convention of the American Society of Agricultural Engineers, held at Chicago, the subject of standardization was given considerable prominence. Unquestionably standardization, as applied to the parts of agricultural machinery whenever practicable, would be a great boon to the farmers who use it, since it would make the matter of repairs much more simple. This is particularly true so far as bolts, screws and nuts are concerned. Very often it will be found that non-standard small parts of this kind are used in constructing a great many different lines of agricultural machinery, necessitating a trip to town, or perhaps a special order which must come from the factory or distributing point before even minor repairs can be made.

Some of the engineers speaking at this meeting advocated a still further application of standardization, extending even to the guards and knives of mowing and reaping machines, wagon gears, etc. The point was brought out that the cost of production could be considerably cheapened by such standardization and that it would really be a benefit to manufacturers as well as to consumers.

It is a matter for congratulation that the mechanical engineers of the country are considering such problems in an organized way, since the more complete

standardization of small parts common to all machinery would be greatly to the advantage of the users of such machinery.

Those who have advocated the government fostering of agricultural credit have had opportunity to view this proposition from a new angle in the bill recently introduced by Representative Bathrick, of Ohio, (H.R. 27661).

Briefly stated, this bill provides for the creation of a bureau of farm loans under the control and direction of the Secretary of the Treasury for the purpose of lending money to bona fide tillers of the soil upon farm mortgages. The plan contemplated under this bill is the issuing of government bonds bearing not to exceed four per cent interest, interest payable annually, for the purpose of securing funds for the making of farm loans, said loans to be made upon the approval of the commissioner of the bureau of farm loans, contemplated by the bill, upon approved real estate mortgages not in excess of 60 per cent of the value of the property and at a rate of interest not to exceed four and one-half per cent per annum. A severe penalty is provided in the bill for the making of false statements with intent to defraud the government. The bill also provides for an appraisalment of the property offered as security by appraisers appointed for the purpose whenever a farm loan is sought.

The author of this bill claims for it that it proposes a greater and speedier co-operation than would be possible through scattered groups of farmers organized under a self-help system which is not so well adapted to our country as to European conditions. The author believes that if it is not paternalism for our government to loan money to banks at two per cent that it cannot be paternalism to loan money to farmers at four and one-half per cent, and that if the loaning of money to banks on such securities as municipal and railway bonds is safe business for the government it is a safer business to loan money upon such security as the farms of the country. The author claims that such a law would not only reduce the average interest burden nearly one-half but would pay the cost of operation and provide a large fund each year with which to meet losses and enable an amortization plan to be carried out by the government.

This is at least approaching the problem of agricultural credit from a new angle, an angle which we anticipate will not be popular in financial circles, but which will at least bear close study by the common people of the country.

A bill was recently introduced in the lower house of Congress, (H. R. 27321), requiring railroads engaged in interstate commerce to maintain an average speed of at least 15 miles per hour for live stock in transit from time of loading to the delivery of same at the point of destination. Many Michigan shippers state that they have a difficult time to get stock to market and have been obliged to quit shipping to the eastern markets because the railroads are so slow in handling stock originating at local points, stock shipments of packers and speculators originating at big markets being given the preference and going through on fast schedules while local shipments are neglected, with delays at every junction point, causing a heavy shrinkage and losses for which the shipper is obliged to make allowance in making country purchases.

Some shippers maintain that in specific instances railroads have failed to make an average speed of more than seven miles an hour with certain shipments, thus entailing a heavy loss upon the shipper. On this account the national legislation above mentioned is being sought, also a bill has been introduced in the state legislature providing for the more prompt handling of local shipments of live stock within the state. Reasonable demands along this line should receive general support for humane as well as economic reasons.

HAPPENINGS OF THE WEEK.

National.

In a fight between strikers and sympathizers on the one hand and mine guards, deputies and detectives on the other, 16 persons were killed and 40 injured at the Kanawha coal fields of West Virginia, Monday.

A fire at Gladstone, Mich., destroyed five business establishments in the Kratz building.

A pernicious system of grafting that has apparently been years in building in

New York city, is being bared by officials. Revelations brought out in the recent Rosenthal case together with confessions just made by a police captain, Thomas W. Walsh, has given the prosecution a large amount of information which will enable Prosecutor Whitman to ferret out other valuable facts concerning the system used by the grafters. It is now estimated that the amount secured from gamblers, pool room men and illegal resort keepers exceed the \$2,000,000 mark.

As a result of a smashup on the Wabash railroad at Detroit last Sunday night five persons were more or less seriously injured. The cause of the accident has not been explained.

Seven persons narrowly escaped death and were injured severely, when a Detroit Woodward avenue car struck an automobile in which the victims were riding, throwing all except one to the street.

The remainder of this session of Congress will be very busy since a large number of bills yet remain for action, including appropriation bills that will exceed three quarters of a billion dollars, and also arrangements with regard to the control of the Panama Canal.

Foreign.

During the past week war has been resumed between the Turks and the allies. No decisive battles have been fought although activity is reported in all portions of the contested territory. Adrianople is under fire, the bombardment of which was the first move by the allies on the resumption of the contest. Another effort of the allied forces is a movement of troops for the capture of the peninsula of Gallipoli which occupies a commanding position between the Aegean Sea and the Sea of Marmora and also opens the way to Constantinople by water. Reports indicate the Greek fleet is now in the Gulf of Saros and Servian troops are present to aid the Bulgars in capturing the territory. It is believed that the Turks failed in a desperate attempt to land forces near Rodosto, a fort on the Sea of Marmora, the purpose being to distract attention of the enemy from Gallipoli. It is believed that the Turks are anxious to reopen negotiations for settlement and Hakkı Pashi has been sent to London for that purpose.

Mexican disorders assumed new proportions Sunday when followers of General Reyes and Felix Diaz, a nephew of former President Diaz, released the leaders from prisons where they had been placed by the government, organized and fought the federal troops before the presidential palace. So suddenly did the outbreak present itself that the populace was confused and did not move from the scene of the conflict in time to avoid being caught, and women and children were killed by bullets. The total casualties are reported at 500. The federals were practically defeated although they succeeded in holding the palace. General Diaz sent an ultimatum to President Madero to resign or stand responsible for further bloodshed and since the president refused it is expected that the struggle will be renewed at any hour. The rebels hold Ciudadela, the almost impregnable arsenal and its immense stores of military supplies, which give them a decided advantage in any struggle that may occur.

The steamship Crown Point, from London, Eng., to Norfolk, Va., is reported adrift in the Atlantic, having lost her rudder.

Gloom overcasts London, Eng., because of the report that Captain Robert F. Scott, a British veteran of two Antarctic expeditions, and three of his companions were overwhelmed by a blizzard after he had succeeded in locating the South Pole. The Pole was reached by the expedition one month later than the Norwegian, Amundsen, discovered it. The remainder of the party are reported safe and it is thought that the bodies of the unfortunate persons have been recovered.

Advices from Mozambique, Africa, are to the effect that an engagement between Portuguese and native forces resulted in a defeat of the latter, they losing 200 killed and 500 wounded. The victory is considered important in that it opens up a new region for Portuguese development.

MICHIGAN CROP REPORT.

Wheat.—In reply to the question, "Has wheat during January suffered injury from any cause?" 159 correspondents in the southern counties answer "yes" and 118 "no," in the central counties 73 answer "yes" and 52 "no," in the northern counties 54 answer "yes" and 43 "no," and in the upper peninsula six answer "yes" and 16 "no."

Snow protected wheat in the state nine days, in the southern counties seven, in the central counties nine, in the northern counties 14 and in the upper peninsula 21 days.

The average depth of snow on January 15 in the state was 1.51 inches, in the southern counties 1.12, in the central counties 1.20, in the northern counties 1.49, and in the upper peninsula 5.88 inches.

On January 31 the average depth of snow in the state was 1.69 inches, in the southern counties 0.38, in the central counties 0.76 of an inch, in the northern counties 3.92 and in the upper peninsula 9.15 inches.

The total number of bushels of wheat marketed by farmers in January at 97 flouring mills was 96,500 and at 75 elevators and to grain dealers 68,037, or a total of 164,537 bushels. Of this amount 108,588 bushels were marketed in the southern four tiers of counties, 43,306 in the central counties and 12,643 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the six months, August-January, is 3,250,000. Eighty-nine mills, elevators and grain dealers report no wheat marketed in January. The average condition of live stock in the state is reported as follows, comparison being



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with stock in good, healthy and thrifty condition: Horses and sheep 96; cattle and swine 95.

CROP AND MARKET NOTES.

Genesee Co., Feb. 6.—After mild winter weather the extreme cold of the past few days marks a decisive change. Those who have begun to fear an ice shortage will have no further reason to complain. All hands are now busy filling the houses with a product that will be more appreciated next July than it is at present. County road work still going on by hauling crushed stone and other material ready for renewing operations in the spring. Markets have been rather dull of late not much produce being offered. Two things remain at top prices, work horses and milk cows. A number of farms are changing hands, both by sale and rental. Farmers who have tested their oats claim that only a very small proportion germinates, supposed to be owing to continued rain during harvest of last year. Some of the corn tests as badly as the oats. Farmers now rarely plant their seed without first testing it to ascertain its germinating qualities. Under favorable conditions one man's oats tested only 10 sound grains out of 150.

Emmet Co., Feb. 6.—Weather for January generally mild, with very little snow just sufficient to make fair sleighing for light traffic most of the time, but not enough for the proper prosecution of lumbering operations. A decided drop in temperature the first of February to below zero. Ice formed over the bay, which is now covered with fishing shanties. A large quantity of wood is being hauled to market by farmers, and some timber being harvested by them as saw logs. Dressed beef, 7½¢; hogs, 8¢; eggs, 20¢; retail at 40¢ during December and fore part of January, but are now down to 30¢.

Sanilac Co., Feb. 7.—At present we are having cold weather. Not very favorable for the fields. No snow but vast amounts of ice and the ground is frozen very deep. Up to February 1 the weather was very changeable. Roads were never better than they are now. A lot of gravel being drawn for the highway and building purposes. Some wood sawing done. Coal down in price, soft selling at \$4 and hard at \$7.50 per ton. Farmers objecting to wages asked for hired help, claiming they cannot stand for such wages with produce so cheap. Hay markets very dull. Beans can hardly be sold. Very few dry ones in the country; oats, 30¢; wheat, 1.02; eggs, 20¢; butter-fat, 32¢.

Hardin Co., Feb. 8.—February brings us the coldest weather of the season so far. The ground is covered with snow and the thermometer near the zero mark. Quite a business being done in the marketing of corn, oats and wheat. The wheat and rye looking very well yet. January was a very open month and froze and thawed several times but if we have good weather from now on we stand a good chance of a fair crop. Oats, 30¢; corn, 45¢; hogs \$7.50 per cwt.

New York.
Genesee Co., Feb. 3.—In many respects last year we had another off season. A wet, cold, backward spring, which was followed by a dry spell the fore part of the summer. After that we got rain too frequently, which it has kept up to the present time. Very little snow and cold weather this winter. No ice crop as yet. Hay was a fair crop. Much of the wheat was damaged by the Hessian fly. Barley and oats were short. Corn was quite a good crop. Beans greatly damaged by wet weather, and secured in bad shape. Potatoes, where not thoroughly Bordeauxed, were struck hard by the late blight, and consequently are decaying badly. It seems some farmers are not aware of this. Following are the prices offered by dealers, not the retail prices: Butter, dairy, 28¢; creamery, 36¢; pork, dressed, 16¢; live, 7½¢; turkeys, live, 20¢; chickens, live, 15¢; ducks, live, 18¢; lambs, dressed, 14¢; eggs, fresh, 25¢; wheat, \$1; oats, 40¢; potatoes, 45¢; cabbage, \$3; beans, \$2.25-\$2.40 per bu; apples \$1.00-\$1.50 per bu; hay on track, timothy, \$15.00; No. 1 choice clover mixed, \$14; choice clover, \$12; oat and wheat straw, \$9.00; milk, retail, 7¢ qt.

WOULD LICENSE DOG BREEDERS.

In regard to the dog nuisance spoken of in your last issue, I think something like the following would help some: First, that no one except a licensed breeder should be allowed to keep a female dog and his license should require him to keep only pure-bred dogs, and to keep them strictly on his own premises, confining the females during the breeding period; Second, that every dog owner should know, not guess at it, that his dog is confined in some building at night and whenever he goes away from home. A penalty of \$5 for the first offense, with increasing amounts up to a jail sentence, should be imposed upon any who fail to comply.
Ingham Co. L. A. W.

WOULD INCREASE DOG TAX.

On page 158, issue of February 8, you ask the question, "How improve the dog law?" I am a sheep breeder but not a dog owner. I would answer it this way: Raise the dog tax to \$3 for male and \$5 for female dogs and if not paid give the sheriff \$3 for putting them out of the way.
St. Joseph Co. R. A. GOODRICH.

THE ROUND-UP INSTITUTE.

The annual Round-up Farmers' Institute will be held at the Michigan Agricultural College, East Lansing, Mich., on February 25-28, inclusive. Supt. Taft announces that unusual care has been taken in the selection of speakers and that every one of the topics discussed is prominently before the people of the state at the present time. A summary of the program will be given in a future issue.

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The Cyclone Tile Ditching Machine

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Compared to any other method of digging tile ditches, the Cyclone pays back its cost in the first ten days' use, and in less time than this, if you compare it with hand labor. It saves more than enough to pay for the tile.

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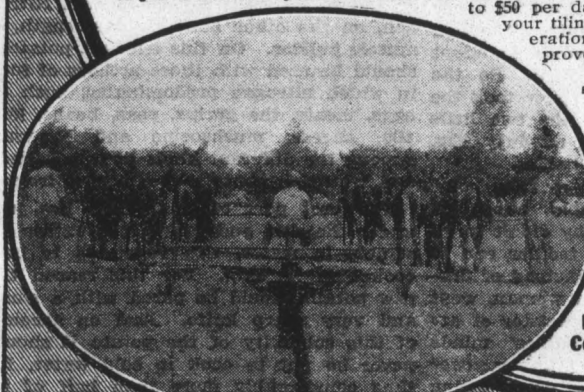
—the most important machine you can use on your farm. You can't improve your farm land more effectively than by laying tile through it.

The most up-to-date machinery, the best live stock, silos, buildings or any other investment cannot bring maximum profits unless your land is tiled. Let us send you the scores of letters that show most convincing proof of this.

All the good nurserymen all over the country tile their land. They have found that it produces healthier and stronger trees and it is easier to keep the soil in the best condition.

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Tiling helps not only wet land, but any land. Tiling aerates the soil. Air to vegetable life means almost as much as air does to animal life. Bacterial life in soil requires air to properly develop.

Tiling ordinary land increases crop yields fully 25%. The tile not only carries off excess moisture, but brings moisture to the soil in dry seasons, making it loose and mellow so the roots can pass down to a greater depth.

During dry seasons, crops are saved by good drainage. Tiled land can be seeded earlier—the ground works better. The fertilizers put on the soil are not lost by surface washing.

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it will save its cost to you in 10 days' operation. This is a FREE TRIAL without any strings. You needn't pay till we prove it. You needn't pay if we don't prove it. Keep your money in your pocket till we prove it on your farm. That's a remarkable offer. Why not accept it today—NOW? Why not learn the secrets of getting biggest crops from tiled land? What's the use of going to the expense of putting out fertilizers if rains carry them off instead of letting them penetrate the soil as they should? The Cyclone brings the cost of tiling within the reach of any man who works farm land. It's a good investment, figure it any way you like, you can't point out another farm machine that will pay bigger dividends. What the Cyclone is doing for hundreds of others, it will do for you.

300 Rods Per Day Guaranteed

If you can drive an ordinary plow, you can dig 300 rods of ditch, 24 inches deep and 10 inches wide in ordinary soil per day with the Cyclone. It would take 30 men to do this work by hand. The Cyclone works successfully in hardest hard pan, stiff clay and simply ride it as you would a plow. Good, clean work, done the easiest, most economical and satisfactory way.

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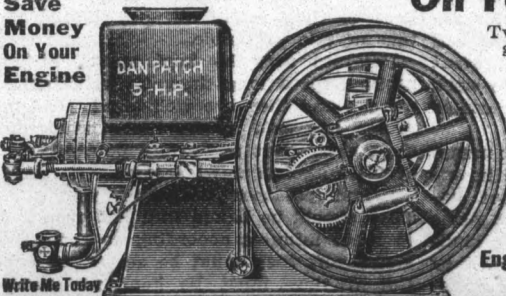
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Woman and Her Needs At Home and Elsewhere



When You Live With Others

John Doe died a year ago and left his widow unprovided for. It wasn't exactly John's fault, he had worked hard enough, goodness knows. He arose at 4:30 and gulped down two or three cups of strong coffee, chinked in between with burned potatoes and greasy sausages, then hurried away across town to work until six in a factory. At noon he ate a cold lunch from a pail, there were 30 minutes for refreshments, and at 5:30 he quit and came home to eat a poorly cooked supper, smoke a pipe and go to bed. For his long hours of toil John received \$9.00 a week. There were three small children, a baby arrived three months before John's death, sickness a plenty, rent \$12 a month, food, coal, carfare and clothes, so you can readily see why John left his family unprovided for when he died.

John's wife had no time for mourning. After the first shock her grief was overshadowed by the pressing necessity of making a living for herself and the three babies. She could not do it by taking in washing, she was too frail. The house wasn't large enough for boarders, and if it had been Mrs. Doe hadn't the strength to cook for them. She had no particular education, so she was decidedly in a bad way. The family physician helped solve the problem by suggesting that if she could place her children somewhere she might earn \$8.00 or \$10 a week by nursing. He had noticed in John's sickness that she was very good in the sickroom, and he promised to call her on simple, easy cases and coach her.

Then her sisters came forward and offered to take the children if she could clothe them. They had enough to do to take care of their own, but it is always the ones with the biggest load who are willing to take on a bit more. The hen with one chicken never offers to adopt the orphans of the barn yard. So the question was settled. One sister took the oldest boy, the other took the two little girls and in her periods of off-duty Mrs. Doe would stay with the babies.

Her first case took her away from home six weeks. The inevitable happened. When she returned the baby didn't know her and the two-year-old toddler ran to her aunt for everything. Instead of taking it wisely Mrs. Doe, poor woman, wept and wailed and accused her sister of attempting to poison her babies' minds against their own mother! She went over to visit her boy and instead of upholding his aunt's discipline she told him he needn't mind aunt while she was there! Both aunts were outraged but fortunately before a real quarrel arose the mother was again called out to work.

However, there soon came another longer period of rest and the mischief was done. Mrs. Doe, hurt to find her children estranged, as such young children would naturally be, and not wise enough to bow her neck to the yoke, vowed the children were hers and didn't need to mind another woman. Naturally the sisters thought when she was depending upon them to feed and care for her little ones, she should be reasonable enough to waive some of her rights. After three weeks of bickering she took the little ones to a home and agreed to pay for their board. But a long period of idleness followed, she couldn't meet her bills, the woman who was boarding the children turned them out, one sister refused to help out, and the other one had to take all three. Mrs. Doe is at present meek enough, because she has little work and less money, but if prosperity comes again, will she behave?

I write this, not because I expect many, if any, of my readers, to be placed in exactly the same circumstances, but because so many women come to a place where they have to depend on the kindness of others. And all too often they refuse to adapt themselves to circumstances. After having followed one's inclinations for years, it is so hard to submit our will to others. But when we are depending on others, it must be done. So often there is the spinster aunt, the helpless cousin, the mother-in-law who must

be cared for. All too often they assume the position that it is nothing more than right that they should be given a home and that all the other inmates should respect their whims and fancies. They are aggrieved if not given the best room, miffed if not served their favorite viands and positively insulted when left out of the family councils.

It is well for these women to look at the other side of the picture. It is seldom a positive pleasure to take an outsider into one's family, even where there is plenty of money. And when, as it all too often happens, the addition to the family means positive sacrifice to the inmates the least the newcomer can do is to make herself as inconspicuous and of as little trouble as possible. The only wise thing is to take the advice we give children, "be seen and not heard." Remember, but for the bounty of these friends you would be homeless, and adapt your mode of life to your altered circumstances.

DEBORAH.

THE POTATO AS DIET.

BY CHARLOTTE BIRD.

The potato is the vegetable in by far the widest service. Even with continuous use one does not tire of it. The potato has no pronounced flavor, so it may be united with many other foods. And so the cook is able to combine this valuable aid with her menu two or even three times a day.

The principal constituent of potatoes is starch. The saliva accompanying mastication and the juice of a certain stage of digestion converts the starch into sugar and so makes it a flesh former. Nitrogen, on the other hand, is a strength, a muscle builder. On this account potatoes should be used with those articles of food in which nitrogen predominates, such as eggs, meats, the grains, peas, beans, lentils, cheese, mushrooms and bananas. Among the different kinds of fish, salmon and whitefish contain the most nitrogen.

The best part of the potato lies just under the skin and, since it is extremely soluble in water, this vegetable is best cooked in its skin. For this reason the raw potato should be pared with a small and very sharp knife. And on account of this solubility of the potato it should never be put to cook in cold water, for thus considerably more than half of its nutrition is lost.

Old potatoes should be soaked in water. If they are strong, the water should be changed while they are cooking. Potatoes to be either baked or boiled in their jackets, should have a little bit of skin cut off at each end and after they are cooked, the skin should be pierced to allow the steam to escape. Potatoes should be boiled slowly and not at a gallop, for too rapid cooking makes them a solid paste which is neither palatable nor digestible. As soon as boiled potatoes are tender, the water should be drained off immediately and thoroughly or they will become soggy and lose their mealy quality. In fact, they should be dried a minute or two over the blaze. Then sprinkle with salt and shake the vessel up and down to give air to the potatoes. If potatoes are cooked in their jackets and then peeled and mashed they are delicious because they retain all the original virtues of this vegetable.

Potatoes may be kept warm without spoiling for a long time, if the skins are pierced and they are well aired. Old potatoes are said to be more wholesome than new. But any waxy potato, whatever its age, is unwholesome.

Baked potatoes are very wholesome. They should be baked in a hot oven from 40 to 60 minutes according to their size. When soft they must be served at once. But if they must be kept for awhile, pierce the skin to let out the steam and let air.

Creamy Mashed Potatoes.—The potatoes should be mashed in the still hot vessel in which they have been cooked. Use a wire masher and continue till the

mass is free from the smallest lump. Then season with salt, butter and cream and a little pepper. Then beat well together till creamy and light and serve in a hot dish.

Potato Cakes.—Season a generous allowance of grated raw potato with butter and salt, a little sugar and cinnamon and then bind together with beaten egg and flour. Shape into flat cakes and fry a good brown on both sides.

Creamed Potatoes.—This is a nice way to use up left-over boiled or baked potatoes. Put into a frying pan a tablespoonful of butter. When this is melted, not browned, add a small cup of milk and heat to bubbling point. Then put in about a pint of the cold diced potatoes, salt, cover and cook very slowly till the milk is all absorbed. Then add about two tablespoonfuls of rich cream and simmer very gently five minutes longer.

On account of what goes into its composition potato salad has special hygienic value. A delicious potato salad is made as follows: One-half cup cream, one heaping teaspoon of flour, one and a half tablespoons vinegar, one-fourth teaspoon sugar, one tablespoon butter, one-fourth teaspoon mustard, and salt and pepper to taste. Cook in double boiler. Just before taking from the fire, add the well beaten whites of two eggs. Then mix thoroughly with a dish of cold cooked sliced potatoes with a little sliced onion. Let stand on ice for a little while or in a cool place.

HOME QUERIES.

Household Editor:—Would like to know what would remove uncooked sweet apple stain from linen.—M. S.

Try chloride of lime, a level tablespoonful to one quart of water. Dip the stain in and leave only a few minutes, then remove and rinse in clear water. If the stain is not gone repeat until it disappears. Rinse thoroughly as the lime will rot the fabric if not all removed.

Household Editor:—How do you clear soup?—Mabel M.

Let the stock stand until it is cold, then skim off all the fat that collects on top. If it has jellied, wring a flannel cloth out of warm water and wipe over the top to remove all particles. If not jellied, lay a tissue paper on top and the fat will adhere to this. Then pour off all the stock that is clear into a soup kettle and allow the white and crushed shell of one egg to each five cups of stock. Mix these thoroughly, then set over the fire and stir constantly until it begins to boil. Let boil vigorously five minutes, then set aside to cool, skim and strain through a doubled cheesecloth. Small piece of raw lean meat will clear it if eggs are scarce.

Household Editor:—Can you suggest a pretty salad? Something with red in it?—M. B.

Try heaping candied cherries on leaves of cabbage lettuce. Serve with mayonnaise dressing, passed in a pretty bowl, or with whipped cream. If cherries are out of season, chopped beets are pretty, and most people like them.

Household Editor:—What is the best prepared food for a baby?—Anxious Mother.

It would be hard to answer your question, as what agrees with one baby may not with another. The patented foods are nearly always some form of starch, though, of course, there are some milk preparations. The starches are either malted, boiled or baked and the malted starch is supposed to be loosening, while the baked is more apt to be binding. Many physicians say that no baby should have starch in any form until it is seven months old, as the salivary glands are not ready for work until this age and the saliva is needed to digest the starch. The best food is a modified milk.

THE FARMER'S LUNCH IN WINTER.

BY MRS. MARY E. UNDERWOOD.

It is often necessary for the men to work in the fields in cold weather. Fence mending and various odd jobs, as well as early plowing, take farmers out sometimes on very chilly days, and frequently the fields are too far from the house for them to return to dinner. I like to please the men folks by putting them up a hot



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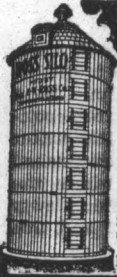
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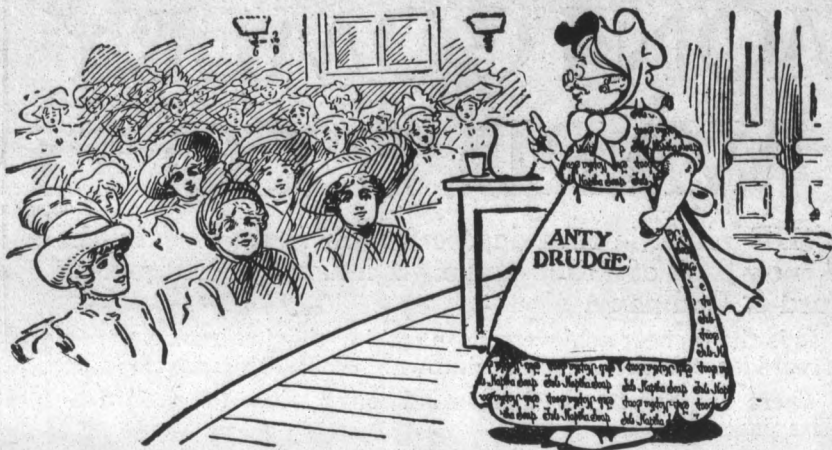


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What Anty Drudge Learned in the City

Anty Drudge—"I am glad to have the chance to tell you women a few things I learned while I was in the city. I found that I could get such fine things to help me that I came back to the country and brought some of them with me. Every woman who tries can find ways to help her in her work, and the best thing I found was Fels-Naptha Soap."

The reason there are so many tired-out, unhappy women on farms today is that they will not learn the new ways in which they could help themselves in their work. And yet the farmer's wife has so many advantages over her sister in the city. And she can have the advantage of Fels-Naptha Soap just as easily as not.

Fels-Naptha is a soap that does the hard, disagreeable part of your work for you; just soap the clothes and put them to soak for about thirty minutes in cool or lukewarm water, and see how easy it is to get the dirt out without any hard rubbing or boiling. Remember, Fels-Naptha Soap works best in cool or lukewarm water—no need of a fire.

Directions on Inside of wrapper; Made in Philadelphia



A Big Thing on the Farm

Old Dutch Cleanser saves work and time on the farm in dozens of ways.

Aside from its many good uses in the home where it takes half the work from housekeeping, it is invaluable in quickly and hygienically cleaning the dairy pans and pails. In the barn, harness and carriage sides and tops clean easier and better. Everything that requires cleaning calls for Old Dutch Cleanser. Nothing else will do the work half so well.

Many uses and full directions
on large Sifter Can—10c.

Old Dutch Cleanser

lunch instead of a cold one. It is not half so difficult as it sounds, and you can have quite a variety in the lunches, too.

One day I make coffee, heating the milk and even the pail I put it in. This pail is covered tightly and put into a larger pail or a basket which is well lined with warm newspapers. Around the inner pail I pack baked potatoes, right from the oven. Then I wrap the whole in warmed newspapers and send it out. It keeps nice and hot till it reaches the fields. The rest of the lunch I pack in another basket, the slices of buttered bread, cake or pie, with white enamel cups and paper napkins.

Another day I send soup, with some white enamel bowls, and hot biscuits, nicely spread. Sometimes I have apple dumplings, made this way: I take apples that have been baked without the core and use one for each dumpling, wrapping them up in a plain crust and baking quickly. They will keep hot for nearly an hour and need no sauce because the apples are nicely seasoned.

Meat scraps I often use to make little individual pies, mixing a little crisp fried pork and finely chopped potato with the lean meat. The men just love these pies, and they keep steaming hot in the pail. When seeing the keen enjoyment of the cold and hungry men, one feels well repaid for taking the tramp to the far-off field to deliver the lunch to them.

SUGGESTIONS FOR THE HOUSEWIFE.

BY ELLA E. ROCKWOOD.

One of my friends has a habit of sticking a needle of suitable size into every spool of thread in her work basket. In this way there is never any bother in finding a needle which is just right for the thread and by replacing it after use it is always there when wanted.

It sometimes happens that one wishes to wear a net yoke over high necked underwear. The latter can not be turned down smoothly owing to the shoulder seams. But by ripping the shoulders and overcasting the edges the garment accommodates itself to the lower outline very nicely. Hooks and eyes attached to the separated portions render it high-necked again, as desired for ordinary wear.

A southern cook gives this method of cooking a tough steak so as to make it as tender as veal. Dredge the meat with flour and chop the entire surface on both sides with the edge of a dish or with a regular meat pounder. Dredge again and repeat the operation, crossing the first marks. Have ready a little suet or butter in a spider, melt, and lay in the meat. Sear quickly without burning, then add half a cup of hot water, cover closely and set where it will cook slowly for half an hour. Add salt and pepper, if desired, and turn the meat once during this time. It should brown down, but not be allowed to scorch. Remove to a hot platter and spread with butter. Gravy may be made in the frying pan.

WHAT'S IN A BONE?

BY ELRENE NISEWANGER.

Physiologically and chemically, there are several things in a bone, and "domestically" there are several meals in a bone if it is large enough and if one knows how to make the most of it.

If you want meat as well as soup, it doesn't pay to buy the 10 or 15 cent bones, for you have the bone to pay for anyway, and so much more meat, proportionally, comes on a 25 cent soup bone. This is the road such a one usually travels with us, a family of six: Steak, hamburger, boil and soup, croquettes or hash, sometimes both, and the denuded bone, although it could scarcely be called green, is finally run through the bone cutter and fed to the chickens.

The first time the soup-bone "steak" was served at our house, the "gude mon" said it was the tenderest steak we had had in a long time and one of the children said it tasted like fried chicken. None of them knew its source. With a sharp knife I cut off the largest possible slices, we like our steak well-done and do not care to have it thick, pounded them well to bruise and soften the tough fibres, dredged with flour and put in a hot skillet with a little lard. After cooking slightly on both sides a little water was added and the covered skillet pushed toward the back of the range where the "steak" finished its cooking rather slowly and came out deliciously tender and fine flavored.

For the hamburger, scraps and odds-and-ends are trimmed off, run through

the food chopper, seasoned and cooked after my favorite hamburger recipe.

The bone and remaining meat then go into the soup kettle and simmer slowly for a long time. We like a little rice in our soup and, sometimes, a little celery or tomato for a change of flavor. There is plenty of the boiled meat for our dinner, served with a favorite sauce or catsup, and plenty left to make into hash or croquettes for breakfast.

CROCHETED CAP.

BY FANNIE V. WILSON.

Seeing Mrs. C. C. E.'s request in your paper for directions for a crocheted cap I send the following. I have just nished one in all white yarn but they are very pretty when made in white and blue or red.

Get elderdown wool yarn, four skeins are enough. If you use two colors get two of each. Chain three stitches of white yarn; join with slip stitch. Chain 2nd, yarn over hook, insert hook in ring, draw yarn through (big loop), yarn over hook, draw through all three loops on hook.* Repeat between stars 10 times, when ring ought to be well filled.

In chain of 2 at beginning of row make 2 stitches of pattern. In each stitch of preceding row (taking up full stitch), make 2 stitches. Continue until at end of third row. There will be 29 stitches around. Make three more rows of one stitch in each stitch of preceding row, increasing one stitch only at end of each row. Work now measures 42 stitches around. Make two more rows without any increase. This finishes crown of toque.

The colored yarn may be used for the brim. Chain one stitch; turn and work with inside of crown toward you. Put one stitch of pattern in one stitch of preceding row. Make four rows. Finish cap with a row of one slip stitch in each stitch of preceding row. This gives firmness to edge of brim.

FASHIONS BY MAY MANTON.

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



No. 7548—Double breasted coat, 34 to 42 bust. With cutaway or straight fronts, with or without revers and belt on back.

No. 7556—Boy's coat suit, 8 to 12 years. With trousers that can be finished with knee-bands or hems and elastic.

No. 7542—Semi-princess gown, 34 to 42 bust. With or without chemisette and peplum, with elbow or long sleeves.

No. 7558—Girl's dress in middy style, 6 to 12 years. With high or low shield, sleeves that may be tucked or gathered at their lower edges and with straight, plaited skirt.

No. 7544—Five-gored under petticoat, 22 to 34 waist. With inverted plait, gathers or habit back, with or without yoke and frill.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer on receipt of 10 cents for each.

"The Work of Rains and Rivers," by T. G. Bonney, Sc.D., L.L.D., F.R.S., past president of the Geological Society and the British Association, Fellow of St. John's College, Cambridge, describes the work of rains and rivers in carving and carrying, the making of valleys, etc., including the history of the river system and the learning of the lesson by man. One hundred and forty-four pages. Published by G. P. Putnam's Sons, New York. Price, 40c net.

Practical Science.

OLEOMARGARINE.

BY FLOYD W. ROBISON.
The Counterfeiting of Butter.

Within recent years most of the natural products of commerce have been subjected to counterfeiting. In no realm of commercial activity has the substitute been more thoroughly exploited than in the dairy industry, and in the offering upon the markets of the country of a substitute for the most prominent of the milk products—that is, butter. In no small way is the conservation of the farm resources hinged upon the sale of the commodity, butter. The increased sale of butter at satisfactory prices is coupled directly with the increased investment in dairy cattle, which investment is, in its turn, directly connected with the increased productivity of the crops on our soils and in turn, of a consequence, responsible in no small way for the increased fertility of the soil.

The Dairy Industry is the Farmer's Most Stable Industry.

It is conceded that the dairy industry furnishes the most standard and satisfactory, and safe agricultural investment which is open to farmers. There is little risk in an intelligently directed dairy business. The income is practically a cash one, and there are few difficulties in the way of a satisfactory profitable business year in and year out. No line of animal husbandry is so devoid of risk and speculation as is the line of dairy husbandry. It seems that there can be no limit to the demand for high-grade dairy products, provided the dairyman is given ample protection in his market.

Oleomargarine First Called Butterine—Named Like Butter.

A number of years ago, when oleomargarine was first placed on the market, an attempt was made to call it butterine, and in some sections it is still advertised and sold as butterine. This trade name is entirely at variance with the exact letter of the National Food and Drugs Act, and likewise with that of the state of Michigan. Consequently to market oleomargarine under the name of butterine is absolutely illegal and rightly so. There is no question that the word butterine was given this commodity in order that it might attract to itself a portion of the reputation of the product which it was supposed to imitate, namely, butter.

Oleo Made to Taste Like Butter.

Not content with imitating butter by this combination of vegetable oils, animal oils, fats, such as tallow, lard, oleo oil, cottonseed oil, etc., the manufacturer must go on further and make this product taste as nearly like butter as possible. To accomplish this, this mixture of oils and fats is actually churned or stirred with milk so that it may attract to it some of the flavors which are found in genuine butter. After adopting the name and as much of the flavor as possible, still the product lacks one essential characteristic which butter possesses, and that is the color.

Oleo Made to Look Like Butter.

Consequently the manufacturer added the artificial coloring matter, thus making three counts of similarity between the sophisticated, or imitated, article, and the genuine butter. The first is the name; second, flavor, and third, color.

Food Laws Require Original Names.

It has been the spirit of all food laws to prevent the naming of a substitute article in such terms that there is apt to be deception on the part of the manufacturer or dealer, and that the consumer may be misinformed regarding the real character of the product she buys. For instance, vanilline could not be a legal name for an imitation vanilla extract, or lemonine would not be legal as a name for an imitation lemon extract, and thus on through the list of genuine food products. If a substitute is offered it must be given under an original name, such that it meets with favor through its own merit and not usurp the credit belonging to the product which it imitates. We say, therefore, that the word butterine should in no sense be permitted as designating the product which we have come to know as oleomargarine. There is even a question as to the advisability of permitting the stirring of these fats with milk or cream which is done purely for the purpose, as we have stated, of allowing these fats and oils to absorb and

hold some of the flavor characteristic of the genuine butter. The government, however, has permitted this to be done in the process of manufacture of oleomargarine.

Yellow Color a Trade-Mark of Butter.

Restrictions, however, have been placed on the use of color in oleomargarine. A certain more or less yellow color is one of the distinctive trade-marks of butter and therefore for oleomargarine to be colored yellow or any shade of yellow is an attempt to permit it to masquerade in some degree in the market for the product which is imitated. For a number of years the national government has seen fit to allow on the statute books a law requiring manufacturers of colored oleomargarine to pay a tax of 9½c a pound over and above the cost of uncolored oleomargarine, for the privilege of adding the coloring matter or, in other words, for the privilege of imitating the color of butter.

The Lever Bill.

There is a bill in Congress at the present time which if enacted into law will repeal the provisions of the present oleomargarine law and thus permit the indiscriminate coloring of oleomargarine. If oleomargarine may be manufactured and so cleverly manufactured that it will pass in the market as pure butter, it needs no great argument to demonstrate that a very severe blow indeed will be dealt to the dairy industry.

Our Prosperity Depends on Our Dairy Industry.

We have stated, and submit, that no argument is needed now to remind the people of this commonwealth that the prosperity of this state is in no small way bound up in the success of the dairy industry. Oleomargarine can be manufactured for approximately 10 cents per pound, while butter must command a price at least twice as high to make it a commercially attractive business. It can be easily seen that to cripple the dairy business oleomargarine need be sold for but a few cents under 25 cents per pound, to permit it to drive butter from the market. Again, the allowing of coloring matter in oleomargarine is a direct blow to the consumer of both butter and oleomargarine. With no restrictions on the coloring of oleomargarine, uncolored or white oleomargarine will shortly disappear from the market and the time for cheap oleomargarine will have passed away. Even with the placing of the 9½c tax on the production of oleomargarine, there is a limited sale of uncolored oleo.

Colored Oleo Illegal in Michigan.

In the state of Michigan at the present time, it is absolutely illegal for any artificial coloring matter to be introduced into oleomargarine and as natural oleomargarine is naturally very light in color it is not easy for it to masquerade in the market as butter. Of a consequence the consumer knows at a glance what he is getting, oleomargarine or butter. This condition works to the very decided advantage of the consumer for she may now in the state of Michigan secure oleomargarine at a low cost somewhere near the cost at which it should be retailed.

We have followed with close interest the times in this and in neighboring cities when unscrupulous manufacturers have evaded the revenue tax and manufactured oleomargarine with coloring matter without paying the 9½c tax.

Colored Oleo Is Not the Poor Man's Butter.

This coloring matter has added not a calorie to the food value of the oleomargarine but because it now resembles butter, from 10 to 15 cents per pound is at once added to the selling price and the poor man's butter is a thing of the past. We assert, with absolute confidence in the integrity of our position, that the retention of the present low price on oleomargarine and on that account its meeting within the bounds of the average consumer, and likewise its action as a balance wheel at the times of excessive butter prices, depends absolutely upon either the retention of the revenue tax at a high point on colored oleomargarine, or better still, the absolute prohibition of the introduction of any sort of color into this substitute product called oleomargarine. This is not the dairyman's problem alone but the consumer's as well. The consumer's interests, strange as it may seem, will go hand in hand with those of the dairyman, in this respect.

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

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

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

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

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

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BUTTER BRED JERSEY BULLS FOR SALE. CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

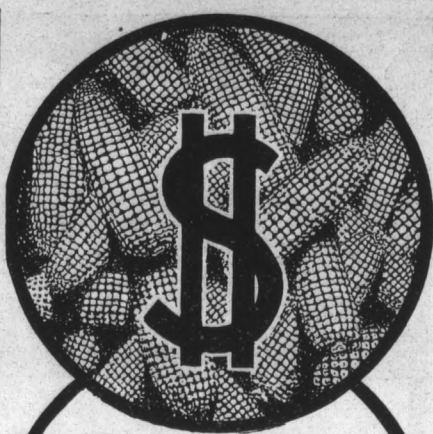
Lillie Farmstead Jerseys (Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

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

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Farm Commerce.**A Need for Co-operation.**

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

IN our article last week we cited as an example the case of the California Fruit Growers' Exchange to prove that co-operation among fruit growers can be successful. Naturally this movement would begin in the west, because the increase in production was in greater proportion than in the east, and they of necessity were forced to find the remedy to meet the conditions which were forced upon them. But when the same conditions existed in the east in the vegetable growing sections of the eastern shore of Virginia, the farmers were forced to apply the same remedy.

In 1898 the conditions in Accomack and Northampton counties of Virginia, known as the eastern shore, where the principal products are white and sweet potatoes, were very bad, the farmers were being swindled unmercifully. This was partly because they were so far from the large markets and were entirely at the mercy of the track buyers. Sweet potatoes were carted four miles to the station, and sold for 25 cents per barrel. Imagine, if you can, what the position of the grower was after he had grown his crop and sent his cart, containing six barrels, to the station, four miles away, where he probably could not deliver more than two loads, or 12 barrels a day, and was given the generous sum of \$3.00 for his day's work. The market in the city was \$1.50 per barrel. The farmer should have been getting \$1.08 per barrel f. o. b. at least. He was therefore being defrauded out of 83 cents on each barrel.

This wretched state of affairs caused widespread discontent, and as the interests of one were the interests of all, it brought the farmers together and resulted in the organization of the Eastern Shore of Virginia Produce Exchange, which was incorporated under the laws of the state in 1900. They began business at once and, of course, experienced the usual difficulties as all do in the first years of their existence. The manifest loyalty of the better class of farmers influenced the vacillating ones, and they were gradually brought to see that their interests were identical, and thus they were united in an organization that ranks among the first as to financial ability and volume of business.

Standard Grade is Sold.

Following the example of the California Exchange in grading their fruit, they graded their potatoes and branded them "The Red Star Brand." This brand is kept up to the standard, and all potatoes that do not reach this quality do not take the brand, thus putting a quality of goods on the market that always bring the highest price. These potatoes are graded by the farmers and brought to the station, where one-fifth of them are inspected before the lot is accepted and branded. If found inferior, they do not carry the brand, but are sold as ungraded. Their success because of the care in the preparation of their goods and the wise distribution has been phenomenal. They have been in business 12 years, and their total business for 1911 was \$2,300,000. They have a capital stock of over \$40,000 and a surplus of over \$70,000, and are paying a 10 per cent dividend each year.

We have given examples of how and where co-operation has been successful in preparing and distributing immense quantities of fruit; and also where it has been equally prosperous in the vegetable districts. It does not make any difference whether the product be oranges, onions, prunes, nuts, apples, grapes, potatoes, beans or any other commodity, so long as there is sufficient quantity of some one article of food to make a car lot business.

We have shown the true conditions that face the farmers, and how they have been hampered in their endeavors to market their products through the old system of distribution; and have pointed out, we think, a better way and given some examples of how others have tried this new path to the betterment of their conditions and the mutual pecuniary advantage of all concerned. We wish to still further illustrate this subject by giving

a brief outline of the history of The Monmouth County Farmers' Exchange of Freehold, N. J., showing the causes that brought it into existence, how it was organized, the manner in which it does its business, and the results of five years work, in the hope that it may stimulate others to follow the example.

Dissatisfaction among the farmers of our county, which is one of the largest producing sections for potatoes in our state, began to manifest itself in 1906. Our farmers felt that their products passed through the hands of too many dealers, and because of this the expenses of marketing were too excessive. Originally the discussion began in the grange meetings, but soon it became general among all the farmers of our county. During that year little was accomplished except to agitate the question and keep it in motion. In the winter of 1907-8, definite action was taken. A committee was appointed to visit the general office of the Eastern Shore of Virginia Produce Exchange and examine their mode of operations to see if we might not be able to emulate their example to our mutual advantage.

The committee made a very optimistic report, and as a result a meeting of the farmers was called in January, 1908, and was very largely attended. The manager of the Eastern Shore Exchange was present and addressed the meeting, explaining their system of operation, amount of business and the beneficial results received by their farmers. The meeting was greatly impressed with the statements made, and subscriptions for the capital stock to the amount of \$2,000 were taken. Committees were appointed to see the farmers not present and receive their subscriptions. The matter was pushed forward vigorously and successfully to completion, and resulted in the organization of the Monmouth County Farmers' Exchange, and was duly incorporated under the laws of New Jersey, March 3, 1908, with an authorized capitalization of \$100,000—20,000 shares with a par value of \$5 each. The charter is very broad and we are empowered to do any kind of business anywhere in the county.

Next Week.

In the February 22 issue Mr. Ingling will tell the Michigan Farmer readers how their local co-operative association is organized and what the results have been.

**THE NOMID SYSTEM—A PLAN FOR
MARKETING FARM PRODUCTS.****Chapter VII.—(Concluded).****Common Carriers Defined.**

A common carrier is one who undertakes to transport the person, or goods, of anyone who may choose to employ him, for hire. There are two characteristics which distinguish a common from a private carrier: First, the common carrier must serve all who apply without discrimination while a private carrier may serve only those he may choose. And second, the common carrier is under an exceptional liability in transporting the person or goods. Whereas, the private carrier has the same responsibility toward the goods that an ordinary bailee would have. Examples of common carriers are: Railroads, steamship lines, stages, express companies, telegraph companies, etc.

Carriers Obligations to Public.

Common law, as well as statute law, imposes many obligations and duties upon common carriers. As indicated above the common carrier must treat everybody alike, he cannot grant special privileges to one and charge excessive rates to another without becoming liable. He may not charge more than a reasonable price for the transportation of goods, although it is often difficult to determine just what a reasonable rate is. Excessive charges may be recovered back. The common carrier is obliged to use the greatest care and diligence in regard to the goods intrusted with him. If he is in any way responsible for damage to the goods he becomes liable to the extent of the loss. Should the damage be the result of an act of God then the liability of the car-

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STOCK RANCH—640 acres well fenced with woven wire, well watered by river, grass in abundance, land first class for farming, here is your opportunity. U. G. REYNOLDS, R. F. D. No. 3, Gladwin, Mich.

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Sunny Tennessee fertile farms, good water, houses, barns, orchards on each, rural routes, telephones. Sixty-five acres \$550, 295 acres \$400, 295 acres \$300. Free list. JENKINS & SON, Huntingdon, Tenn.

FARM FOR SALE, One mile from Normal School, Spring creek. Some timber. Address C. A. CAIN, Hillman, Michigan.

GLADWIN CO. FARMS—I own and control Improved and Unimproved farm lands. Write me describing fully what you need. U. G. REYNOLDS, R. F. D. No. 3, Gladwin, Mich.

OUR FARM LIST saves you time and money in buying farm. ASK FOR IT. MICHIGAN FARM HOME CO., Greenville, Mich.

127 ACRES—One hundred improved, No. 1 soil, twenty-five acres good bearing orchard, balance good timber. Good house and cellar. One mile from center of city on graded street. Thirty acres in good meadow, price \$60 per acre. Will allow \$100 for timber. D. W. STEWART, Big Rapids, Michigan.

FOR SALE or for rent on shares a 200 acre farm four and one-half miles northwest of Dexter, Mich. One hundred acres cleared, the rest woods and pasture. None but good farmers need apply. Address—MRS. LOUISE M. GATES, No. 1213 Center Ave., Bay City, Michigan.

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Choice Section Saskatchewan Farm Land. 640 acres rich soil, fine wheat district, short distance from good town. Price \$20 per acre. Terms 4 cash, balance 5 years. Should double in value within 3 years. Must be sold. Apply P. O. Box 756, Owen Sound, Canada

WHY PAY RENT when you can buy the Best Land in Michigan at from \$7 to \$25 an acre near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Staffed Bros., (owners) 15 Merrill Bldg., Saginaw, W. S. Michigan.

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Unlimited opportunities. Thousands of acres available at right prices. The place for the man wanting a home in the finest climate on earth. Write to a public organization that gives reliable information. Sacramento Valley Development Association, Sacramento, CALIFORNIA

THE BROWN AGENCY

For Central Michigan Farms Write for descriptions and prices. E. O. Hanes, Farm, Sales Mgr., Lansing, Michigan.

FARM BARGAIN—For sale farm, 175 acres, three miles from Decatur, Mich. 15 acres timber, 20 acres pepper mint and celery land; balance farm good loam soil. Eight room house, two barns, other buildings. Spring brook runs through both barn yards. Ideal Stock Farm. Would sell 116 acres. Special bargain if taken in next 30 days. For particulars write DEWEY & ROUSE, Marion, Michigan.

rier does not hold, a subject more fully explained in a later paragraph. Duties of Common Carriers Toward Shippers.

There are a number of things required of common carriers that have grown out of their relations with the public. They are obliged to receive freight, providing it is offered at a reasonable time and place, and this holds where the goods are consigned to a point beyond the reach of the lines of the concern receiving them. But this is not to be construed to mean that common carriers are compelled to take freight in violation of a law, as for example, the transportation of explosives on trains carrying passengers. Common carriers are bound to provide a sufficient number of suitable cars to handle the products naturally coming to them during the busiest seasons. It has been held that a shipper could hold a railroad company liable where notice had been given the company that a certain number of refrigerator cars would be needed, and then the shipper tenders more fruit than the cars ordered will carry, whereupon the company refuses to accept the surplus, although it is proven that the carrier could have handled the surplus. A further duty is to provide suitable facilities for handling freight at terminals. A failure to do this renders the company liable for damages resulting from inadequate or unsafe terminals. Freight should be sent by the regular transportation route and any deviation should be made only after notifying the shipper unless it is impossible because of the nature of the goods to receive back instructions. Where delay in transportation is due to negligence that is unreasonable and inexcusable, and it results in damage to the goods, the carrier is liable. The carrier is also liable if he delivers goods to the wrong party, or if he fails to deliver them at all unless they have been destroyed by an act of God and without negligence by carrier, or where the goods are delivered at the wrong place. But if public officials forbid the delivery of goods in conformity to a statute the carrier will not be held liable. Where freight is lost in transit the carrier must prove that it was lost by some cause for which the carrier is not responsible, otherwise the carrier stands liable. Such a cause may be an act of God with no negligence on the part of the carrier, or it may be that the goods were accepted at the shipper's risk.

Common Carrier's Rights and Immunities.

We have just mentioned some of the liabilities of the common carrier. It should be understood that common carriers have certain rights which they may exercise and certain immunities from responsibility. In the first place such persons or corporations have the right to make and enforce reasonable and proper regulations for carrying on the business as carriers to the protection of the public as well as the protection of their own interests. In the operation of such large business as are most common carrier concerns where much help is employed and many people are to be served the right to make and enforce proper and reasonable rules to facilitate the handling of trains, conserve the welfare and the safety of its patrons and others and give the greatest measure of service to the public, becomes an important feature in the carrying on of a common carrier business. But these rules must not contravene positive statutes nor deprive the individual of his rights.

Common Carrier's Liability May be Limited.

In all ordinary cases the general liability of a common carrier may be limited by a special contract with the shipper. This, of course, cannot be done where there is a constitutional or statutory prohibition to enter into such contracts. Such a contract should be plain, fair to both parties, i. e., the shipper should have a consideration for relieving the carrier of liability, and reasonable in its terms. The courts will usually not uphold a contract that excuses the carrier of willful misconduct and gross negligence, such contracts being contrary to public policy.

Common Carrier's Lien on Goods it Carries.

The common carrier can hold goods until the charges against them are paid. And when he holds goods for this purpose he is not liable as a common carrier, but as an ordinary bailee. He also has the usual means at his command to recover from the goods his compensation. After he has held them a reasonable time after the charges against them are due and demanded, he can go before a

(Continued on page 208).

Help the Horse Help You

Give him ideal working conditions. Protect his neck and shoulders with Ventiplex Collar Pads. Then see him throw his weight in the collar—then watch him pull. Then see how gladly he'll help you.

Ventiplex Pads

are made of our patent, porous, Ventiplex fabric. It's full of little air passages, allowing a free circulation of air. Absorbs moisture like a blotter. Draws it right through to the outside from whence it quickly evaporates. Easily washed. They keep the horse's neck and shoulders clean, dry and free from sores, galls, etc. Your dealer should have them in stock. If he hasn't, write us. Tell us his name and address.

BURLINGTON BLANKET COMPANY Makers of the famous "Stay-on" Blanket Dept. 49, Burlington, Wis. Canadian Address—Windsor, Ont.

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Made of Good Stock Shipped direct from factory at factory prices. We guarantee to please and save you money. May we send you large FREE catalogue? Write for it now. ELKHART CARRIAGE & HARNESS CO., Elkhart, Ind.

Best Conditioner Worm Expeller Death to Heaves "Guaranteed or Money Back." Coughs, Distemper, Indigestion, NEWTON'S Large for Heaves. At druggists or sent postpaid. THE NEWTON REMEDY CO., TOLEDO, OHIO

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Fire-Proof—Everlasting OUR FREE BOOKLET tells why the Guernsey is easy to erect and at very low cost; how best grade Ohio vitrified clay hollow-tile steel reinforced construction renders it absolutely proof against moisture, air, sun, wind and frost—the doors render it fire-proof. Tells why cheapest to build because first cost is last cost—no repairing, repainting or trouble. Agents wanted. Write for booklet, guarantee and full information FREE.

GUERNSEY CLAY CO., 1108 I. O. O. F. Bldg., INDIANAPOLIS, INDIANA

Breeders' Directory—Continued.

GUERNSEY BULL CALF Dropped Jan. 31st. Good big fellow beautifully marked. Sire Halcyon Star, by imported Bijou, grandson of Gov. of Chene, greatest sire on the island. Dam imported daughter of Lord Mar. 14 daughters in advanced Register. \$50 takes him. Avondale Stock Farm, Wayne, Mich.

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

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

SHEEP.

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

"OXFORDOWN SHEEP"—Descriptive and illustrated article sent free PARSONS, "The Sheep Man of GRAND LEDGE, MICH.

FOR SALE—40 Registered Rambouillet ewes with lamb—cheap if taken immediately. HOWARD M. RAYMOND, Grass Lake, Michigan.

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2 1/2 miles E. Morris, on G. T. R. R. and M. U. R. J. Q. A. COOK.

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

HOGS.

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

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

O. I. C.—TWO BOARS fit to head any C. J. THOMPSON, Rockford, Michigan.

O. I. C. SWINE—Write me for Pigs, pairs and trios, not asin. Have a number of service males of good type. Write me describing of your wants. A. J. GORDEN, R. No. 2 Dorr, Mich.

H. G. Keesler's Sixth Annual Brood Sow Sale

Feb. 26, 1913. Pure-bred Durocs.

Consisting of 32 head of bred gilts and tried sows safe in pig, to farrow last of March and April. Quality and breeding my standard. Parties from a distance will be taken care of at my expense by notifying me by postal before sale. Breeding of the sows will be furnished on request.

H. C. KEESLER, Prop., R. 5, Cassopolis, Mich.

E. H. BLACK, M. DONOHO, Auctioneers.

SENECA STOCK TONIC

(Medicated Salt.) The great worm destroyer. Satisfaction guaranteed or money back. 100 lbs. for \$4. The price at which it is always sold. No pay until satisfied.

O. I. C. Swine, both sexes. Males weighing 100 to 22 lbs. Herd registered in O. I. C. Association GEO. P. ANDREWS, Danville, Ingham Co., Mich.

Improved Chesters—Young breeding stock, either sex. Also a few tried sows to be bred for spring farrow and early fall pigs. W. O. WILSON, Okemos, Mich.

O. I. C. Extra choice bred gilts, service boars and spring pigs, not akin from State Fair winners. Avondale Stock Farm, Wayne, Mich.

O. I. C. Pigs of September and October farrow for sale cheap. JOHN BERNER & SON, Grand Ledge, Mich.

O. I. C's—All ages growthy and large, sows bred. Males ready, 100 to select from. Attractive prices on young stock. H. H. Jump, Munith, Mich.

O. I. C's—Boar pigs all sold, choice gilts. Place your order for spring pigs with me. Your money's worth or your money back. Fred Nickel, R. 1, Monroe, Mich.

O. I. C's—A fine lot of last spring stock for sale, big growthy type, either sex, pairs not akin. Sired by Grand Champion Boar, Scott No. 1. Half mile west of depot. OTTO B. SCHULZE, Nashville, Mich.

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. SPECIAL BARGAIN in summer pigs. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

Duroc Jerseys—for sale: 20 fine service boars of fancy breeding and individual quality. Prices reasonable. John McNeill, North Star, Mich.

DUROC JERSEYS—A Few Gilts for Sale CAREY U. EDMONDS, Hastings, Michigan.

DUROC GILTS—\$20 to \$30. Shropshire Ewes \$20 to \$30. KOPE-KON FARM, Kinderhook, Michigan.

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

Butler's Big Bone Poland Chinas. We don't claim to own all the good hogs in the U. S., but we do claim to have bred and sold more big type Poland in the last ten years than any two other breeders in Michigan. If you want a good fall boar write J. C. BUTLER, Portland, Michigan.

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

POLAND CHINAS—Either sex, all ages. Something good at a low price. P. D. LONG, R. No. 8, Grand Rapids, Michigan.

P. C. BROOD SOWS—bred for April and May farrow. Big bone, Prolific. Also boars ready for use. Maplewood Stock Farm, Allegan, Mich.

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

P. C. BOARS AND SOWS—large type, sized by Expansion. A. A. WOOD & SON, Saline, Michigan.

POLAND CHINA SOWS—bred Single Comb Black. Minorca cockerels. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

LARGE TYPE P. C.—Largest in Mich. A few late March Gilts weighing 300 lbs. and over. Bred to Big Durocs, the largest pig in U. S. of age weighed 512 lbs. at 10 mo. and 18 days old. Come or write, I can show the goods, free livery. W. E. Livingston, Parma, Mich.

THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD.

IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10 Portland, Mich.

LARGE Yorkshires—Choice breeding stock, all ages, not akin, from State Fair prize-winners. Pedigrees furnished. W. C. COOK, R. 42, Box 22, Ada, Mich.

MULEFOOT HOG SALE.

Forty Sows and Gilts, all bred, and some good boars. Third annual PUBLIC SALE FEBRUARY 20th.

Write me for free catalog, ready now. Full of pictures of the hogs on sale. G. C. KREGLOW, ADA, OHIO.

CHOLERA PROOF HOGS.

I keep from 4000 to 6000 grade Yorkshire and Poland China cholera immune hogs and am selling prolific brood sows, also shoats weighing from 50 to 150 lbs. at prices that make them desirable on cholera infected farms. Sows weighing more than 100 lbs. are supposed to farrow in April and May. I expect to have several thousand pigs from immune sows and boars for sale next spring.

ALVAN BROWN'S-PIG FARM, Grand Rapids, Michigan.

LARGE YORKSHIRE SWINE—August farrowed gilts \$20 each. No males in stock. Geo. S. McMullen, Citiz. Phone, Grand Ledge, Mich.

Lillie Farmstead YORKSHIRES

A splendid lot of fall pigs at reduced prices, pairs and trios not akin. Young sows and gilts bred for April farrow. Your money back if you are not satisfied. COLON C. LILLIE, Coopersville, Mich.

Markets.

GRAINS AND SEEDS.

February 12, 1913.

Wheat.—The market seems to be holding on about an even basis with a week ago, although many factors are working to change prices. Chief among the bearish influences is the heavy shipment of wheat from South America. There appears to be a good crop in the southern country and present prices are encouraging its rapid marketing. Among the bullish features are the drought in India, which may entirely overbalance the crop in Argentina, the resumption of the Balkan war, the smaller world's supply and a decrease in the primary receipts of the United States. Although the bears feel confident that they have the better outlook yet on every decline in the market there are buyers ready to take whatever wheat is offered. One year ago the price for No. 2 red wheat was 97½¢ per bu. Detroit quotations are as follows:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	1.12½	1.11½	1.16	96½		
Friday	1.12½	1.11½	1.16	96½		
Saturday	1.13	1.12½	1.16½	97		
Monday	1.13	1.12	1.16	96½		
Tuesday	1.12½	1.11½	1.14½	96½		

Chicago, (Feb. 11).—No. 2 red wheat, \$1.09½@1.11½; May, 93½¢; July, 91½¢.

New York, (Feb. 11).—No. 2 red, \$1.10 f. o. b. affloat; July, 98½¢ per bu.

Corn.—The average price for corn is a fraction higher than a week ago. Colder weather is a bullish feature. On Monday primary receipts were reported at 1,589,000 bu., against 1,930,000 bu. a week earlier, but the better prices of the past few days again encouraged selling by farmers. One year ago No. 2 corn was quoted on the local market at 66½¢ per bu. Quotations are as follows:

	No. 3	No. 3	Yellow.
Thursday	51	52	52½
Friday	51½	52½	52½
Saturday	51½	52½	52½
Monday	51½	52½	52½
Tuesday	51	52	52½

Chicago, (Feb. 11).—No. 2 yellow, 50½¢; No. 3 yellow, 53½¢; No. 3 white, 53½¢ per bu.

Oats.—This market continues to advance, present prices being over a cent above the highest figure of a week ago. The cheapness of this feed has increased its use, causing a large proportion to be absorbed on the farms and by feeders. Primary receipts were 864,000 bu. on Monday, compared with 925,000 bu. a week earlier. One year ago standard oats were quoted at 53½¢ per bu. Detroit quotations are as follows:

	Standard.	No. 3	White.
Thursday	36½	35½	35½
Friday	37	36	36
Saturday	37	36	36
Monday	37½	36½	36½
Tuesday	37½	36½	36½

Chicago, (Feb. 11).—No. 2, 33½¢; No. 3, 34½¢; May, 34½¢; July, 34½¢ per bu.

Beans.—Cash beans are unchanged. Immediate, prompt and February shipments are quoted at \$2.10; May, \$2.20 per bu.

Chicago, (Feb. 11).—Prices here rule lower than last week. Pea beans, hand-picked, \$2.20; red beans for choice, \$2.05@2.10 for prime; red kidneys, \$2 for old and \$2.35@2.40 for new.

Clover Seed.—A little weakness developed in the seed market last week and prices now rule lower. Prime spot is quoted at \$12.35; prime alsike \$13.50 per bushel.

Toledo, (Feb. 11).—Values lower. Cash and February, \$12.30; March, \$12.35; alsike, prime, \$13.55; March, \$13.65 per bu.

Rye.—Lower, cash No. 2 quoted at 63¢ per bu.

Chicago, (Feb. 11).—No. 2 quoted at 63½¢ per bu.

Barley.—Chicago, (Feb. 11).—Higher, quoted at 50¢ per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.60; second, \$4.90; straight, \$5.20; clear, \$4.90; spring patent, \$5.10; rye flour, \$4.90 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$24; coarse middlings, \$2; fine middlings, \$23; cracked corn, \$24; coarse corn meal, \$21.50; corn and oat chop, \$20 per ton.

Hay.—Unchanged. Carlots on track at Detroit. No. 1 timothy, \$14.50@15; No. 2, \$13@13.50; light mixed, \$13.50@14; No. 1 mixed, \$12.50@13 per ton.

Chicago.—Demand light and market lower. Choice timothy, \$16@17; No. 1, \$13.50@14.50; No. 2 and No. 1 mixed, \$11.50@12; No. 3 and No. 2 mixed, \$9@11; clover, \$7@11; alfalfa, choice, \$16@17; do. No. 1, \$14.50@15.50; do. No. 2, \$11@13 per ton.

New York.—Market lower; standard, \$18.50@19.50 per ton; No. 1, \$20@21; light clover, mixed, \$18.

Straw.—Car lot prices on wheat and oat straw on Detroit market are \$8.50@9 per ton; rye straw, \$10@11 per ton.

Chicago.—Lower. Rye, \$7@7.50; wheat straw, \$5.50@6; oat straw, \$6@6.50 per ton.

New York.—Rye straw, \$19@20 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Good quality stock continues firm and higher everywhere. Elgin advanced another cent on Monday and creameries have made a like gain in the local market. Jobbing prices in the Detroit market are: Fancy creamery, 35¢

per lb; firsts, 34¢; dairy, 22¢; packing stock, 21¢.

Elgin.—Market firm at 35¢.

Chicago.—Market generally firm, with creamery goods in exceptional demand at a good advance, the under grades, as a rule, showing the most gain. Dairies of good quality in fair demand at former values. Quotations: Extra creamery, 35½¢; extra firsts, 33½¢@34½¢; firsts, 31@31½¢; seconds, 27@29¢; dairy extras, 30¢; firsts, 26¢; seconds, 22¢; packing, 12@20½¢ as to quality.

New York.—Steady; both creamery and dairy show an advance of a full cent or better. Creamery extras, 37@38¢; firsts, 34@36½¢; seconds, 31@33½¢; thirds, 29@30¢; state dairy best, 34@35¢; good to prime, 29@33¢; common to fair, 23@28¢; packing, 17@21½¢ as to quality.

Eggs.—The colder weather of the past week has not been severe enough to check the production of eggs and receipts continue heavy at all points. Locally prices have sagged 2¢ since this time last week. At Detroit current offerings, candled, and cases included, are quoted at 22½¢ per dozen.

Chicago.—Receipts at this week's opening were practically double those of a week ago and values are 1@1½¢ lower. More uniform quality is indicated by narrowing of quotations on the various grades. Miscellaneous receipts, cases included, are quoted at 18@22¢; do. cases returned, 17@21½¢; ordinary firsts, 18@20¢; firsts, 22¢; refrigerators, firsts, 16½@17¢ per dozen.

New York.—Market weak, practically all grades quoted 1¢ lower. Fresh gathered extras, 26@27¢; extra firsts, 24½@25¢; firsts, 23@24¢; seconds and lower grades, 20@22¢; western gathered whites 25@28¢.

Poultry.—The renewed interest manifested in this market this week seems to center in live stuff, chickens receiving most attention, but nearly all kinds are quoted higher. Quotations: Live—Spring chickens, 15½@16¢; hens, 15@15½¢; No. 2 hens, 12@14¢; old roosters, 10@12¢; turkeys, 18@19¢; geese, 15@15½¢; ducks, 18@19¢ per lb.

Chicago.—Local demand sufficient to hold market steady. Chickens in light supply and one cent higher. Quotations on live are: Turkeys, good weight, 15¢; others, 10¢; fowls, good, 15¢; spring chickens, 16¢; ducks, large, fat, 17¢; do. thin, ordinary, 15@16¢; geese, full feathered, 13¢; do. plucked, 8@10¢ per lb.

New York.—Dressed stock firm. Fresh killed western chickens, 14@23¢; fowls, 14½@17¢; turkeys, 14@24¢ per lb.

Cheese.—Steady; last week's values rule. Quotations: Wholesale lots: Michigan flats, 15½@16¢; New York flats, 18½@19¢; brick cream, 16½@17¢; limburger, 17½@18¢.

Veal.—Detroit.—Dull and lower. Fancy 13@14¢; choice, 12@12½¢ per lb.

Chicago.—Fair to choice, 80@110 lbs. 13@14¢; extra fancy stock, 14½¢; fair to good chunky, 12@13¢.

FRUITS AND VEGETABLES.

Apples.—Slight improvement in deal with prices a little better. Detroit quotations now are: Fancy, per bbl., \$2.50@3.50; ordinary, \$1@1.50.

Potatoes.—Good supply and quiet trade. Michigan stock in car lots, 50¢ in sacks, 46¢ in bulk.

Chicago.—Offerings continue to run below those of a week ago and a year ago and prices are advanced. Fancy Michigan stock 48@50¢ per bu.

DETROIT RETAIL PRICES.

Eastern Market.—There was a good market on Tuesday morning, with plenty of buyers on hand. Prices were ruling a little firmer. Apples were in good supply with best Steel Reds selling at \$1, other grades and kinds ruling from 65¢@85¢ per bu. Potatoes were a little firmer at 55¢ per bu. Cabbage was plentiful and in good demand at 25¢; red, 40¢ per bu. Onions, 65¢@75¢; rutabagas, 30¢; carrots, 35¢; parsnips, 40¢@45¢ per bu; pork, \$10.50@11 per cwt; veal, 15¢ per lb. The sheds were fairly well filled with hay which is selling from \$16@20 per ton, loose.

THE LIVE STOCK MARKETS.

February 10, 1913.

Buffalo.

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

Receipts of stock here today as follows: Cattle, 90 cars; hogs, 60 double decks; sheep and lambs, 75 double decks; calves, 700 head.

With 90 cars of cattle on our market, and with favorable weather, our market advanced over last Monday's prices from 10@15¢ per cwt. all around, and in some instances on the heavy-weight good quality cattle, weighing from 950 to 1050 lbs., 25¢ per cwt. While the market was slow, everything was sold at the close, and the market closed steady with the opening.

We quote: Best 1350 to 1500-lb. steers, \$8.25@8.75; good to prime 1200 to 1300-lb. do., \$7.75@8.25; do. 1100 to 1200-lb. do., \$7.35@8.15; coarse, plainish 1100 to 1200-lb. do., \$7.25@7.75; medium butcher steers, 1000 to 1100, \$6.75@7.50; butcher steers, 950 to 1000, \$6.75@7.50; light butcher steers, \$6@6.50; best fat cows, \$6@6.75; butcher cows, \$4.85@5.50; light do., \$4.25@4.75; cutters, \$3.75@4.25; trimmers, \$3.50@3.60; best fat heifers, \$7.25@7.75; medium butcher heifers, \$6.25@6.75; light do., \$5.25@5.75; stock heifers, \$4@4.25; best feeding steers, dehorned, \$6@6.60; light common stockers, \$4.50@5; prime export bulls, \$6.50@6.75; best butcher bulls, \$6.25@6.50; bologna bulls, \$5.25@5.75; stock bulls, \$4.75@5.50; best milkers and springers, \$65@75; common to fair kind do., \$40@50.

Receipts of hogs today were very light, in fact, the lightest for some time. De-

mand was good from both shippers and packers and the market anywhere from 15@25¢ higher than Saturday's best time; big advance on the mixed grades of hogs. It was generally a one-priced market for everything, \$8.75, with a few light decks at \$8.80. Roughs, \$7.50@7.75; stags, \$6@7.

The sheep and lamb market was active today, with prices about the same as the close of last week; most of the choice lambs selling from \$9.40@9.50. Yearlings from \$7@8.50. Look for about steady prices the balance of the week, with moderate receipts.

We quote: Choice lambs, \$9.40@9.50; cull to fair do., \$6@9.25; yearling wethers \$8@8.50; yearling ewes, \$6.50@7; wethers, \$6.25@6.50; handy ewes, \$5.75@6; heavy ewes, \$5.50@5.75; cull sheep, \$3.50@4.75; bucks, \$3.50@4.25; veals, choice to extra, \$11.50@12; fair to good do., \$10@11; heavy calves, \$4.50@6.

Chicago.

February 10, 1913.

Cattle. Hogs. Sheep. Received today 19,000 54,000 25,000 Same day last year, 26,144 54,192 33,543 Received last week, 43,876 149,452 93,201 Same week last year, 51,679 189,100 113,262

A meager run of cattle for Monday brought about a pretty general advance today of at least 10¢, with demand centering strongly in the medium and low-priced beef steers and butcher stock. Hogs, despite the unusually large receipts, were purchased briskly at stronger prices, and desirable light weights were a nicked higher, numerous lots going at \$8.20. Hogs marketed last week averaged 229 lbs., against 217 lbs. a year ago, 231 lbs. two years ago and 209 lbs. three years ago. Sheep and lambs were active at strong prices.

Cattle have met with a better demand for a week past than was expected at the beginning of Lent, and the undertone of the market was firmer, with moderate receipts. Beef steers sold chiefly at a range of \$7.25@8.50, with only moderate sales at \$6.25@7, while the better class of corn-fed cattle brought \$8.50@9, with a good grade bringing \$8 and over. Plain to medium warmed-up steers brought \$7.25@7.60 and medium to good short-fed lots \$7.65@7.95, while the choicer class of little yearlings found buyers at \$7.75@8.50. The cold snap interfered materially with the movement of stock trains, and a great many consignments were very late in arriving. Comparison with five weeks ago shows that since then there has been a marked narrowing in prices, the best going much lower and the commonest much higher, steers having sold then for \$5.75@9.40. Cattle sold much higher than in most former years, with the cheaper kinds showing especially marked advances. Butchering lots of cows and heifers have been going at \$4.65@7.40, while cutters sold at \$4.15@4.60, canners at \$3.10@4.10 and bulls at \$4.20@6.65. There was a good demand for stockers and feeders, and all that kept this trade within bounds was the limited offerings of desirable lots, prices for which were extremely high. Stockers sold usually at \$5@5.50 for inferior lots, with the best lots firm at \$6.75@7.40, while feeders carrying much weight sold for \$6.60@7.65. It will be seen by these figures that choice stock steers and the better class of feeders are selling very close together. There has been quite a demand for breeding cows to ship west, but the offerings were greatly inadequate. Calves sold anywhere from \$4@7 for the less desirable heavy weights up to \$9@10 per 100 lbs. for the best class of light weaners. Milk and springers sold moderately at \$40@80 each, good cows being usually wanted.

Hogs made a great record last week when the best lots advanced to \$8.15 per 100 lbs., the highest prices reached in a long time. Supplies have been falling off in volume of late, and there has been sharp competition between local packers and eastern shippers to obtain the best lots, with local speculators taking a hand frequently and thereby aiding in the upward movement. The upward movement went so far that country shippers were able last to offer \$7.25 to stockmen for their hogs, and the market was unusually strong, although after the sharp upturn quite a reaction occurred. The bulk of the hog sales took place within a narrow range of prices, with lots averaging around 164 to 260 lbs. among the highest sellers and coarse heavy sows the worst sellers. The official statement of the stocks of provisions in Chicago warehouses on the first day of the month showed 96,230,963 lbs., compared with 74,800,099 lbs. a month earlier and 134,997,292 lbs. a year ago, the increase during January being much smaller than usual, as a big share of the hogs marketed went for filling the enormous fresh pork trade. The highest prices were paid Saturday, when hogs went at \$7.65@8.15, the highest quotations since early last November. Sheep and lambs were marketed last week much less liberally than heretofore, with sheepmen unwilling to ship in freely, as they believed that by waiting, they could put prices up again.

THE NOMID SYSTEM.

(Continued from page 207).

court of equity and have a decree for their sale. With this authority the company can sell the goods, retain the transportation charges, pay the necessary legal fees and expenses of selling, and return the remainder, if any, to the consignee, or shipper.

Not Always Liable for Losses.

In the case of property that has natural qualities which cause it to quickly decay or spoil, as fruits, the common carrier is not liable to loss due to such inherent cause where there is no negli-

gence on his part. But should the company act negligently and through that negligence the natural forces of decay would be set to work, as, for instance, where the common carrier is handling fruit in refrigerator cars and neglects to keep these cars properly iced, then the carrier would become liable.

(Continued next week).

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THIS IS THE FIRST 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 6, 1913.

Cattle.

Receipts, 1047. Light butchers and bulls strong; fat grades and canners 10@15c lower; best grades dull.

We quote: Best steers, \$7.50; steers and heifers, 1000 to 1200, \$6.50@7; do. 800 to 1000, \$6@6.50; do. that are fat, 500 to 700, \$5@6.75; choice fat cows, \$5.50@6; good do., \$4.50@5; common cows, \$3.25@3.75; canners, \$3@3.50; choice heavy bulls, \$5.50@6.25; fair to good bolognas, bulls, \$5@5.25; stock bulls, \$4@4.75; milkers, large, young, medium age, \$50@65; common milkers, \$35@45.

Haley & M. sold Thompson Bros. 16 butchers av \$47 at \$5.65, 2 cows av 750 at \$4.25, 1 bull weighing 910 at \$5.75, 3 cows av 1000 at \$4.75; to Newton B. Co. 10 butchers av 765 at \$6.50, 10 cows av 965 at \$4.65; to Kull 2 do av 1010 at \$5, 9 heifers av 603 at \$5.30, 2 cows av 1010 at \$5, 9 heifers av 603 at \$5.30, 2 cows av 930 at \$4.25; to Sullivan P. Co. 3 bulls av 1133 at \$6, 5 steers av 988 at \$7.25, 8 do av 704 at \$6; to Schuer 2 cows av 870 at \$4.25; to Goose 12 butchers av 283 at \$4.90; to Sullivan P. Co. 3 cows av 900 at \$4.25, 6 do av 1166 at \$5, 1 do weighing 1070 at \$4.50, 8 heifers av 630 at \$5.50, 1 do weighing 570 at \$4.

Youngs sold Sullivan P. Co. 7 steers av 903 at \$6.75.

Veal Calves.

Receipts, 367. Best grades 50c higher and others steady. Best, \$10@11; others, \$4@9.50; milch cows and springers, good, strong, common, dull.

Roe Com. Co. sold Goose 5 av 110 at \$10.50, 10 av 140 at \$7.50, 3 av 140 at \$10, 4 av 135 at \$10.

Haley & M. sold Newton B. Co. 13 av 130 at \$10.50.

Bishop, B. & H. sold Mich. B. Co. 4 av 125 at \$10, 2 av 140 at \$10.50, 2 av 130 at \$10.50; to Goose 4 av 135 at \$9, 1 weighing 170 at \$8.50, 5 av 130 at \$8.50; to Thompson Bros. 4 av 150 at \$10.50, 8 av 115 at \$8; to McGuire 1 weighing 140 at \$10; to Burnstine 8 av 120 at \$10, 2 av 90 at \$8, 5 av 115 at \$10; to McGuire 3 av 165 at \$10.50, 4 av 135 at \$10.50, 7 av 150 at \$10.50, 9 av 140 at \$8, 2 av 170 at \$10.50; to Hammond, S. & Co. 9 av 140 at \$10.

Sundry Sales to Rattkowsky 4 av 145 at \$10; to Mich. B. Co. 2 av 130 at \$10, 2 av 120 at \$10, 6 av 140 at \$9; to Bray 3 av 135 at \$10; to Rattkowsky 2 av 195 at \$4.75; to Burnstine 1 weighing 190 at \$11, 2 av 150 at \$9.50.

Sheep and Lambs.

Receipts, 3777. Market 25@35c higher than last week on lambs; sheep steady; quality common. Best lambs, \$8.75; fair o good lambs, \$8@8.50; light to common lambs, \$5.50@7; fair to good sheep, \$4.50@5; culis and common, \$2.75@3.25.

av 50 at \$7, 14 do av 45 at \$6.50, 47 do av 65 at \$7.75, 32 sheep av 90 at \$4.65; to Youngs 11 do av 80 at \$2.60, 88 lambs av 80 at \$8.50; to Mich. B. Co. 17 lambs av 80 at \$8.50; to Bray 35 do av 60 at \$7, 10 sheep av 83 at \$3.50.

Roe Com. Co. sold Thompson Bros. 47 sheep av 105 at \$4.50, 2 lambs av 85 at \$8.25, 3 do av 120 at \$7.50.

Hogs.

Receipts, 2628. None sold up to noon; prospects look as shown below.

Range of prices: Light to good butchers, \$7.80@7.85; pigs, \$7.90@8; light yorkers, \$7.80@7.85; stags one-third off.

Roe Com. Co. sold Sullivan P. Co. 250 av 180 at \$7.90.

Bishop, B. & H. sold same 75 av 125 at \$7.90.

Bishop, B. & H. sold Parker, W. & Co. 1500 av 190 at \$7.85, 310 av 260 at \$7.80, 1010 av 160 at \$7.90.

Haley & M. sold Hammond, S. & Co. 380 av 175 at \$7.90, 610 av 190 at \$7.85.

Spicer & R. sold same 110 av 160 at \$7.90, 450 av 190 at \$7.85.

Friday's Market.
February 7, 1913.

Cattle.

Receipts this week, 1761; last week, 782. Market steady at Thursday's prices. Extra dry-fed steers, \$7.50@7.75; steers and heifers, 1000 to 1200, \$6.75@7.25; do. 800 to 1000, \$6.50@7; do. that are fat, 500 to 700, \$5.50@6.50; choice fat cows, \$6@6.50; good do., \$4.75@5.50; common cows, \$4.25@4.50; canners, \$3.50@4; choice heavy bulls, \$6.50; fair to good bologna bulls, \$5.75@6.25; stock bulls, \$4.50@5; milkers, large, young, medium age, \$50@65; common milkers, \$30@40.

Veal Calves.

Receipts this week, 625; last week, 671. Market steady at Thursday's prices. Best \$10@11; others, \$4. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 5680; last week, 7764. Market for good lambs 5@10c higher; sheep steady; light to common lambs dull and hard to sell, but no higher; best lambs, \$8.85; fair lambs, \$7.75@8.25; light to common lambs, \$5@6.50; fair to good sheep, \$4.50@5; culis and common, \$2.75@3.50; handy western wethers, \$7.50@8.

Hogs.

Receipts this week, 5171; last week, 6293. Market 5@10c higher than on Thursday. Light to good butchers, \$7.95@8; pigs, \$8@8.75; light yorkers, \$7.95@8; tags one-third off.

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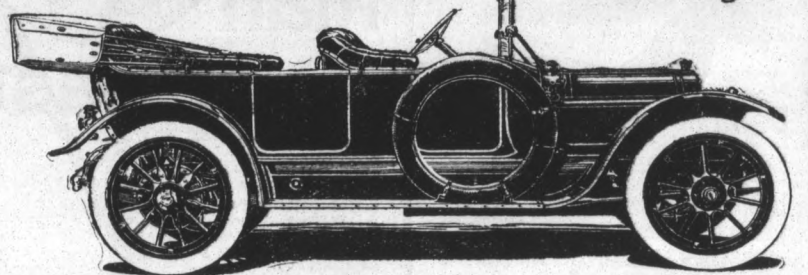
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Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Sweeney—Chicken Lice.—Our 9-year-old mare sweeneyed shoulder four months ago our local Vet. prescribed a remedy which appears to fail to effect a cure. I also have an eight-month-old colt that is thin and itchy. This colt occupies a stable where chickens were kept a year ago and he may have some lice. C. H. A., Eaton Rapids, Mich.—Clip off hair and apply one part cantharides and eight parts fresh lard every week or ten days until the shoulder muscles grow to their normal size. Apply insect powder to your colt.

Thin Hoofs.—Two years ago I purchased a two-year-old filly and after using her a few times she went lame and sore in both fore feet. Her hoofs are thin, has not been shod for over a year, but when walking on hard ground she flinches badly, but moves fairly comfortable when walking on soft ground. She also has a corn in one foot. Have consulted two different Vets., one advised blistering coronet, this failed to help her and the other said nothing could be done that would help her. R. L. O., Ithaca, Mich.—Her hoofs are too light and weak for weight of body and all that can be done is by applying shoes to protect weak sole and small nails should be used.

Hide-bound.—I have a seven-year-old horse that is not thriving, his hide sticks fast to bones of back and every time he moves he grunts as if in pain. When led to water he is slow in lowering head and I might add I am working him only enough for exercise. He has been treated by a capable Vet. but does not improve. R. G., Manton, Mich.—Groom him well twice a day. Give him 1 dr. ground nux vomica, 1 oz. ground gentian and 1/2 oz. Fowler's solution at a dose in feed three times a day. He should be well fed and also have a change of feed.

Obstructed Teat.—I have a cow that had one teat hurt, leaving a bunch about the size of bean, which makes it difficult to milk her. H. A. B., Dewitt, Mich.—If this bunch is situated so that it can be cut out, this would be the proper thing to do; if not, apply tincture iodine three times a week.

Heifer with Six Teats.—I have a three-year-old heifer who has six teats, two of which are very small, and I would like to know if they can be removed. I can get a little milk from these small teats, but I would like to know if they can be safely removed? A. A. W., Chesaning, Mich.—If you will tie a silk cord that has been dipped in one part carbolic acid and nine parts olive oil tightly around teats close to udder and allow it to remain on until end of teat sloughs off, I believe it will be as convenient way as you can remove them. Or they can be removed with a knife, but it may cause you more trouble.

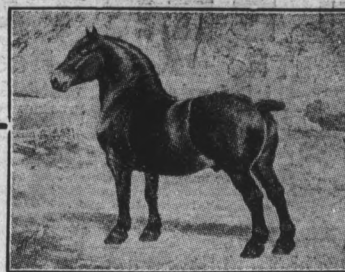
Sidebone.—My eight-year-old mule is lame, the result of a sidebone, and I would like to know how to treat him. C. H. E., Maple City, Mich.—Lower heels and apply one part iodine, one part red iodide mercury and eight parts lard every two or three days, or as often as it is necessary to keep the part blistered.

Cow Holds up Milk.—I have a four-year-old cow that for the past 12 months has been inclined to hold up milk in both fore quarters of udder. This same cow came fresh a few days ago and is much the same as last year. H. R. T., Hesperia, Mich.—Her udder may lack development of fore quarters; therefore, she gives less milk than from hind quarters. Nothing can be done more than careful milking, kind treatment and feeding her at milking time.

Cows and Pigs Have Diarrhoea.—Would like to know what to do for my cows and pigs that are troubled with diarrhoea. I am feeding cornstalks, bean pods and ground corn, oats and barley. C. H. F., Shepherd, Mich.—Perhaps a change of feed and water might benefit them and you had better discontinue feeding the beet tops. Mix together equal parts of ground ginger, gentian, powdered catechu and cinnamon and give each cow two tablespoonfuls at a dose and each pig a teaspoonful in feed three times a day. Your stock should be kept warm, dry and comfortable.

Loss of Power.—This morning one of my pigs was unable to get up and the whole trouble appears to be in hind quarters, but their appetite is fine. C. S., Kalkaska, Mich.—Feed your hogs less corn, more oats, oil meal, tankage and roots and if his bowels are constive give either castor oil or epsom salts to open them. Also give 10 grs. sodium salicylate at a dose in feed two or three times a day.

Chronic Cough.—I have a cow that came fresh Jan. 10, 1913, that appears to be in good health, but suffers from a chronic cough. W. N. W., Swartz Creek, Mich.—Give her 1 dr. guaiacal and a desertspoonful tincture of opium in 2 ozs. of raw linseed oil at a dose three times a day.



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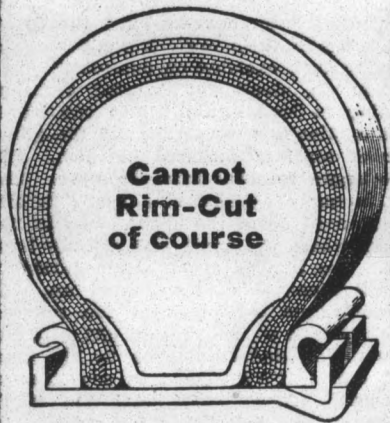
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FIFTH NATIONAL CORN SHOW.

(Continued from page 183).

its effort to stimulate agriculture in the south, the United States Department of Agriculture made the largest exhibit at this show that it has ever made. This exhibit covered all phases, from soils to schools, from grains and grasses to refrigerated beef, from road building to heavy power farming.

Schools.—The increased interest in rural school development was reflected in larger exhibits of school, church and community work. A model of an ideal community center was exhibited under the direction of Miss Carney, of Illinois. The model included a consolidated school, a church, grange hall, creamery and laundry, parsonage, teacher's cottage, school barns and fair grounds sheds. The plan was to center the community about the school and the church, with the grange introducing the social features and helping the co-operative development through the co-operative creamery and community laundry. The school barns and fair ground sheds were to be used in the local school and community fairs, festivals and carnivals. Miss Anna B. Taft represented the Church and Country Life Department of the Board of Home Missions, and the church and school studies attracted general attention. The Winthrop Normal School of South Carolina, also made an exhibit of its home economic work in sewing, cooking and general housekeeping, while a model improved school room contrasted with an unimproved school room, gave suggestions for buildings and equipment.

A strong program of addresses by men of national reputation was given throughout the two weeks of the show. The attendance was good, although not up to the standard of two years ago.

The leading awards follow:

Ten Ear Awards—Dent.
Central Zone.—White, J. T. Henderson & Son, Shelbyville, Ky.; yellow, Charles Short, Greenburg, Ind.; mixed, G. A. Brown, Franklin, Ind.
Northern Zone.—White, N. R. Raessler, Beloit, Wis.; yellow, N. R. Raessler; mixed, Chris Stoen, Bereford, S. D.
Eastern Zone.—White, Josiah Massey, Chestertown, Md.; yellow, Burton Bayard, Waynesburg, Pa.; mixed, D. M. Landis, Lancaster, Pa.
Southern Zone.—White, G. T. Buford, Pulaski, Tenn.; yellow, B. A. Rucker, Delaplane, Va.; mixed, G. L. Fentress, Sansaba, Tex.
Western Zone.—No samples entered.
National Sweepstakes.—White, J. T. Henderson & Son; yellow, Charles Short; mixed, C. A. Brown.
Grand Champion (winner Indiana trophy)—Charles Short.

Single Ear Awards—Dent.
Eastern Zone.—Pucey Cloud, Kennett Square, Pa.
Central Zone.—Joe Helms, Richmond, Ind.
Northern Zone.—N. R. Raessler, Beloit, Wis.
Southern Zone.—Henry Manteke, News Ferry, Va.
Western Zone.—No entries.
Grand Championship (winner Kellogg trophy)—Joe Helms.

Ten Ears—Flint.
Northern Zone.—George J. Friederich, Brooklyn, Mich.
Eastern Zone (Second Grand Championship)—James M. Moore, Bethlehem, Pa.

Single Ears—Flint.
Northern Zone.—George J. Friederich, Michigan.
Eastern Zone (Second Grand Championship)—N. I. Bowditch, Framingham, Mass.

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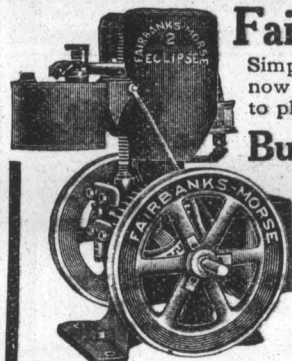


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I'm going to turn the engine world upside down with this offer. It's a wonderful offer—the most liberal engine offer anybody ever thought of. But that's the way! do business. I won't take a man's money until he is thoroughly, absolutely and permanently satisfied. That's why 125,000 farmers say: "The only way is the Galloway."

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E. L. Davis, South Gibson, Pa. I wish to say that the 5 H. P. gasoline engine I bought of you has given perfect satisfaction. I have used it on a three-horse threshing cleaner this fall, and have recommended your make of engine to everyone, both in price and quality. Two parties, especially, who own an engine, admitted to me that my Galloway Engine was much simpler than theirs and run just as nice. I will do what I can for your business in my neighborhood.

Joe A. Oliver, Seneca, Neb. Received your 5 H. P. engine about six months ago and it has never given me a minute's trouble since. Had an engine before, but the Galloway has them all skinned a city block. Have been working two days on another make to get it to run, but it isn't built to run.

Em Probst, Kennedale, Texas. I received the engine all O. K. and it is the simplest and smoothest running engine I ever saw. I have been running engines over 25 years and I would not give the 5 H. P. Galloway for any one I ever saw. Everyone that sees my engine says it's a dandy. I am running a ten-cow dairy and I run a cream separator, and churn and pump, sausage mill and grist mill and am to get me a wood saw and an emery wheel and grindstone attached to engine. Anyone can run it. I can start it and go about my work, and I want to say it has the best governor that I ever saw.

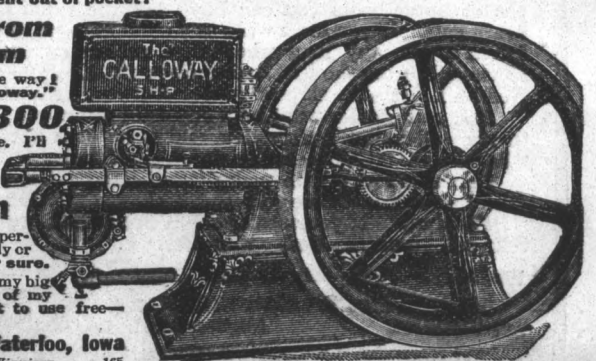
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The Steel Shoe Man

I want to send a pair to you on free examination. I want you to put your feet in them and walk around the house just to feel how much better they are than the best pair of all-leather workshoes ever made.

No More Corns, Bunions or Callouses

This shoe has absolute foot form—and the sole being of steel it cannot warp, twist, nor draw out of shape. Consequently, it is easy to be seen that corns, bunions, callouses, etc., cannot be irritated, and no portion of the foot be rubbed so as to start new miseries of this kind. No all-leather shoe can fit after it has a twisted, broken sole that allows the uppers to crease up into galling wrinkles.

Save Your Health

This steel soled, waterproof shoe is an absolute protection to your health, aside from being a comfort to your feet; for you may work all day in mud and water with your feet powder dry. You escape colds, rheumatism, neuralgia, the dreaded pneumonia, and the long list of ills that result from damp or wet, cold feet.

Saves \$10 to \$20

One pair of these light, springy, comfortable shoes will outlast three to six, or even eight pairs of the best quality all-leather workshoes. There are no repairs—and no loss of time, or trouble of any kind. The soles and sides (as shown in illustration) are stamped in one

seamless piece from light, thin, springy steel, secured firmly to uppers of the very best quality, soft pliable leather—absolutely waterproof and almost indestructible. The soles are studded with *Adjustable Steel Rivets*, which gives perfect traction, firm footing, and protect the soles from wear. The rivets themselves (which take all the wear) can be replaced when partly worn. 50 rivets cost but 30 cents, and should keep the shoes in good repair for two or even three years.

These Shoes Are Lighter Than Leather Work Shoes

and the firm, yet springy, elastic tread gives you an ease and lightness of step and comfort that delights your feet, and gives your whole body a resiliency that lifts the pain and burden from the work of the day. You can walk more, stand more, do more, earn more—and live longer in perfect muscular health and strength. Men's sizes, 5 to 12—Boys' sizes, 1 to 4. Six, nine, twelve and sixteen inches high.

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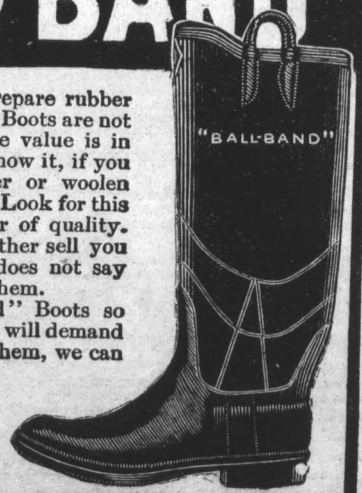
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"The House that Pays Millions for Quality"



BRAMBLE HILL

By ROBERT CARLTON BROWN.

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Sid started off at a pace quite unusual for him. Jerusha had the fine faculty of imparting the virus of action. Sid couldn't resist her enthusiasm, it was contagious, infectious. As he rushed along toward the house his mind was brisk with the thought of action. The air seemed charged with electrical energy. He was full of a species of suppressed emotion that thrilled him. He wanted to do something. He wondered what thought had occurred to Jerusha. He recalled the Old Settlers' Reunion idea. Things came to her in flashes. She had a habit of figuring out ideas and a manner of executing them that was really astounding.

Before he reached the house he sighted Jimmie strolling in the yard, smoking. He hurried up and was about to deliver the message when Jim cut him off with a smile and greeting: "Well, are you all packed up, Sid? Ready to hit the long trail to New York. Got all your sweet, sad good-byes said? We leave early in the morning, you know, and I'm going to impersonate the alarm clock and wake you up; I'm not taking any chances on leaving you behind to eat out your soul in this burg where—"

"Wait a minute!" Sid stopped him. "Jerusha's got an idea. Come along. Quick! She wants to see you."

"Wants to see me!" cried Jim, with an incredulous cock to his head.

"Yes, you. She shows poor taste, but come on! It's something important. You ought to have seen her eyes snap. She had an idea once before that was worth a hundred dollars to me."

"Wants to see me!" repeated Jim, opening his eyes wide and thrusting out his chest in an exaggerated swagger. "Well, what do you know about that! I've been walking up and down in the front yard here all afternoon just hoping she'd come along the road. I must have one more glimpse of her before we leave. She's a queen! And she's commanding me to come to her. Will I?"

"She's down watching the construction gang lay those heavy iron rails across the chest of my old friend Hope, whom I nourished until they tore him away from me. Come along."

"With the construction gang? Wait! Maybe I won't shine. I'll be right in my element."

They hurried back to where Jerusha was waiting. She had walked to the end of the farm, a quarter of a mile from the construction train loaded with ties and tools. She was standing on the bank of Turtle Creek, getting her feet quite muddy in the ooze at the water's edge as she leaned far forward to thrust a six-foot willow stick down to the bottom of the creek. She pulled out the shimmery green branch as the young fellows came up and held it out proudly, pointing to the wet length of it.

"It's four feet deep!" she cried.

"Yes," answered Sid blankly.

"And only twenty-five feet wide at this point," she continued.

"You mean the stick?" asked Sid politely.

"I mean the creek!" she cried.

"Well, may I ask what difference the dimensions of the creek make?" queried Sid in amazement. Jim stood, looking first at one and then the other, trying to appear intelligent.

Jerusha was glowing with some subtle and strange enthusiasm which greeted them glowingly from her eyes. As their gaze of bewilderment brought her back to her original idea she laughed with a glad little thrill and cried: "Oh, I'm so glad you brought Mr. Rogers, Sidney. I want him to agree with me and say the scheme is entirely practical, and that he will stay and help manage it. We need someone with experience in construction work." She flashed a look and a smile at Jimmie, who flushed and bowed consciously.

"I couldn't recommend anyone more highly than my friend Jimmie, but will you kindly enlighten us as to the duties he is expected to perform with regard to this splendid creek which is four feet deep and twenty-five feet wide?" said Sid.

"It's so simple!" Jerusha cried. "But it won't be a nice thing to do, I'm afraid. I don't see why somebody didn't think of it before."

"Oh, neither do I; I always think of those little practical things that make

thousands of dollars, I'm surprised I didn't connect with this luminous thought," answered Sid. "But may I be so bold as to interrupt your monologue and ask, WHAT IS IT?"

"Why, we'll build a dam across the creek right at this point. It's narrow and shallow here—an ideal spot. It's simply great!"

"Yes," answered Sid. Her enthusiasm was communicative, but he couldn't understand what she was getting at. "Yes, it's a great idea," he continued, "but why not let the beavers build the dam? It's more in their line. I don't see the point to such exertion on our part."

"You do, don't you?" cried Jerusha, turning to look straight into the blank eyes of Jim Rogers; as she did the glimmer of an idea flickered in them. His face began to relax from its stare. The fire in her eyes kindled a spark in his. He glanced down the slight slope to the valley where the track had already been laid. The kindled spark gleamed brighter. Suddenly his face lighted up. He glanced from the creek to the railroad track, looked at the radiant girl with understanding and admiration in his gaze, and cried: "Why, yes. It see it now! It's great. A wonderful idea! Why didn't I ever think of it? It's too good to be true!" He swung round and slapped Sid on the back. "Sideral, old dreamer, you're saved! Miss Wattle is the heroine. Thank her for having dragged your worthless body from beneath the merciless onrushing railroad engine."

"But not so fast!" cried Jerusha. "I've just cut the ropes with which the villain bound him to the track. The engine is still speeding around the curve with wide-open throttle."

"How melodramatic! I'm thrilled!" cried Sid. "But what the devil is it all about? Am I the hero that was to be run over, and am I not to know a thing about how I'm to be saved?"

"You're supposed to be lying unconscious on the track," said Jerusha. "You ought to be able to see the plan. But it may not help you a great deal, at that."

"It will serve as a pretty practical temporary barrier at least," chimed in Jim with enthusiasm.

"Yes, it will give us time," answered Jerusha, looking straight at Jim again, the gaze sending a thrill through him. "You'll stay and help manage things for Sidney, won't you?"

"I'll stay if I lose my job!" he shouted, reaching out his hand to clasp heartily the one Jerusha had extended.

Sid looked on blankly, like a little boy listening to a pair of Esquimaux conversing in their native tongue. Finally he broke out: "Now that congratulations on the completion of the Panama Canal are all over, and the straight ticket has been adopted and elected, and all that sort of thing, will you kindly inform an innocent bystander, one of the common people, which way he shall vote, in which direction the wind is blowing or, in other words, what the devil is all this high-signing and four dimension and new thought and nostalgia about? What of the dam, and why the hectic hilarity? Is it at my expense?"

"No, it's to your profit," said Jim.

"We're going to fight!" cried Jerusha, her fingers clenching and her black eyes snapping with the joy of conflict, as they had when she hurled the coins in Bango's sly, seared face and forced her way to freedom.

Chapter XIV.—Building the Dam.

It was a soft early summer night, the second after Jerusha's idea of damming the creek had served to excite Jim's further admiration. The final faint streaks of evening gray had been inked out by black night, the smaller day birds had yawned their last sleepy "cheeps!" and gone to bed. When all twilight songs and sounds had ceased, and all trees, fences and buildings had been swallowed up into silent, sinister night there slowly appeared, one by one, tiny points of light pricking their way through the Stygian blackness behind the Edgeworth mansion.

The small lights in the Edgeworth barn-yard did not carry far. As they increased in number they mingled into a dim glow, out of which a Scandinavian face would start suddenly as one of the lanterns threw its light on a man. There were those little practical things that make over twenty lanterns and a man or two

to each. Besides, a score of teams hitched to all manner of working vehicles were grouped together in the spacious yard and roadway. All kinds of carts were seen in flashes from the lanterns. There was a hush over all the men; they seemed to be awaiting a signal. The horses stamped and pawed and backed impatiently, but beyond a few Scandinavian oaths from the drivers there was silence.

Suddenly a bright light rushed down the back steps from the Edgeworth mansion and trotted with a jerky limp toward the dim halo formed by the grouped teamsters. Then the motive power of the hurrying lantern came to view. It was Brigadier General Hornbill, coming to take command. He stopped abruptly and threw his light along the line of teams.

"Everything ready?" he cried sharply. "Got all my men here, General," came a sullen voice.

"Then move on!" Brigadier General Hornbill clicked his heels together and delivered the order in true military form, standing by while the command was carried down the line from one teamster to another.

The shimmering halo resolved itself into a slow gliding glow worm and wound off up through the condemned right of way toward the point which the railroad track had reached. A few curses cut the air and several whips were swished and snapped, but the strange caravan was under strict orders to maintain silence. The horses lumbered along, stumbling on the little used road which ran to the end of the farm.

As they neared a point opposite the place where Jerusha had found the creek to be only four feet deep and twenty-five feet wide, Brigadier General gave a second order and the caravan came to a squeaking, scraping, groaning halt. Along the newly laid railroad there twinkled several red lanterns. Hornbill looked anxiously at these and then swung his lantern in a signal to Jim, Jerusha, Sid, Mother Hubbard and Watts, who had formed a scouting party and gone ahead to the spot chosen for building the dam. Receiving an answering signal that everything was all right, the General jumped down from the wagon on which he had been riding and led the way through the verdant valley to the edge of the creek, where the party from the house was gathered about a camp-fire, the glow of which was partly hidden from the watchmen stationed over the supplies down at the railroad track.

So there they were, and it was made evident that they were there with a purpose, and that purpose building a dam before breakfast. Jim took charge of the stone-boats and directed the drivers to an old quarry where there was much loose rock lying about. Hornbill took charge of the plow gang, which was already ripping up the ground to make a direction trench to lead the diverted waters into their new course; the dirt was being dumped into heaps along the bank of the creek, to be used for filling in the dam, after the stone had been put in.

Sid and Jerusha crossed to Bramble Hill with two laborers and helped load a wagon with sumach, hazel bushes and scrub oak. When they returned with their loads the dam was already well started. First had gone in load after load of the limestone rock with which the farm abounded, then when the water had risen a good deal, to ride the stones, they filled in with dirt and brush to hold it. The face of the dam was formed with alternate layers of brush and earth; being backed by the rock it formed a perfect dam which could not be undermined in any way.

When Sid and Jerusha returned the water was already pouring and roaring through the direction trench, just above the dam, which connected the creek with the condemned valley.

"Here!" cried the little Irish grade contractor. "Come here, you, sor, an' see that these square heads don't dump their wagons in the creek. I'll be goin' afther them Norsks I sent fer a load of cord wood. Watch 'em close, they're a slippery lot."

Sid jumped as he realized that the words were addressed to him. Before he could protest the contractor had snatched a lantern out of a dazed Swede's ham-like fist and darted off into the night to look up the shirkers.

So Sid was forced into the gap. Picking out what he deemed to be a strategic point he made a stance, as though playing golf, and watched the workers carefully.

Jerusha, laughing at the seriousness with which Sid undertook the work, picked up a lantern and went off to where

Mother Hubbard was working over an old kitchen stove, carted out earlier in the day so hot things could be cooked on the spot for the laborers. Sid followed her trim little figure with his eyes as she turned and waved to him as he stood in Napoleonic grandeur, his arms folded, preparing to boss the job.

The salute served to animate him and he was all action for the first time in his life. Those workmen who thought from his looks that he would be easy prey were soon assured of their mistake. Sid attended personally to each loafer. He was mentally and physically alive.

"Here! Throw that load of stone over there! No, not there!" he shouted, jumping into a pile of loose loam and directing a bungling teamster where to drive. "Get out of his way there! Jump! Now pull in there! None of that! Look sharp!"

He felt red blood rushing through his veins and he glowed warm with the realization that he could handle a gang of men and boss them; he could get as much work out of them as anybody. In the distance he heard Jimmie shouting to a couple of thick-headed Norsks; he knew Jimmie was getting work out of the men whose wagons he was loading over at the old quarry. He recognized the professional twang in Jim's voice and admired it; then he shouted an order just to make sure that his tone was as businesslike. He flushed with pride as he made sure that it was. Here he was actually doing the thing he always admired in others, and really doing it well at his first attempt. The restless spirit of Jerusha had been imparted to him.

Half an hour later as Sid leaped forward to snatch a shovel from a laborer's hands and fling several spadefuls of dirt into a gap that had sprung, he heard a laugh behind him and turned quickly to find that Jerusha had returned and surprised him at work.

"Good for you!" she cried.

Back and forth, like fire-flies, the men flitted with their lanterns. No one was idle, and yet no one worked noisily. There was a hushed air of secrecy over everything and often Sid glanced anxiously toward the lanterns outside the sheds of the railroad watchmen. The railroad men were probably asleep, at least they showed no signs of being aware of what was going on.

Everyone was as busy at the dam as a beaver and yet the rush of the water into its new course and the occasional slide of a load of stone were the chief noises. The task was not herculean, as Turtle Creek was narrow at that point, but it ran deep just above the shallow spot they had picked for the dam. The depth added to the weight of water directly above and it was a great problem to keep the loads of stone, which came in rapidly under Jim's management of that branch of work, from shifting with the current, as the volume of water piled higher and higher all the time. But Sid mastered that problem by holding four stone wagons and five loads of earth and then dumping the nine loads at once onto the dam; that served to back up the bubbling water which would have quickly seeped through the rock and dirt if it had been dumped in single loads. Though the task was not gigantic it served to keep thirty men on the jump all night.

"Lucky we got that limestone ready," cried Sid, sweating as he helped force up, with a crowbar, the end-gate of a wagon-load of stone ready to be dumped.

"It's lucky you had the stone on the farm, you mean," answered Jerusha who stood by, watching. "It would have cost no end of money to make as good a dam any other way. And here you were accusing luck with giving you the small end of it by filling this part of the farm with limestone."

"If this goes through," cried Sid breathlessly, "I'll never have another word to say against my luck, or this old farm, or a single pebble on it." He mopped his brow, loaded with heavy drops of perspiration, and threw down the crowbar.

"Well, even if the scheme doesn't work," smiled Jerusha, "you have worked. And that's something. I call it quite remarkable."

"But I worked on those Old Settlers' Reunions."

"That was only ladylike labor; you didn't have to stir the lemonade with a crowbar or handle the ice cream with a scoop shovel."

"Oh, it isn't as though I were utterly without pride in this achievement," said Sid grandly, gazing around like Chanticleer about to command the dawn to break, from the mound of dirt on which he stood. "I have but one regret," he

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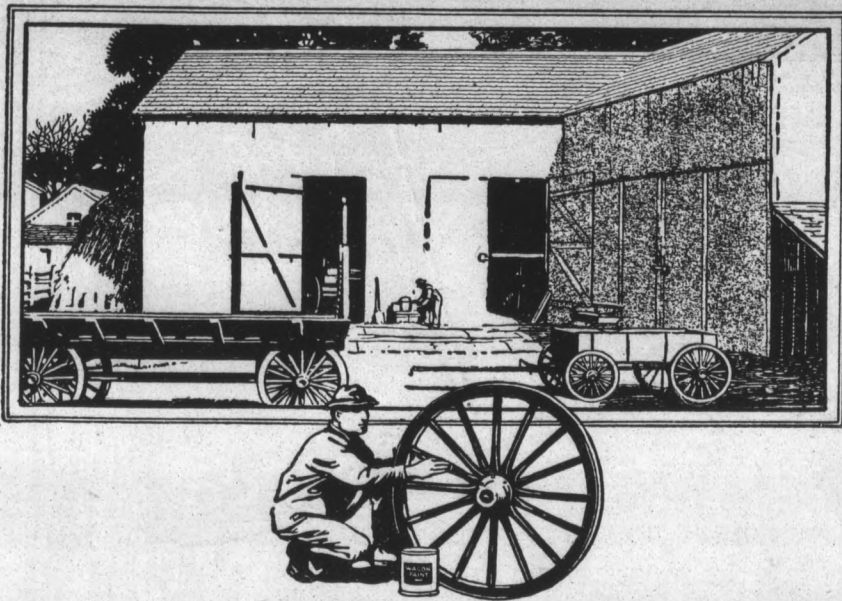
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said. "If Jim were here to watch me this one time, bossing this gang, my happiness would be complete."

The boss returned and Sid was deposed. But he worked right on, shoulder to shoulder with the laborers. He set the men an example in speed, even if he did fall somewhat short of them in dexterity. Even the Irish boss grudgingly acknowledged that ten square heads with the zeal of Sid could do twice the work of all his men put together.

Over an hour later Jerusha called Sid. He was about ready for a rest and was beginning to feel faint with hunger, so was glad that Jerusha's call had come from near the stove where Mother Hubbard was preparing the midnight meal for the men.

To his surprise he found Jerusha presiding over a little camp-fire of her own, built two hundred feet from Mother Hubbard's stove.

"I never knew how much fun it was to work," exclaimed Sid, joining her, and adding, "I never had the slightest notion either how hungry it makes a man."

"I knew you'd be hungry." She stood up from the fire and passed a hot hand over her cheeks, suffused with crimson. Her fire-flushed face, her gypsy costume, her air of mystery, taken together made her seem an elf spirit of the night, goddess of briar-bush and tanglewood.

She thrust a hot sandwich into his hand and cried: "There! I knew you'd be hungry! Eat that! It just came off the fire. There may be a bit of charcoal clinging to the bacon."

Sid took the sandwich and stood fumbling it in his hand blankly.

"Eat it!" Jerusha jolted him into full consciousness. "Call Watts and the General and Jim. There'll be more ready in a minute."

"But you must be hungry yourself. You eat this wonderful sandwich," cried Sid.

"Nonsense. Don't you know the duty of a squaw? I tend the camp-fire. I built it, too. What do you think of it? I learned that herding sheep and picking blackberries when I was little. I used to take a little lunch, build a fire and warm some coffee sometimes."

She deftly tipped the cover off a steaming pot Sid noticed for the first time, hanging in the fork of a crooked stick thrust into the ground beside the fire.

"There!" she cried, ladling out a cupful of steaming coffee. "Smell of that!"

"Oh!" cried Sid. "And you've been doing all this during the last hour I thought you were warming yourself by Mother Hubbard's fire."

"This is no time to talk," she said breezily, brushing a singled lock of hair out of her starry, happy eyes. "Put your mouth to better use calling Watts and anybody else who wants to sample my wares. After that the sandwich will suggest another task for it."

Finally the others did come and Jerusha, gypsy goddess of the camp-fire, stood looking on with a happy, infectious laugh as she finished distributing her welcome cookery among the chosen circle, her little family, she called them, their faces all aglow with gold as the bonfire burst into them.

"How is the bacon, Sid?" she asked, just as he closed his jaws over a luscious double-mouthful.

He couldn't answer, but his incoherent mumbling conveyed his appreciation sufficiently to please the cook. There is no praise a young cook (or an old one, for the matter of that) enjoys better than the proof of her pudding in busy, interested, not-to-be-interrupted jaws. Jerusha was surrounded by a circle of these. She glanced proudly from one to the other, flushed and excited.

"How's yours, Watts?" she asked quickly, glancing to the end of the circle.

No answer came. Hornbill stepped forward and gesticulated like a policeman, meanwhile endeavoring to swallow his mouthful of bacon and bread. "Watts ain't here yet. He wanted to finish helpin' load stone up on the hill there," he finally managed to reply.

Jerusha turned quickly, apprehensively, like a mother, and called, "Watts! Come to supper! Watts!"

Then she listened. Finally a slow, plaintive call came, "Yes, Jerry."

She smiled her relief and dropped to her knees beside the fire, raking out with the broken head of a hoe a score of roasted ears of early sweet corn. She passed them around as soon as they had cooled sufficiently to be handled.

Sid took his and held it up admiringly, turning it about in his fingers as though it were a plump partridge on a spit, examining it like a connoisseur. "Why, Jerry!" he cried, touching the light brown

top-tinted kernels, moist and steaming, "it's stewed in its own juices. You don't mean you cooked it in that wild, barbarous bonfire of yours?"

"Why not?" she flushed happily. "Nature meant corn to be roasted on the ground, among red-hot coals." She broke off abruptly amid the chorus of exclamations as the others sampled her wares, then called again, impatiently, "Watts, hurry! Everything is getting cold."

Without waiting for his reply she dove down again and, with the hoe head, a rare and wonderful cooking utensil, raked out (if one can rake out with a hoe) two dozen or more outwardly charred potatoes, passing them around, piping hot, on the end of a shovel.

More exclamations from the hungry mob. Jim had been standing in mute appreciation, admiring Jerusha's swift-changing expressions, her spirit—she seemed to frolic with the fire—watching her deft fingers fly and marveling at her practiced manner. But neither he nor Sid had neglected eating. They broke open a perfectly huge potato between them. The steam puffed out and the mealy contents of glistening, gleaming, snowy white crumbled apart. Jerusha handed them a knife with a pat of butter on the end. With this applied and melted, and aided and abetted by a handful of salt, each enjoyed half of the delicious tuber.

"I never had one half so good at Browne's Chop House!" exclaimed Jim.

"Nor anywhere else," added Sid.

"I've often heard of this cooking over a camp-fire," remarked Jim impressively, forming a trio with Sid and Hornbill, "but I never imagined it could be anything like this."

"Only other time I ever saw it done," said Sid, "was when some of us fellows went camping. It lasted two days. We got kerosene on the ham, burned the beans so they looked like beads on a jet necklace, and one of the fellows got bit by a snake. We thought it was a spotted alder, but it proved to be only a garter changing its skin."

"Well, I've known about the same kind of thing in camp cooking, but I've heard others laud it to the skies and I never believed a word of it before," enthused Jim. "It's wonderful! And I don't think so only because I have an appetite, either. Who would ever think of eating the skin to a baked potato at a restaurant, except some retired ranchman from Arizona? But here I'm doing it. The under skin is crisp and crackly and delicious. Why, it's a revelation! What do you think of sweet corn cooked in its own tasty, delectable, dainty, delicate, gamey, toothsome, appetizing, lickish, delicate, exquisite, rich, luscious, ambrosial juices, Mr. Hornbill?"

"What do I think of what?" gasped the Brigadier General, choking on a bit of bacon.

"I say, what do you think of it?"

"I think you're tryin' to air your learnin', young man," spluttered Hornbill, red in the face and revengeful as a result of the choking.

"No, no, I mean the sweet corn. What's your opinion of it?"

"Oh, fair to middlin', nothin' extry," allowed Hornbill with a sniff at the potato and a lingering eye toward the open stove where Mother Hubbard presided, frying fish and pork chops for the mass of laborers, Jerusha's circle being only an overflow affair. "I like it fair to middlin', nothin' extry," he repeated. "But be that as it may, a gal like Jerusha hadn't ought to cook as well as this. It oughter take more time. When she's as old as Mother Hubbard an' has spoiled as much stuff in the learnin' of her art why it seems to me it'll be a hull lot more becomin' to my mind if she does as well as she does now. But be that as it may, you can't—"

He stopped consciously in his flow of reflective philosophy as Jerusha turned her fire-kissed face up to him and queried: "Hasn't Watts come yet?"

"No. Don't know what's got into him," replied Hornbill. He gulped down guiltily the last piece of potato he had been mangling and cried, "Watts!"

No answer came. Jerusha, aroused by his absence from the circle about the fire, stood up and looked off to where Mother Hubbard was feeding her hungry laborers.

"Is Watts there?" she cried.

"No," the answer came from Oley, who was assisting Mother Hubbard, with a huge apron about his waist.

"Here, Sid!" Jerusha cried, thrusting the big coffee pot into his hands. "You pour it while I hunt up Watts, and look out for the cover. It's hot!"

(Continued next week.)

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GRANGE AIMS FOR 1913.

New officers have assumed their duties in hundreds of our Granges. Many of these are asking themselves the questions, "What is our Grange situation? What do we need most? How can it be attained? What can I do to bring this result about?"

These are just the sort of questions every officer ought to ask and, after finding a clue, seek to work out a solution of the situation.

One such inquiring officer thus states the problem of his Grange as he sees it: "Most of our members are getting old—a number of them were charter members. We need new blood and younger life or the days of our Grange activity are numbered. We have four young men; how shall we get more?"

Now here is a concrete example; there are many similar ones. To some Granges the answer may seem simple, and should be patterned after Horace Greeley's famous remark, "The way to resume is to resume;" they would say to this inquirer, "The way to get members is to get members." But this will not suffice; he desires specific suggestions. On general principles we may safely say to a lecturer seeking such aid, something like this:

Make the most of the young people you have. Quietly put responsibility upon them whenever you can. For instance, assign a debate and appoint two of them as leaders. Allow them to choose the subject and their assistants. Help them work up their points and create as much interest and good-natured rivalry among the entire membership as possible. Announce an open program hour upon the night of the debate and, if outsiders come, see that they have a hearty social time, as well as hear a program that is worth while.

Or, assign fifteen minutes or half an hour of your program in advance to the care of the young people you have. Ask them to fill it in any way they choose—with music, declamations, talks or stunts of fun—and suggest that they call upon other young people of the neighborhood. In doing this, be sure to ask "Jack" to bring "Jill." Encourage them to surprise the Grange with a real treat in the time allotted them, while you, on your part, set about planning to receive them and their friends as guests of honor for the evening.

In such ways as these you open the privileges of the Grange to the young men's associates, yet not indiscriminately. You thus put a premium upon membership and such cordial overtures will not long go unaccepted. One by one and twos and more the young people will be knocking at your doors. But you must really want them. Be sincere. Be willing to forego, if need be, some long-acquainted Grange habits when you take in a body of fresh, vigorous young people. Be glad, too, that you have done the best possible thing for your Grange.

JENNIE BUELL.

AMONG THE LIVE GRANGES.

Woman's Building at Hillsdale.—It is reported that Hillsdale Grange and the Pomona of that county are co-operating with the Women's Congress in raising \$2,800 for the erection of a woman's building on the county fair grounds. The plan is to allow the Grange to use the building for its meetings throughout the year.

Cass County Pomona met at the courthouse in Cassopolis, Jan. 30, and had an interesting program, after which officers were elected and installed for the ensuing year as follows: Master, Fred Brady; overseer, Harmon Coble; lecturer, Mrs. Geo. Tolbert; steward, Wm. Wagner; assistant steward, Leo Parker; chaplain, J. W. Springsteen; treasurer, J. S. Green; secretary, Mrs. Wm. Wagner; gate keeper, G. H. Redfield; Pomona, Mrs. Harmon Coble; Ceres, Mrs. Geo. Rickert; Flora, Mrs. Henry Rine; lady assistant steward, Elizabeth Hadden.

Pere Marquette Grange, of Mason county, had an attendance of over 100 at its installation exercises. The installing officer was C. L. Houk, who managed the meeting in a way that brought him many words of compliment.

COMING EVENTS.

Pomona Meetings.

Charlevoix Co., with Maple Grove Grange, Thursday, Feb. 20.
Ingham Co., with Cedar Grange, Saturday, Feb. 22. Patriotic program.
Genesee Co., with Flint Grange, Friday, Feb. 21.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

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Associational Sentiment:

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WHAT THE LOCAL CLUBS ARE DOING.

Columbia Club, Jackson County.—The delegate from this Club reported the special feature meetings held were an August picnic and a Thanksgiving meeting in November. The roll call is suited to the occasion and is of considerable interest at each meeting. Also an annual oyster supper is held. The Club has yearly programs, holds 12 meetings during the year and collects annual dues of 25 cents for each individual member.

Charleston Club.—This Kalamazoo county Club was organized a little more than a year ago and was reported by one of the delegates representing it at the State Association, to be in a prosperous and growing condition. It is strictly a farmers' organization and meets at the homes of the members each month. The secretary of the Club, who was also a delegate, reported that there are 40 families represented in the membership. The Club was a success from the start and helped in getting an agricultural expert for Kalamazoo county. Monthly programs are prepared and in the summer a picnic supper is served, while in the winter months dinner is served. A junior club composed of the boys and girls is an example of the special feature work of this organization. At a recent meeting the Club had the highway commissioner of the township present to advance plans for highway improvement next spring, which were discussed by the Club, this being an example of the helpful community work undertaken by this Club.

CLUB DISCUSSIONS.

Will Hold Club Institute.—The Salem Farmers' Club gathered for their January meeting at the pleasant home of the president, G. H. Thompson. A large number were in attendance. The program consisted of fine music, furnished by the Ladies' Quartette, of Lapham. Select reading by W. C. Thompson, on "Accuracy in Small Matters." A humorous recitation by Bruce Rorabacher and discussions by the Club. The subject of parcels post was first discussed, its rates, rules, etc., also its manifest advantage of express. The problem of rendering clay soil more arable and productive by the use of lime, was then discussed. A large number took part in these discussions. A vote was taken as to how many would like to have the county road system. Submitted again to the people. Vote showed members in favor of submission. Several new members were received. Club will hold an institute in February. Closed with music. H. C. Thompson.

Give Prizes for School Work.—The Farmers' Club of Texas township, Kalamazoo county, held their regular meeting at the home of Mr. and Mrs. V. D. Lacey, of that township, on Tuesday, Feb. 4. The following program was given: Meeting called to order by the president, Mrs. Henry Walker, at 10:30 a. m. The subject, "The cause of general failures in farming," was taken by Chas. Henderson, and a general discussion followed. An excellent paper, "The power of Music," by Mrs. Albert Eby, was read, after which a bountiful dinner was discussed. The afternoon session opened with instrumental music by Miss Lenore Lacey, followed by reports of committee on educational day. A prize offered for different grades of school work, one for best corn raised by boys and best jelly made by girls, and also for best embroidery work done by ladies of the Club. The subject of voting is being studied by the ladies also. The next meeting will be held at the Texas Church, on March 5, when Jason Woodman, the Kalamazoo county farm expert, will be present.—Mrs. Geo. Middleton, Cor. Sec.

A Chicken-pie Social.—The Cloverleaf Farmers' Club, of Allegan county held its regular meeting at the home of Mr. and Mrs. J. Bushree, Jan. 13. After the opening exercises it was voted to hold a chicken-pie social at the home of Mr. and Mrs. Weatherwax. After a good literary and musical program the Club, led by Bro. Canfield, discussed the question, "Would the straightening of Gun river help the township?" a question of considerable local interest. About 75 were present at the Club social held at the home of Mr. and Mrs. Weatherwax, Friday evening, Jan. 24. A bountiful supper was served, consisting of chicken-pie and other good things. After all were served we were invited into another room where games and music were enjoyed and at a late hour all returned to their homes, voting it a jolly affair.—Hattie Shafer, Cor. Sec.

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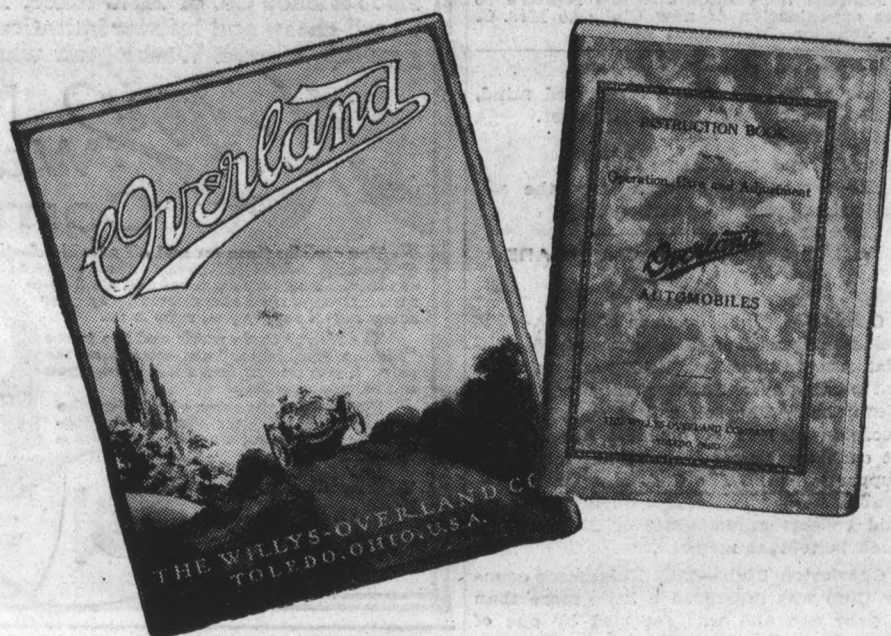
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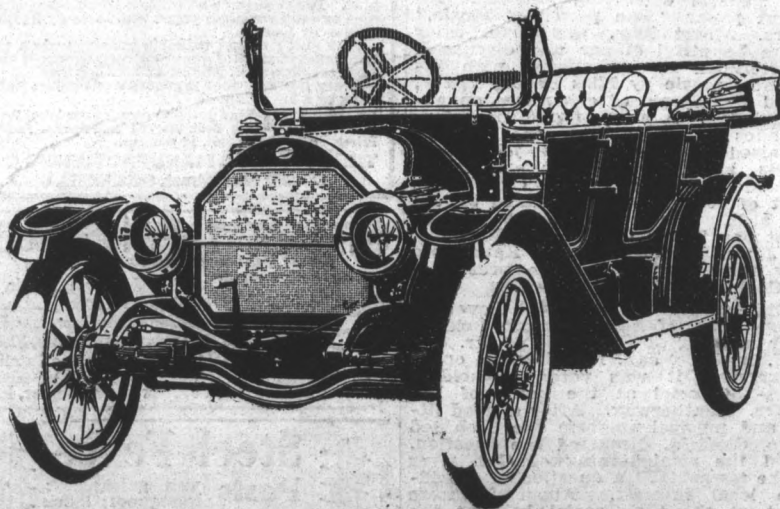
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