

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXLII, No. 5.
Whole Number 3768.

DETROIT, MICH., SATURDAY, JAN. 31, 1914.

50 CENTS A YEAR
\$2 FOR 5 YEARS.

Boys' and Girls' Agricultural Clubs in Michigan

THE boy and girl club movement, which was first fostered in the south by the U. S. Department of Agriculture, has proven such a success that the idea has been gradually developed in the northern states, including Michigan. The scattering clubs which have been developed in our own state in the past few years have been so successful and so productive of interest and benefit to their members, and the general development of this work has seemed so fraught with possibilities that a plan was developed last year by Prof. W. H. French, at the head of the Department of Agricultural Education at M. A. C. for the organization of boys' and girls' agricultural clubs throughout the state. At about the same time, or shortly thereafter, the U. S. Department of Agriculture began to extend its efforts in the same direction in those states in which Farm Management work was being undertaken in co-operation with the land grant colleges, of which Michigan was one. In our state these two forces have been co-ordinated, and a comprehensive plan for the organization of these clubs has been developed under the general direction of the Department of Agricultural Education at M. A. C., with the Department of Farm Management co-operating in the counties organized for this week.

Much general interest has been manifested in this proposition by Michigan Farmer readers and a number of inquiries have been received regarding the plan and method of organization. This information is summarized by Prof. French as follows:

The Junior Agricultural Association of Michigan for Boys and Girls.

The new movement in education toward the introduction of vocational and industrial subjects into our course of study, brings with it vast opportunities to teachers, schools, and communities. On the agricultural side there is a great opportunity in each rural district for the community to co-operate with the school in presenting agricultural training, social training, and business training. In order to facilitate this the Agricultural College and the Department of Agriculture at Washington are co-operating in the organization of Junior Agricultural Clubs, or better known as boys' and girls' clubs.

The purposes of these organizations may be stated as follows:

1. To afford opportunity for boys and girls in rural schools to apply certain agricultural theories and principles presented in the course of their education.
2. To afford an opportunity for the home and the school to unite in the development of certain agricultural and home projects.
3. To bring together in a social way the young people of the community.
4. To aid in training children in matters of organization, government and social practice.
5. To help in developing good farmers, good home makers, and good citizens.

The plan of organization is, in brief, as follows:

1. Any person between the ages of 10 and 18 years may become a member of the local club.
2. The young people of any school district, or of several districts, or of a township, may unite and organize the young people of the ages mentioned above into a local club with the usual officers.
3. The secretary of the club furnishes to the Department of Agricultural Education of the College a list of the club members and officers, and the said department gives the club a number, and these are consecutive throughout the state in the order of organization.
4. There is an enrollment fee of 25c per member. Each club forms its by-laws and determines the time and place of meeting.
5. Each member of the club is furnished with a list of desirable projects from which each selects a suitable project which is to be organized and worked out during the season. At the close of the season there should be a local exhibit of the products and each club member working out a project makes a written report to the College or to the Department of Agriculture.
6. The county commissioner of schools in each county is the supervising officer for that territory, and all local clubs should report to him, and he should advise in regard to the organization, programs, exhibits, etc.
7. In organizing the work we have two divisions: (a) Those counties in which

special county agents or farm specialists are employed, and (b) those in which no specialists are employed.

For the first division Mr. C. A. Rowland, of East Lansing, is employed to organize and supervise the boys' and girls' clubs in those counties where county specialists are employed. In all other counties Mr. E. L. Grover, of the Department of Agricultural Education of the College is the organizer and supervisor.

8. All correspondence should be addressed to the Department of Agricultural Education at East Lansing. At the close of the season Mr. Rowland and Mr. Grover will supervise the receiving of reports, will assist in organizing and judging exhibits and in awarding prizes.

9. The local community will be held responsible to defray the necessary local expenses for exhibits and prizes.

10. The projects for boys include:

- (a) Corn growing—a plot of not less than one acre.
- (b) Potato growing—a plot of not less than one-fourth acre.
- (c) Strawberries—plots from one-sixteenth to one-eighth acre.
- (d) Poultry raising.
- (e) Vegetable gardening.
- (f) Care of fruit trees.
- (g) Care of dairy cows.

11. For the girls the following projects are suggested:

- (a) Tomato growing—plot to contain one-tenth of an acre.
- (b) Canning fruit and vegetables.
- (c) Bread making.
- (d) Sewing—making of a dress or suit of underwear.
- (e) Embroidering.
- (f) Flower gardening—a bed not less than 200 square feet, and not less than six varieties.
- (g) Butter making.

All farmers' organizations are requested to assist in this matter of organizing the young people for the practical work. An Example of this Work in Michigan.

Frequent mention has been made in these columns of the boys' corn clubs which have been organized in Michigan during recent years, particularly one in Wexford county, which was among the pioneers in this movement. With regard to the work of this organization for the past year, County Commissioner of

Schools, W. H. Faunce, reports as follows:

Wexford Boys' Agricultural Club.

Wexford county boys have succeeded in organizing and maintaining the largest and most permanent juvenile corn growing club in the state. The club is known as the Wexford Boys' Agricultural Club, and it now enrolls as members 153 boys. It was organized in April, 1909, and has carried on a most successful corn show and contest every winter since that date. Aside from this the club has sent three of its members each year, and paid all their expenses, to the short course in general agriculture at the Michigan Agricultural College, and last year maintained a summer camp over on the shores of Lake Mitchell for its members. The boys themselves carry on all the work of the organization under the guidance of the county commissioner of schools, who is chairman of the executive committee.

For their annual meeting, which is held each year on the Thursday and Friday of the week before Christmas, the boys prepare an interesting two-day program which consists of lectures by farmers' institute workers sent out by the State Agricultural College, by educators, and papers and short talks by some of the boys themselves. Between lecture sessions there are games and exercises in the big gymnasium, in the swimming pool, bowling alleys and other places of recreation in Cadillac's big Y. M. C. A. building where the meetings are held each year. The annual meeting and corn show, was held this year the 18th and 19th of December. There were about a hundred boys present and 52 made creditable exhibits. The corn was of excellent quality, showing marked improvement from that exhibited in former years. It could be seen the boys had learned a few things from previous experience.

Each exhibitor is required to keep a detailed account of the expenditures upon and receipts from his acre of corn. Barnyard manure is charged at the rate of two dollars for a two-horse load, the rent of the acre at five dollars, the boy's labor at ten cents an hour, and the work of each horse at five cents an hour. These reports are signed by the contestant and witnessed by two persons not his relatives. Some good records were



Boys at the 1912 Corn Show of the Wexford Boys' Agricultural Club. This Annual Feature and the Summer Outing Bring the Boys together Twice a Year.

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made. Arthur Lindstrom, the winner of the big sweepstakes prize, raised 120 bushels of corn on his acre at a cost of 17 cents a bushel. Elmer Cedarberg raised 91.32 bushels at a cost of 25 cents a bushel. These are pretty good records considering the fact that the average yield for Michigan is about 34 bushels.

Prof. Walter H. French, of the Agricultural College, Prof. Myron A. Cobb, of the Central State Normal School, and Governor Woodbridge N. Ferris were some of the prominent speakers at the meeting. Every boy present enjoyed the Governor's rousing words of encouragement for the farmer boy and were interested in his earnest words of advice for further advancement. It was a speech long to be remembered. The boys who took part in the program were Arthur Lindstrom, Don Wright, and Sidney Belleville.

Prof. Cobb acted as judge of the corn exhibits which made a goodly sight laid out on tables in the lobby of the building. About \$210 was distributed in prizes to some 30 successful exhibitors.

This club also maintains a summer outing camp for those members who can get away for ten days' vacation during the last of July, just between haying and harvest. This camp is held at the Y. M. C. A. camp grounds over on the further shores of beautiful Lake Mitchell. It is equipped with a large comfortable bungalow and plenty of tents for sleeping purposes. A large sized man cook looks after the large sized appetites of the youngsters who generally mow away a sight of grub. Last year was the first season a camp was organized, and but few of the boys from the farm were able to get away. Most of them did not succeed in convincing "Dad" that a boy needed an opportunity to play. Next year it is hoped, more boys can be assembled for this important meeting.

"A summer camp and a summer's vacation for farm boys," some will ask in surprise. But why not? The farm boy goes to school a large share of the year and works all the year round. Why not an outing for him, too? And isn't it just the want of opportunity for him to get away and enjoy himself with his comrades and giving him no play that gives the bright boy on the farm a longing for the city?

The camp is under military discipline and is in charge of Hugh Jameson, secretary of the Y. M. C. A., and the county commissioner of schools. Mr. L. S. Westerman, physical director, has charge of the athletics, and physical exercises. Courses in Bible study, woodcraft, swimming, rowing and sailing are given.

The corn contests are held not for the purpose of increasing the yield of corn or its quality, although these ends are attained. The summer camps, and annual mid-winter meetings are not primarily to give the boys a good time, although these are worthy ends in themselves. All these activities are carried on for the purpose of making better boys and better men. It is not so important that a boy shall raise a hundred bushels of corn to his acre as it is that the acre of corn shall raise a hundred bushel boy. There is a spiritual lesson in raising a perfect ear of corn. There is a lesson in social efficiency in a game requiring united effort. Secondary aims are the ennobling of the vocation of farming, giving the boy a glimpse of the possibilities of scientific agriculture, and the attainment on the part of the boys of a certain amount of physical skill and ability to do team work. But it must not be forgotten that the big purpose in view is a matter of education.

FARM HELP.

This is getting to be quite a problem with farmers in many sections, how to hire and be able to keep suitable help. On account of this difficulty, some farmers are obliged to give up the business much sooner than they otherwise would. Even on a comparatively small farm, when a man arrives at a certain age, it is impossible for him to get along without some help at certain seasons of the year. And for this class of farmers the situation seems to be growing worse every year. There seems to be plenty of young men, but unless a farm is near some town or village where they can easily and frequently meet and mingle with other young men, it is hard to interest some young men so they will stay any length of time on the farm, even if they can make more money than in town.

While there are some farms large enough so the owner can afford to build a tenant house for a married man and keep him

profitably employed the year round, there are hundreds of others who cannot do this without getting into debt, besides running behind, because a married man must have enough more wages than the single man who lives with his employer. There has been considerable talk about importing foreigners, and some cities have bureaus that advertise to furnish farm laborers from this class. But cases where this class of help are at all satisfactory are very rare. By the aid of improved machinery, a farm can be carried on with much less help than was the case a few years ago. Inventors are constantly studying along this line how to lessen labor, and cheapen farm production so the farmer can get a little more than 35 cents as his share of the dollar.

In some progressive farm neighborhoods co-operation, or in other words, changing work, is practiced. While this works well many times, there are instances that might be mentioned, when changing work is not always satisfactory. It is the opinion of the writer that if farmers in the future expect to have less trouble in procuring help, they must put more in practice the customs of the town. That is, instead of working until six o'clock, and then expecting the hired man to work an hour or two after that time, milking cows, etc., manage the farm so as to quit work at six, or have it understood that extra pay will be given for all work performed after that time.

Ottawa Co.

JOHN JACKSON.

OUR UNDEVELOPED AGRICULTURAL RESOURCES.

In traveling over the northern half of Michigan, one is deeply impressed with the fact that as an agricultural state our resources have hardly been touched. Vast areas of timber land are being stumped, and still larger tracts remain as the lumber-jack left them. From Harrisville to Ludington, and from Saginaw to the Soo, farming is still in its infancy. True, some of our best farms and orchards are found in this territory, but they are conspicuously few in comparison to the unimproved land which extends for miles in many places. This part of the state is passing from a lumber to a farming district and still has room for thousands of young farmers.

The clearing and stumping of this land requires a great deal of hard work, but many a farmer is succeeding in doing it, and when once cleared it is a virgin soil. Michigan is in this respect one of the newest states in the Union.

With the aid of higher agricultural education at the College, elementary agriculture in many of our public schools, and 21 of our high schools, farmers' bulletins, federal and state field experts, farmers' institutes, and the agricultural press, Michigan farmers are becoming specialists and the outlook is certainly bright for the fellow who isn't afraid of work.

There are a few things, however, to be borne in mind if we, as farmers, are to succeed. Michigan has a wide range of climatic and soil conditions. Some of the fruit that grows so well on the western coast and tops the Chicago and Milwaukee markets is a failure back in the interior. Some real estate firms are clearing \$10 an acre land, planting it to fruit trees where late spring frosts are prevalent, and selling the land at \$600 an acre. All purchasers should investigate the adaptability of the land for the purpose in view.

The question of soil fertility is one of the utmost importance with most of us. My method of working it out in Oakland county is as follows: Adopt a four-year rotation beginning with red clover and allow it to remain on the same field for two years. In the fall of the second year cover it with barnyard manure. Plow under in the fall or spring and plant to corn. Just before the last cultivation of the corn sow 30 pounds of sand vetch and a peck of rye per acre. Plow this under in the spring and seed to oats with clover. Cut the oats when ripe and begin the rotation again with the clover.

Grow some alfalfa but do not include it in the rotation. It is frequently hard to get a stand of alfalfa and it may remain for several years on the same field.

I save all liquid manure from the cow stable gutter by allowing it to run into a cement basin outside the barn. This is absorbed by straw and leaves, and hauled out to the fields once a week.

This system of rotation may not apply to many other parts of the state, but each farmer must work out his own. **Oakland Co. C. W. MELICK.**

FARM NOTES.

Seeding Alfalfa After Wheat.

I have two acres in wheat which I want to sow back to alfalfa. Shall I plow or disk the ground after harvest, and would that be early enough to get good seeding? Where can I get good seed and should I inoculate? Can I obtain inoculating material from M. A. C. if needed?

Eaton Co.

W. W.

It would probably be better to plow the wheat stubble immediately after harvest and then make a firm seed bed by frequent harrowing and rolling; this plan would insure more freedom from weeds, than would be secured by disking the surface of the soil. If alfalfa is sown before August 1, or by that date, it will in a normal season get sufficient growth so there is a fair chance that it will withstand the winter. It is better to secure northern grown seed if possible, which can generally be had from advertisers of alfalfa seed in season. The pure culture for inoculating the seed can be secured from the Agricultural College, and will be helpful if you have no soil available for this purpose.

Varieties of Alfalfa.

I desire to seed some eight acres of new land to alfalfa this spring. Are there different kinds of alfalfa? If so what kind is best for this country? Does Michigan require an extra amount of vitality and are dealers required to state kind of seed in their clover? How do you test for vitality and purity?

Charlevoix Co.

D. A. R.

There are a number of varieties of alfalfa, but the common variety has given quite as good results as any except some of the hardy strains which have been developed by careful seed selection methods. It is quite important to get northern grown seed, and a germination test could easily be made to determine the vitality of the seed, although this can usually be quite well judged by its appearance, as is the case with clover. The Michigan seed law requires dealers to state the amount and kind of weed seed present above a fixed minimum by count. The purity of the seed can be determined by forwarding a sample to the Department of Botany, at the Agricultural College, East Lansing, accompanying same by a fee of 25 cents. The head of this department is charged with the inspection of seeds by the law.

Kainit for Potatoes.

How would kainit, 12 per cent actual potash, be for potatoes? I have a pasture lot of sod, am putting a coat of manure on it this winter and would like to know if kainit would help out any?

Oceana Co.

G. H. L.

Most authorities recommend sulphate or muriate of potash as a more desirable potash ingredient for fertilizing potatoes than kainit, for the reason that the latter contains a large percentage of common salt and thus attracts moisture freely, making it difficult to handle in a mixture. While it is generally conceded that fertilizers for potatoes should contain a larger amount of potash than for grain crops, yet complete fertilizers are more generally used, since practically all of our soils need phosphorus as well as potash for the production of maximum crops. Some authorities advise the use of kainit with manure, distributing it with the manure at the rate of about 50 pounds to one ton of manure. It is not, however, advisable to use it as a stable absorbent as ground rock phosphate is sometimes used, on account of its injurious effects upon the feet of the animals which may come in contact with it. Figured from the standpoint of cost, there is no particular object in using the kainit, since the potash can usually be obtained as cheaply in the form of sulphate, or at a less price in the form of muriate. However, except for the mechanical difficulty above noted, there would seem to be no reason why kainit could not be satisfactorily employed as a fertilizer for potatoes.

Soil for Inoculating Alfalfa.

I have a four-acre field I want to seed to alfalfa. I want to seed it with the oat crop I will sow. I can get dirt from a field that has been seeded to alfalfa and then plowed up. Along the edge of the alfalfa field the alfalfa still grows. Now would this dirt do to inoculate the four-acre field and how much would it take?

Allegan Co.

B. W. K.

There is probably no doubt that this soil from the field which has grown a successful crop of alfalfa would be effective in spreading the inoculation to the field which is to be sown. The bacteria peculiar to alfalfa remains in the soil once it is established there, as does that peculiar to clover, which is present in all of our soils which are in a proper physical condition to grow the clover plant successfully. The amount of soil used for inoculating purposes varies from 100 pounds to a ton or more per acre, those

using a liberal application claiming that it is profitable because thorough inoculation is more quickly secured.

Fertilizer for Beans.

What grade of fertilizer is best for beans? How should it be sown, and how much? This is for heavy clay soil in fair condition.

Huron Co.

H. H. S.

Some of the most successful bean growers in central Michigan who have a soil similar to that described, have experimented with different fertilizers, and reached the conclusion that a moderate application of a standard grain fertilizer containing a small percentage of nitrogen and potash and eight or ten per cent of phosphoric acid, using about 200 pounds per acre sown with at least three feet runs working so as to distribute the fertilizer on each side of the row and only a portion of it in the row with the bean seed, since beans are peculiarly susceptible to injury from contact with the fertilizer, especially if it contains much potash. For this reason, only light applications of fertilizer are advisable for beans, while a fertilizer containing only a relatively small percentage of potash should be used if the fertilizer is to be applied at the time of seeding, as suggested. Larger applications or larger percentages of potash might be safely used if the fertilizer is sown broadcast and mixed with the soil before planting the seed.

One Crop System vs. Rotation.

We have a six-acre plot of land composed of muck and clay loam soil. It has been planted to corn for five successive years. The last crop, 100 bu. per acre, was equally as good as the first. The land is well tilled but the soil is badly infested with weeds. We have tried sowing small portions of it to millet and oats, but the millet produced such a rank growth that it was undesirable to feed, and the oats lodged before heading out. Would it be advisable to continue planting the plot to corn as long as a good crop is produced?

Lenawee Co.

S. R. U.

While, under ordinary circumstances, the rotation of crops is much more desirable than following a one-crop system of farming, yet under special conditions such are are cited in this inquiry, this may not be the case. This land is apparently better adapted to corn than to any other crop to which it can be devoted; owing to the bounty of nature it is stored with sufficient available plant food so that maximum yields are secured year after year. Under these conditions, it would certainly appear to be more profitable to continue planting it to corn as long as these good yields are maintained, and perhaps even after a falling off in yield is noticed it would still pay to devote this land to corn by applying the mineral elements of fertility in the form of fertilizer, particularly phosphoric acid. Of course, in time the nitrogen content of this ground will become somewhat depleted, but so long as the muck is decaying a fresh supply of nitrogen will be made available each year. The best way to handle our land is in the way which will yield the greatest annual returns without such depletion of the soil as will materially reduce the yields secured. Under ordinary conditions, this can best be accomplished through the use of a crop rotation, but where this is not the case, there should be no hesitation in following a one-crop system.

What Ails the Clover?

I have a field of June clover that I cut for hay in the summer and again for seed. It was a good stand of clover but I noticed in the fall that a great deal had died. I want to pasture it this coming season; now what can I do to remedy it to make me a good pasture? The clover seems to be dead in large spots only.

Berrien Co.

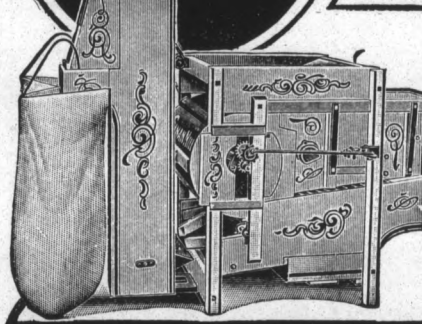
C. C. V.

It is impossible to advise with regard to this case without some intimation as to the probable cause of the clover dying on these spots. It may have been due to insect pests, such as the clover root borer. In that case it would be inadvisable to undertake to depend upon this clover for pasture this year, as the destruction of the stand would very likely be completed by these insects during the coming season. In any event, the amount of forage which will be yielded by a second year stand of clover is problematical, since many of the plants will die after they have matured seed, as is the case with this stand. While the clover plant is not strictly a biennial, it is usually so classed, and unless seeded with other grasses, a better way is to use it only one year in crop rotation. If this clover starts up well in the spring, it might pay to leave it for pasture. An examination will determine whether the trouble was due to the clover root borer or not, and in case it is found present, it would be best to plow up the field, even if it is necessary to use catch crops for pasture during the season.

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all makers of Graders and Cleaners, except me, send the same equipment, whether you live in Maine, Ohio or Oregon. They wouldn't do that, if they had my 41 years' experience.

Extra Screens Free

I use, all together, 81 Screens and Sieves. It usually requires 15 to 17 for the average farm. These I select from the 81. After 41 years in the business, I am pretty sure to pick the exact equipment needed on your farm. If I shouldn't, just drop me a line and I'll send you additional requirements. There will be no charge for this.

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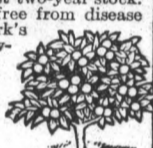
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Horticulture.

LIME-SULPHUR INJURY.

What is known as lime-sulphur injury has become quite a serious problem to the apple grower. In fact, some believe that it is almost as serious as Bordeaux injury, which was the cause of our change from Bordeaux mixture to lime-sulphur.

The Oregon Experiment Station has been carrying on an investigation on the cause and prevention of this injury, and the result of their findings showed that the injury was caused by the calcium polysulfides and occasionally by the calcium thiosulfate; the other ingredients of the mixture being harmless. It was also found that a rain immediately after the spraying decreased the liability of injury. This latter finding is somewhat in harmony with the writer's experience. He has not found that the injury was greater when atmospheric conditions were such as to favor rapid evaporation of the spray.

Too heavy or coarse sprayings were also found to make more liable the injury.

The density of the Beume test reading was found to be no indication of the power of the mixture to cause injury, as no two lots of material which tested the same contained equal amounts of soluble sulfides. It was also found that the commercial lime-sulphur was more liable to cause trouble than the home-made, and it was suggested that it was the commercial article being boiled for several hours to get it in concentrated form which put the sulfides into solution and caused the trouble. Lime-sulphur solutions boiled not more than an hour rarely did any injury.

Sun scald and other causes of injury were often mistaken for lime-sulphur injury, although sunburn was found to be worse on sprayed trees than unsprayed ones. Leaves affected with scab or other fungus were more easily injured by lime-sulphur than those not, the affected parts of the leaves often being burnt quite badly.

Preventative Measures.

For preventative measures the Oregon bulletin suggested greater dilution, the use of home-made mixtures, or the addition of something to the spray to make the sulfides insoluble. Iron sulfate, copper sulfate, zinc sulfate, sulphuric acid and carbon dioxide were used for this latter purpose. At a dilution of one to 20 for the lime-sulphur iron sulfate, copper sulfate, and carbon dioxide gave excellent results on apple, peach, pear and cherry. The copper sulfate and the iron sulfate were used at the rate of two pounds to 50 gallons of spray. There was apparently no difference in the results from either of these materials. Carbon dioxide was injected in the mixture in another case until the remaining polysulfides gave the solution a clear amber color. No measure of the gas was made but the success with this suggested that those who used a gas sprayer had means to prevent lime-sulphur injury. The other materials tested did not give as good results.

The use of either of these materials did not decrease the fungicidal value of the lime-sulphur by making the sulfides insoluble as polysulfides in solution are not necessary for fungicidal effect.

Another finding mentioned in the bulletin was that the self-boiled lime-sulphur was not as efficient a fungicide as the regular boiled material but that it was used because of its safety from burning the tender peach foliage. Should the addition of either of the above materials to the regular lime-sulphur continue to prove effective the use of self-boiled lime-sulphur will undoubtedly become a thing of the past.

TROUBLE DEPARTMENT.

Soil Treatment in a Young Orchard.

I have a five-acre Duchesse orchard which is three years old. The land is quite high and the soil gravelly loam and sand. It has been washing down quite badly on the side hill and it seems to be quite deficient in humus. We have rye in the field now and the intention was to seed it down to clover in the spring. Would it be better to plow the rye under in spring and then plant some hoed crop? I am desirous of helping the young trees and would thank you for suggestions.

St. Clair Co. J. C. D.
In orchards where the soil is deficient in humus it is not advisable to use hoed crops, as they tend to use up the humus and fertility of the soil. It would be best in your case to turn the rye under in spring before it gets too coarse, then cul-

tivate the orchard until the middle of July and sow to sandy vetch. Vetch would undoubtedly be better than clover as it makes more humus and will make a better stand on light soils. About 30 lbs. of seed to the acre is ample. This should be turned under in spring.

Red Canada Apples.

I am about to set seven acres off to apples and have been advised to set principally to Steele's Canada Red. Have since been informed that although it is a fine apple it is a shy and irregular bearer. I would appreciate, very much, information on this matter.

Newaygo Co. R. S.
The red Canada is a very good variety for the four southern tiers of counties. But north of them it is not always a success. It also does better in both quality and productiveness on the sandy loam soils than those of a clayey nature. The tree lacks hardiness and will do better if worked on some thrifter stock. It is generally an annual bearer but sometimes is quite irregular in this regard. The fruit is of very high quality but when kept after mid-winter it often loses flavor. It usually brings more than average prices on account of its quality and appearance.

As the behavior of this variety varies under different conditions one must be sure that he has conditions suitable for its best development. It is doubtful whether Newaygo county would be a good place unless, after careful investigation the grower finds that he has the favorable conditions.

ARSENICAL POISONING FROM SPRAYED APPLES.

An article in a Christiania, Norway, paper warns the public there of the possibility of arsenical poisoning from eating American sprayed apples.

A doctor, a well-known food bacteriologist of Norway after having been indisposed from eating an apple, examined a number of apples imported from America and found in the calyx end a visible layer of green powder. A microscopical examination showed that the powder contained both arsenic and copper, which were more than sufficient to cause poisoning if carelessly peeled. It was also stated that traces of arsenic were found all over the skin of the apples, and it was feared that the arsenic had penetrated into the flesh.

The above suggests that we might use a little more care in spraying our fruit during the latter sprays so as not to stain the fruit, especially if for export trade.

MIDWINTER MEETING OF MICHIGAN STATE HORTICULTURAL SOCIETY.

The midwinter meeting of the Michigan State Horticultural Society will be held in Benton Harbor, Mich., Thursday and Friday, February 5-6 in the auditorium of the First Baptist Church. The State Society will be the guests of Berrien County Horticultural Society, which numbers over 200 members.

Everyone should attend this meeting. If you wish to be an up-to-date grower, get out and find out what is doing in the world. If you gain nothing more than a new interest and enthusiasm in your work, you have been more than paid for the small expenditure of money and time. Come and bring the ladies with you.

Program.

The Sod Mulch Orchard, Ralph Ballard, Niles.
Fine Points on Growing Small Fruits, F. E. Beatty, Three Rivers.
Making Money with Melons, Harry Blandford, Farm Agent Newaygo County.
Horticultural Development in Michigan, (illustrated), Prof. H. J. Eustace, Lansing.
How Can we make Our Fruit Laws More Effective? Rep. J. J. Jakway, Benton Harbor.
Tax Reform in Michigan, Prof. David Friday, Ann Arbor.
Tomato Growing, C. W. Waid, M. A. C., Lansing.
Dr. Frank Lattin, Albion N. U., (subjects announced later).
Grapes for Profit, M. D. Burkirk, Paw Paw.
Profitable Points on Peaches, F. Barden, South Haven.
Stumbling Blocks in Co-operative Marketing, C. F. Hale, Grand Rapids.
For Better Results in Fruit Growing, Frank A. Wilken, Detroit.
Farm Management Movement, Dr. Eben Mumford, state leader for M. A. C. and U. S. Department of Agriculture.

"Eastern Shore" Trees are the Trees For Michigan.

The "Eastern Shore" of Maryland has a warm, loose, deep soil, that is particularly adapted to producing good trees. In its roots develop to an extent and fineness not known in heavy inland soils. The long, warm growing season puts into trees a vigor not found in trees of colder climates. These trees are budded from bearing orchards, and have inbred superiority in yielding fruit. They succeed splendidly in Michigan. Back of them—guaranteeing them—stands one of the largest, oldest, most skillful and efficient nursery firms in America. We sell only trees we grow.

The Harrison 1914 Catalogue

tells how we grow these trees so well. It gives planting plans and directions, and the facts about varieties of apples and peaches that should be planted now. Contains the story of how we made a hundred acre peach orchard produce fruit this year that sold for \$35,000.00.

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If you allow them to ruin your fruit trees, plants and vines, it is your own fault as they are easily killed by spraying.

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make the work easy and the results sure. Endorsed by successful growers. Shipped for 10 days trial upon receipt of \$3. Your money refunded if not O. K. Write today for particulars and literature on Orchard Enemies (mailed free). **WM. STAHL SPRAYER CO.** Box 265, Quincy, Ill.

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by saving half the solution and labor with the "Kant-Klog" Sprayer. Nine different sprays from same nozzle—sound or flat—course or fine—starts and stops instantly. For different styles. Mail postal for special offer. Agents wanted. **Rochester Spray Pump Co.** 189 Broadway, Rochester, N. Y.

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Choice Northern Grown Seed Potatoes
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Unusual Methods of Orcharding.

Thinning for regular production is given considerable importance by Mr. Case in his excellent address before the recent State Horticultural Society meeting at Traverse City.

It was mainly by thinning that he got his Baldwins to bear fair crops nearly every year. By this practice he got them to bear at the rate of two barrels per tree during the off year. In the past he tried every way to get the trees to bear regularly and then by chemical analysis he found that the apple itself was practically all water but that the seed contained in concentrated form essential plant food elements. This suggested to him that if he could grow less seed and more flesh he would relieve the trees of considerable strain and could probably make the trees bear every year. This led him to thinning, which gave the results mentioned above. Mr. Case believes that by proper feeding, care and thinning biennial bearers like the Baldwin can be brought fairly successful to annual bearing. After the June drop he has his men thin all clusters to one apple. For a second thinning, which immediately follows the first, he instructs the men to leave them no

for the total number of hours worked from grain to fruit farming. His book-keeping showed that fruit paid him so much more than grain. He knows what everything costs him and the profit each fruit has paid him. He has found that it costs him from \$1.00 to \$1.25 to produce a barrel of apples and put it on board the cars. He gave figures showing a six-year average of the yearly net returns of each fruit he grows. The results were as follows: Grapes, \$39; peaches, \$55; plums, \$74; pears, \$98; apples, \$124; cherries, \$174. He said that there were unsatisfactory conditions which brought down the returns on the peaches and he was sure that otherwise they would have shown larger figures.

Keeping Farm Accounts.

Mr. Case has a simple way of keeping his daily farm expense accounts and by it he is able to keep close tab on the accounts of his farm. The following illustration is a copy of his monthly work sheet. He has one of these for each man. These sheets are ruled off for 31 days and across the page for the various divisions of his farm work. The first column is the date column and the next

Style of Farm Account Sheet used by Mr. Case.

Date	Hours Worked	Apples	Peaches	Pears	Plums	Grapes	Raspberries	Cherries	Farm Ex.	Total for day
1	8	4	4					4		1.60
2	8	4	4					4	Mont. to Quill	1.60
3	8	4	4					4		1.60
4	8	4	4					4		1.60
5	8	4	4					4		1.60
6	8	4	4					4		1.60
7	8	4	4					4		1.60
8	8	4	4					4		1.60
9	8	4	4					4		1.60
10	8	4	4					4		1.60
11	8	4	4					4		1.60
12	8	4	4					4		1.60
13	8	4	4					4		1.60
14	8	4	4					4		1.60
15	8	4	4					4		1.60
16	8	4	4					4		1.60
17	8	4	4					4		1.60
18	8	4	4					4		1.60
19	8	4	4					4		1.60
20	8	4	4					4		1.60
21	8	4	4					4		1.60
22	8	4	4					4		1.60
23	8	4	4					4		1.60
24	8	4	4					4		1.60
25	8	4	4					4		1.60
26	8	4	4					4		1.60
27	8	4	4					4		1.60
28	8	4	4					4		1.60
29	8	4	4					4		1.60
30	8	4	4					4		1.60
31	8	4	4					4		1.60
Totals	248	124	124					124	80	80

Due *John Jones* for work Month *Dec* 1913
 Total days *20*

closer than four inches. He has had work to get his help to thin as he wants them to, and at one time his men went on a strike because they did not want to pull off so many apples; they thought that it was a shameful waste. Some varieties need thinning more than others. Wealthy is especially benefited by heavy thinning. Thinning at blossoming time he has found too expensive. The best thinning tools he has ever found are the human hands.

Experience with Aphids.

Mr. Case had the usual experience with aphids during the past few years. The rosy aphid has been especially hard for him to control. Spraying gave him poor results, and he told of one grower who sprayed nine times and still had them. He said that the parasite, the ladybug, was more easily killed than the aphid and therefore he did not hope to get much in results from them. Only one grower he knew of had success and he had his men go through the orchard in spring and cut off all limbs with the rosy aphid on them. Two men went over 14 acres in two days and quite satisfactorily controlled this insect.

Mr. Case is very exact in the keeping of his accounts and it was the fact that he kept books which made him change

each day. Following are spaces for the various fruits he grows on the farm. The total for the day is at the extreme right of the sheet and at the bottom of the sheet is space for the totals of time put in for each fruit. The lower total column running across the page and the one at the right must balance in the lower right corner. Below this form is space for the laborer's name, the month of the year and the total days worked, rate per hour, and total amount due the man. Under the heading of farm expense he puts expenses which can not be charged to any certain fruit.

We are glad to give these few suggestions regarding Mr. Case's method of fruit growing. We have called them unusual because they are uncommon. When similar systems of farming become common, farming will be on a much better basis than it is now.

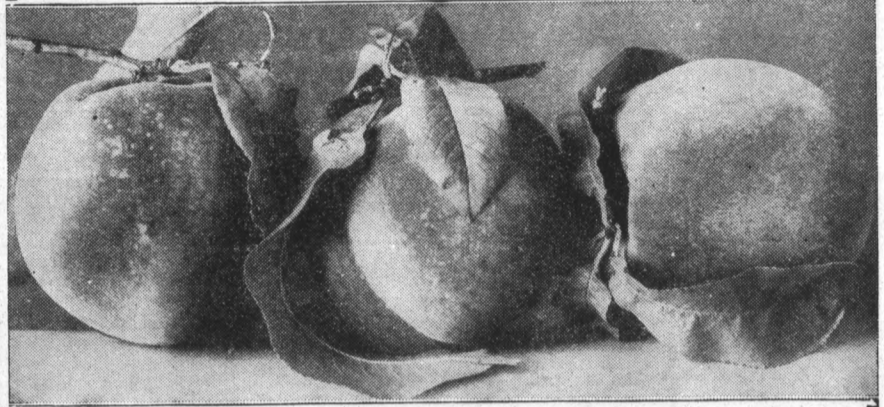
FOR NEXT WEEK.

An article giving the most simple and practical method of pruning the grape vine will appear in the horticultural columns of the next issue of the Michigan Farmer. This will be the first of a series of articles which will give detailed directions for pruning the different tree and bush fruits.

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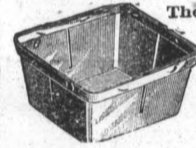
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WHEAT AND RYE FOR COWS.

I, like many others, would like your advice as to feeding my dairy cows. I have plenty of good cornstalks which I feed twice a day, and bean fodder from white beans. This bean fodder is in the best of shape. I feed this once a day. For grain I have been feeding one part ground wheat and rye and two parts bran. I am buying my grain. I would like to know what kind of grain is best to buy, so that I will have a balanced ration.

Allegan Co.

H. W. B.

If I had to buy the grain for the cows I certainly would not buy wheat or rye. Neither one is necessary for a dairy feed, especially rye. Cows don't like rye. Of course, they will eat it, and if you will mix the ground rye and ground wheat half and half with wheat bran, they ought to do very well. It makes a good ration. If you have some wheat that had been injured and had the rye on hand and it would not bring a very good market price, then there might be some excuse for feeding it. As long as you have to buy the grain I would buy neither wheat nor rye. Wheat is worth so much at the present time for human food that you can not afford to use it in feeding cows, so I would say, buy corn meal, wheat bran and oil meal, or gluten feed.

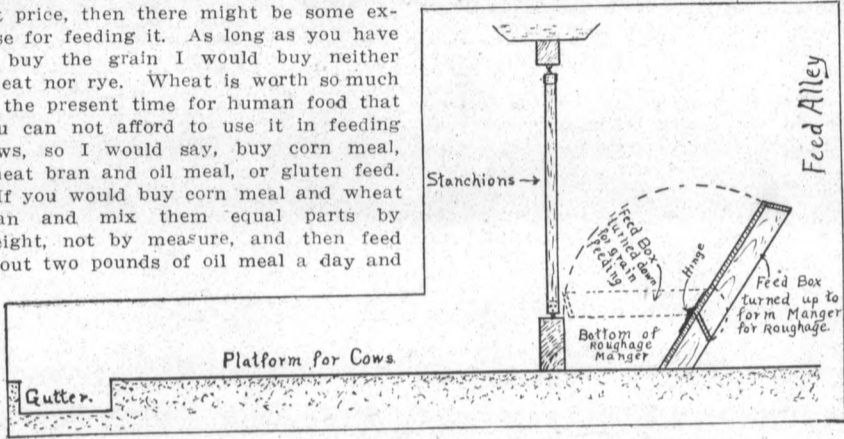
If you would buy corn meal and wheat bran and mix them equal parts by weight, not by measure, and then feed about two pounds of oil meal a day and

three or four pounds of cottonseed meal per day.

Don't feed hogs cottonseed meal. Cottonseed meal seems poisonous to hogs. It has never been satisfactorily explained why they do not do well on it. The Texas Experiment Station made quite exhaustive experiments trying to feed hogs cottonseed meal, and they made a failure of it every time. Many of the hogs died. None of them did well. Save the cottonseed meal for the steers and feed something else to the hogs.

A SATISFACTORY FEED MANGER.

The attention given to the economy of production, the saving of labor and materials and the keeping of the premises clean, has bent our interest to things that will bring one or more of these ends, so we presume the great majority of the readers of this journal will be concerned



A Style of Manger for Dairy Cattle that is Giving Satisfaction.

enough of the corn meal and wheat bran to make a pound of grain to every four pounds of milk the cows give a day, or three-fourths of a pound of grain for every pound of butter-fat they produced in a week, then you could expect to get good results.

Of course, the roughage part of the ration is nothing extra. Cornstalks are a very good feed but they are not as good as clover hay. Bean pods would do very well for a certain part of the ration. And there ought to be clover or alfalfa hay in the roughage. You ought to have corn silage. You will not get the best and most economical results without corn silage or some kind of roots, as turnips or mangel wurzels. You ought to have one succulent food in the ration. You can, of course, get along with the cornstalks and bean pods. They should be fed rather liberally. Don't expect the cows to eat every bit of them, and then feed the grain ration that I have indicated. But if you could have a feed of beets, or dried beet pulp, moistened five or six hours before you feed it, the results would be more satisfactory. Beet pulp moistened, helps in part to form a succulent food.

AM I FEEDING A BALANCED RATION?

Please advise me as to how near a balanced ration the following is: I am feeding a small bunch of steers; they are getting at present corn silage from corn that would go from 80 to 100 baskets to the acre, about 15 lbs. per head twice a day, with four quarts of cooked barley twice per day and mixed hay as roughage once a day. I just commenced feeding cottonseed meal and am feeding half a pound per day per head. Is cottonseed meal good for hogs?

Isabella Co.

G. H. P.

I would answer this question by saying, yes. Corn silage, mixed hay, barley, and cottonseed meal, fed in the right proportion would make a splendid balanced ration for growing fattening steers or for milch cows. It is not necessary to weigh the ensilage or hay fed to fattening steers or dairy cows. They are bulky foods and the cheapest that we can get, and we want the cattle to eat all they will. So that is the rule: Feed all the hay they will eat up clean without wasting. Then feed them a grain ration to balance up this roughage, making it economical so far as digestibility and assimilation is concerned, and also to make the whole ration more concentrated. I do not believe in feeding cooked barley. If it is ground into meal cattle will get all the food nutrients out of barley without its being cooked. You can certainly make it into meal cheaper than you can cook it, and you can feed with much less bother. I would gradually increase the cottonseed meal from half a pound to three-quarters of a pound, then up to one pound and finally before the steers are finished you may find it profitable to feed perhaps

in a manger for dairy cows that is giving results along all the lines mentioned.

The manger is planned to go with stanchions. The illustration gives one a general idea of the principle on which the manger works. What constitutes the side of the roughage manger towards the feed alley is fixed on hinges about a foot above the floor in such a manner as to allow the portion of the side above the hinges to turn back toward the cows until it comes into a horizontal position. Now when it is in this horizontal position the side which is up has feed boxes constructed on it by running 2x6's crosswise of the boards composing the manger box, which boards are run parallel to the feed alley. This provides feed boxes. Now to make the manger ready for feeding roughage turn the side up as shown in the illustration, and a large manger is provided for feeding ensilage, hay, fodder, etc.

It is not necessary that each cow have one of these sections to herself but usually the portion of the manger side in front of four or five cows will be made into one unit, so that the feed boxes are prepared for four or five cows by merely turning down one section of the manger.

Some advantages of the manger may be noted: It can be made very strong and is not gotten out of condition by the animals nor the feeder; it keeps the feed boxes perfectly clean and does not allow excess of concentrated grain to lay before the animals after they have gotten their fill; it is compact, occupying no more room than the ordinary manger; is easily managed and makes a liberal sized roughage manger where cows will not waste their feed.

A. H.

DOES A COW ALWAYS TEST THE SAME?

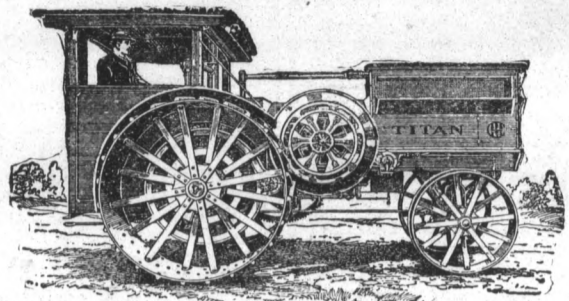
Will you please inform me whether or not the test of milk from cows ever varies? We have noted on one of our cows a variation from 5.0 to 4.0 per cent. What is the average test of Jersey?

Monroe Co.

T. B.

The milk of all cows varies in the amount of butter-fat. First it varies with the period of lactation. When a cow comes fresh and gives a full flow of milk she usually doesn't test quite so much on the average as later on in the period of lactation, and when she is nearly dry or a stripper she will test more than at any other time in the period of lactation. But besides this she is liable to vary from one milking to another. If you will get the table of tests from the experiment station of any of the great dairy contests that were held at Chicago, St. Louis or Buffalo, and look them over carefully, you will see that the same cows vary considerably from milking to milking in the per cent of butter-fat in their milk. There are instances where cows have varied two and three per cent from one milking to another. In testing the milk from our own cows we find this variation.

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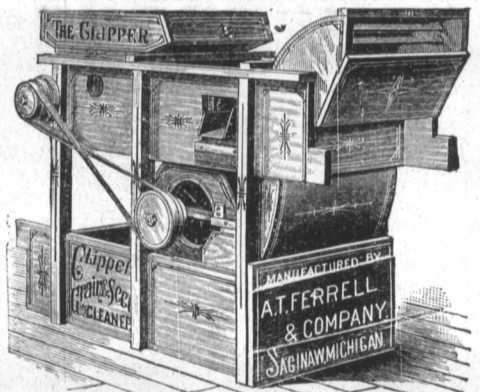
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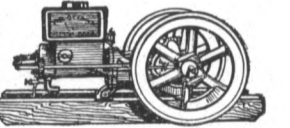
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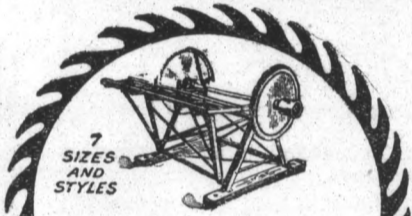
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HORSE BREEDING PROBLEMS IN MICHIGAN.

Discussions at Meeting of the Michigan Horse Breeders' Association.

At the annual meeting of the Michigan Horse Breeders' Association, held at the Agricultural College, East Lansing, Mich., on January 14, Mr. August Miller, of Clinton county, opened the program by a talk on

The Sire of Draft Horses.

Mr. Miller said in part: "By pulling together we will get the best results and the one who can pull the largest loads will get the greatest returns. So it is with the draft horses. They pull not only large loads but ideas, for the advancement of a people can be measured by the horses they keep. Further than this, the grade of horses in any given community is largely dependent upon the sires siring the colts of that particular neighborhood.

"Only the best breeding sires should be selected for mating with breeding mares and it is equally as important that the owner of two or three mares be critical of the sire he uses as it is that the larger breeder select the breeding sire with care. In order to be a critical judge of horses it is necessary for the farmer or breeder to attend fairs, shows or other places where horses are shown and note the points of excellence shown by these show animals. Books and other authorities on the subject of horse judging are at hand so there is no excuse for one not knowing the points of a good horse, and knowing this, one is able to select the right sire to mate with his mares. Of course, it also is necessary that the breeder have natural ability and knowledge of draft horses so that farther than knowing what animals to breed and how best to accomplish his ends, he will be able to feed the young stock intelligently and develop it into good draft horses."

Mr. Sprunger: "When examining draft horses, I look first for a good foot and good bone. Size is not so important as these requirements. I would rather have a smaller sire that is built right than a larger one that is not put up right. It must not be lost sight of that a draft horse must have a short back."

Care of Navels of New Born Foals.

The next number on the program was a discussion of the above topic by Dr. J. P. Hutton, who said in part: "There has been a great deal of discussion about this matter in the agricultural press and others of late years and it is a subject which is before all practical breeders. The importance of this trouble has been slightly exaggerated by some who have likened the navel of the new-born foal to that of the new-born babe but these comparisons are not accurate for there is a great difference existing between the new-born foal and the new-born child. The navel cord of the foal is very much greater relatively than that of the child.

"When the foal is born, the navel cord is severed in its frailest part and the arteries and veins are drawn up into the body. Now it is a well-known fact that the substance of the navel cord is a gelatinous substance which is known in physiology as Wharton's Jelly, and this is a very good feeding place for micro-organisms to feed and breed. Further than this, there is always some tissue which after birth ceases to have a function and becomes dead, either drying or sloughing away. We know that nearly all natural mothers of the animal kingdom lick the navel of their newly-born which serves a double purpose: First, to cleanse the navel, and secondly, to suck out all the gelatin which remains on the navel cord. Both are very important functions but the removal of the gelatinous material from the navel makes it heal more quickly and removes a media which would be a breeding place for infectious and troublesome bacteria. Perhaps one reason why foals have navel trouble more commonly than calves is because of the greater amount of licking which is done by the cow as compared to that done by the mare.

"Some have proposed to cure this navel trouble by ligation or binding of the navel but this has not been satisfactory because just as soon as the navel is bound, a great deal of Wharton's Jelly and the dead tissues are bottled in, as it were, and

they decay, causing very serious disturbances. Furthermore, the binding of the navel by any means cannot exclude injurious micro-organisms for the simple reason that the ligature will soon decay away and then the organisms enter.

"There are many theories advanced as to the probable cause for so much navel trouble and among them we have the idea that the navel furnishes a place where infectious organisms may enter and set up disturbances within the body of the foal. Along with this same theory we have the belief held by most veterinarians that this trouble may be transmitted from the mare to the foetus before birth. Others believe that navel trouble is infectious and as such, may be carried by the stallion from mare to mare.

"Of these possible theories, the first one is the one most commonly accepted; namely, that organisms enter the navel after foaling. These may come from soiled straw, dirt, or other material with which the navel may accidentally come in contact. We do know, however, that when mares have the influenza in the spring, this may be transmitted to the foetus and the foal will be likely to have navel trouble.

"If the above theory is correct, then it seems advisable to keep the stables very clean and the box stall where the mare is to foal should be kept very clean and disinfected once every two or three weeks. The straw or bedding upon which the colt is to be delivered should be disinfected thoroughly with a two per cent solution of some good disinfectant, as creolin. After the colt has been born a day or so, it would be a good plan to squeeze the jelly and dead material out of the navel with the hand, which should be thoroughly disinfected before this is done. After this, the navel should be immersed in a 1:1000 solution of corrosive sublimate by holding a small pan of the solution up to the foal's belly and allowing the navel to remain in it about 15 minutes. This will destroy all germs which might be at the point of entrance. Then paint the end of the navel with iodine or carbolic acid, being careful not to let any of the material get on the body of the foal.

Question: What is your Remedy for Leaky Navels?

Dr. Hutton: "I do not like to give any specific remedies for this at the present time for I have used nearly all of the remedies now known and I have found that all of them will fail at times and under certain conditions.

"The one which I have used most is as follows: Have enough help to lay the colt flat down without any hobbles so that he can get up quick. Now disinfect the navel. Now take a small syringe, say 3-16 of an inch nozzle, and fill it with hydrogen peroxide. This nozzle is now worked up into the tube leading to the bladder and the hydrogen peroxide is discharged. After it has boiled the tube out quite thoroughly, I take another syringe, the nozzle of which is detachable and may be filled separately, and fill the nozzle with a very small amount of turpentine. This is inserted into the tube leading to bladder as far as possible and then the pump part of the syringe is screwed on and the turpentine is discharged as the tube is being drawn out. Now the colt should be allowed to get up quickly. The value of this treatment lies in the fact that the turpentine will swell up the tube and prevent further leaking but one should be careful that this tube is not placed too near the bladder for if any turpentine should get into the bladder, it would set up a pretty violent disturbance."

Question 2: How do you Treat Navels?

"Those that bleed when colt is born and blood spurts out at each heart beat?"

Dr. Hutton: "Most breeders are usually scared at the sight of blood. However, if bleeding continues long at birth, the navel might be bound up for a short time until the bleeding has stopped and then the ligature should be removed."

FEEDERS' PROBLEMS.

Cob Meal for Cattle.

What is the value of cob meal for cattle? Montcalm Co. E. McC. Corn-and-cob meal, where the corn and cob are ground together, was found to be

of equal value pound for pound, as compared with pure corn meal in steer feeding at the experiments conducted at the Kansas station some years ago. In one trial, less corn-and-cob meal was required for a given gain, while for another trial more was required as compared with corn meal. At the Texas station a saving of three per cent was made by feeding cob and husk ground together with grain. It is generally considered that there is little, if any, food value in the corn cobs, but that the apparently beneficial results are due largely to lightening up the corn meal. When corn meal is fed in other mixtures, as with oats, this result might not be and probably is not as apparent.

Grain Ration for Horses.

I have a milk route, go four times a week and haul about two tons at a load. Have a span of five-year-old mares, weight about 1,350 lbs. Have corn and oats to feed them. It takes half a day to make the trip. How much grain should they have at a feed? Should they have more in the morning before they go on the trip than when they are idle? I would like to keep them in good flesh but I do not want to feed them enough to hurt them; they are both in foal. Clinton Co. J. H.

One-half day's work four times a week should not require a heavy grain ration to maintain a young team, in fact, this is just about the right quantity of work to keep them in good condition on a moderate ration. Where only a moderate grain ration is fed, as would be required by horses moderately worked as above described, it is not necessary to vary the feed to any extent on days when they are idle. Where a heavy grain ration is fed, however, it is quite essential to cut down the feed when the horses are not working, else serious trouble sometimes follows. If given about one-half the grain which would be required on full work, a team used as above described should be kept in good condition, and the watchful feeder will easily determine whether the supply should be increased or diminished.

LIVE STOCK NEWS.

Governor Dunne, of Illinois, has issued a proclamation quarantining that state against 19 states in the matter of tuberculous dairy cows. Under existing laws, it has been charged that Chicago was made a dumping ground for tubercular dairy cows. The proclamation applies only to tubercular dairy cows and provides that all cattle brought into Illinois from any of the quarantined states shall bear a certificate of health with respect to bovine tuberculosis. The elimination of transmission of tuberculosis through milk and the protection of cattle breeders against tubercular infection of their herds are assigned as the reasons for this action. Cows must be set aside for slaughtering for beef when brought in from quarantined states unless having certificates declaring them to be free from disease. Very little demand exists in the Chicago market for ordinary dairy cows, buyers being much more particular in insisting upon high grading than in former years, and there is never any glut of prime dairy cows.

L. A. Lennon, of Kansas City, states that on account of corn scarcity and the prevalence of cholera, Kansas will have but a meagre hog crop to ship to market. "Cholera is still raging," he says. "In a recent week we had sick hogs from all parts of Missouri and Kansas that were 500 miles apart, indicating the extent of the infected area. Omaha territory also has been ravaged, but corn is more abundant in Nebraska, and Omaha will be receiving hogs late in the winter when Kansas City will be bare. In Kansas feeders are using corn costing 70c per bushel and upward, and with that handicap to contend with, swine will be fed to only a point that will allow them to pass muster in the market. The winter supply of hogs will be light and weights deficient everywhere in Missouri River territory. Kansas will market the few cattle it is finishing early, and the beef supply from that quarter will be the shortest in many years."

The far western sheep and lamb feeding operations in the United States are estimated as about the same as last year, with Utah and Idaho coming into marked prominence as sheep and lamb feeders, while both Montana and Wyoming are also doing a great deal of lamb and sheep feeding this winter. The far western sheepmen are in the habit of finishing off their flocks in prime condition, with the feeder end especially small this season, the profits derived from fat live muttons being especially liberal. Parts of the distant west are doing less feeding than a year ago, but other sections are reporting increased feeding, so that as a whole operations are believed to be on a level with a year ago. Northern Colorado sheepmen are largely engaged in producing high-class mutton, and one wealthy firm is feeding 42,000 head in Colorado and Wyoming, including 32,000 lambs, 9,000 ewes and 1,000 wethers. The unprecedented dearth of corn is a drawback, that cereal selling in the Fort Collins district for \$1.40 per bushel, but Colorado has been favored with the best crop of alfalfa ever grown, and alfalfa hay and beet tops are being used as feed with the best results. The beet tops are fed early and grain and alfalfa hay later as finishing feeds.

I'll Put Your Stock in a Thriving Condition—

Make the Ailing Ones Healthy and Expel the Worms

GILBERT HESS,
Doctor of Veterinary Science
Doctor of Medicine



**U. S. Dispensatory
Medical Colleges
Noted Veterinarians**

All certify the ingredients of Dr. Hess Stock Tonic to do just what I claim for them.

- Nux Vomica.* Digestive and Nerve Tonic.
- Quassia.* Digestive Tonic and Worm Expeller.
- Sulphate of Iron.* Blood Builder and Worm Expeller.
- Sulphate of Soda.* Laxative and Liver Tonic.
- Common Salt.* Appetizer and Expels Worms.
- Epsom Salts.* Laxative.
- Nitrate of Potash.* Stimulates Kidneys.
- Charcoal.* Prevents Noxious Gases.
- Fenugreek.* Tonic and Aromatic.

The above is carefully compounded by Dr. Hess (M. D., D. V. S.), with just enough cereal meal to make a perfect mixture.

I URGE every farmer to see to it right now that his work horses are put in condition for the hard work of spring and summer, so that when the sun shines your horses will be rid of their old coats, full of stamina and ready for business.

And don't overlook the spring pig crop—the mortgage lifters. Start them off free from disease—free from worms.

Be sure, also, that your milk cows are thoroughly conditioned for the long, heavy milk-

ing season, and that those with calf are vigorous and fit.

Remember, your stock have been cooped up for the last few months and have been on dry feed. As corn or oats, hay and fodder do not contain the laxatives and tonics so abundantly supplied in grass, your stock are pretty apt to be out of fix. Some of your animals are liable to be constipated, rough in hair, their legs may have become stocked, or they have dropsical swellings, but the most common disease of all, especially among hogs, is worms—worms.

Dr. Hess Stock Tonic

A Splendid Conditioner—A Sure Worm Expeller

Being both a doctor of medicine and a doctor of veterinary science, I know exactly what farm stock need to get them in condition for spring.

In my left hand I hold the formula of Dr. Hess Stock Tonic—showing every ingredient, what each ingredient is for, and you will notice that the U. S. Dispensatory—one of the world's greatest authorities—certifies these ingredients to do as I claim.

Look these ingredients over—Tonics to improve the appetite—Blood Builders to enrich and tone up the blood—Laxatives to regulate the bowels and Vermifuges to expel worms. I want to emphasize one fact as forcefully as I know how: Dr. Hess Stock Tonic will not only rid your stock of worms, but will put them in a condition unfavorable to worm development.

Remember, it's the cow in the pink of condition that fills the milk pail—the horse that digests his dinner that pulls on the bit—the steer with an appetite that lays on fat, and the hog that is well and free from worms that gets to be a 200-pounder in 6 months.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel worms, that I have authorized your dealer to supply you with enough for all your stock, and if it does not do as I claim, return the empty packages and get your money back.

Now, listen, Dr. Hess Stock Tonic is never sold by peddlers, but only by reliable dealers whom you know. I save you the peddler's salary and wagon and team expenses, as these prices prove: 25-lb. pail \$1.60; 100-lb. sack \$5.00. Smaller packages as low as 50c. Except in Canada, the far West and the South.

Write for Free Stock Book—It's a Stunner

DR. HESS & CLARK, Ashland, Ohio

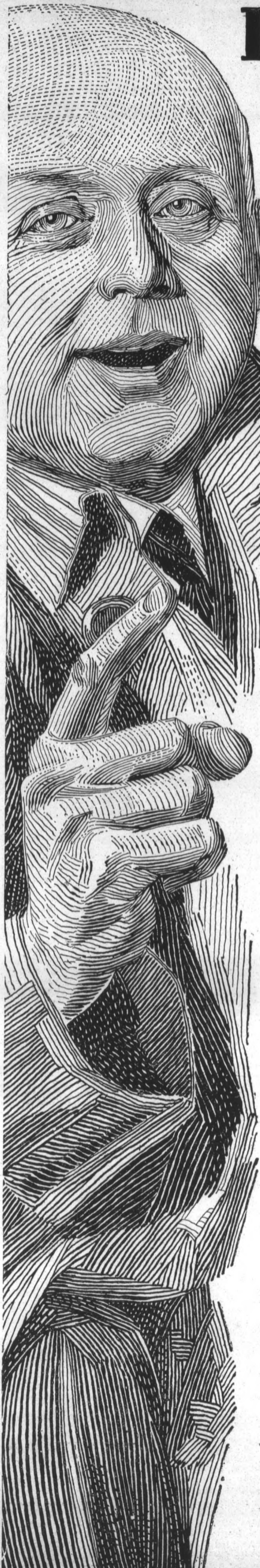
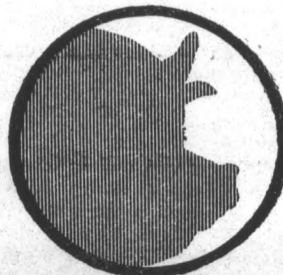
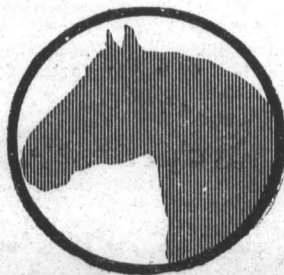
Dr. Hess Poultry Pan-a-ce-a

Makes Poultry Healthy Makes Hens Lay

This is a splendid tonic—it tones up the dormant egg organs and compels each hen to lay regularly. It also helps chicks grow and shortens the moulting period. It is a sure preventive against Roup, Gapes and Cholera. Costs but a penny a day to feed 30 fowls. Sold on my liberal Money-Back Guarantee. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks; or, if you will keep it in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top can. 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. Guaranteed.



The Michigan Farmer

Established 1843.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan.
TELEPHONE MAIN 4525.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—404 Advertising Building.
CLEVELAND OFFICE—101-105 Oregon Ave., N. E.

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TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....\$1.00
Three years, 156 issues.....1.25
Five years, 260 issues.....2.00

All sent postpaid.
Canadian subscriptions 50c a year extra for postage.
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RATES OF ADVERTISING.

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) each insertion. No ad. inserted for less than \$1.25 per insertion. No objectionable advertisements inserted at any price. Entered as second class matter at the Detroit, Michigan, postoffice. Copyright 1914.

DETROIT, JAN. 31, 1914.

CURRENT COMMENT.

Farm Ownership vs. Tenantry.

A subscriber living in Southwestern Michigan suggests that the Michigan Farmer could do its readers a valuable service by devoting more attention to the relations between landlord and tenant, giving as the reason for the suggestion that in a distance of eight and one-half miles he can count sixteen farms that are worked by tenants or the owners of which rent additional land. This statement suggests a pertinent question regarding the advantages of farm ownership or farm tenantry for the young man with limited capital who is starting into the farming business.

Of course, there can be no question but that the owning of a farm home is a desirable goal and one toward which every young man who aims to make farming his life business should work. But for the young man with limited resources it may be considered as a debatable question whether it is better to invest in land to an extent which will impair his available working capital, or rent a farm and use his limited savings as working capital in the purchase of equipment and materials with which to increase his labor income. The same question may properly be debated by the man who owns a small farm and is confronted with the alternative of buying or renting more land as a means of adding to his labor income or his profit from the business if he prefers to use that term.

In the consideration of this problem from a purely economic standpoint, the relation of working capital to the labor income or profit in the business is the factor of greatest importance. The farm surveys which have been conducted by the Bureau of Farm Management seem to indicate that there is an important relationship between these factors of success which probably accounts for the fact that in the survey referred to in a comment published in the last issue, the labor income or profit of the farm tenant averaged higher than that of his farm-owning neighbors with similar educational attainments and training. Common sense also teaches us that unless the necessary capital is available to operate the farm to best advantage the mere possession of acres does not insure either a good labor income or a substantial profit from the business of farming. When considered from this standpoint the increase in farm tenantry which is so noticeable in many sections does not necessarily point toward the decadence of our agriculture. It simply indicates that the young men who are entering the business of farming have studied the problems involved sufficiently to appreciate that they can make a larger profit on rented land, using their available capital for operating purposes, than by tying up all of their available resources in purchasing a piece of land and suffer the handicap of insufficient working capital.

So far as the relations between landlord and tenant are concerned, is it difficult to speak of them adequately in general terms. Local conditions differ so

greatly as to make each case an individual problem which can best be worked out by the landlord and tenant. There is, however, one very important thing in this connection which should never be forgotten or neglected, and that is to have a complete understanding of every detail of the agreement, which should be most complete and put in writing. This will avoid the complications and disputes which all too frequently occur between land owners and tenants, and will generally prove to be an insurance policy of satisfaction to both.

The thing to be most deplored in our system of farm tenantry is the short term for which such contracts are usually made. This is generally bad for both land owner and tenant and worse for the land. Longer leases, with adequate provision for the maintenance of soil fertility would be better for all parties concerned, and particularly for the future generations who must depend on the rented soil for a livelihood.

Rural Delivery Service.

In commenting upon the inefficiency of our rural delivery service, a Wash-tenaw county farmer writes us that since the establishment of the rural delivery he has traveled over four thousand miles for his mail. Notwithstanding the fact that he lives on a main traveled road between two substantial towns which runs directly to the county seat, he has to go a little over one-half mile to get his mail, yet there are three farm homes and two tenant houses between the roads served by the two adjacent mail routes. Naturally he does not consider this an equitable distribution of service, and there are many others similarly situated throughout the country. This man—and no doubt many others who are so situated—feels that there was greater need for the perfection of the rural delivery service than of the establishment of new features in the postal service, such as the parcel post.

There is no doubt legitimate cause for complaint by many farmers with regard to the nature of the rural delivery service which they are getting under existing conditions. It should be remembered, however, that the development of the rural delivery service has been very rapid and fairly complete, considering the size of the problem involved. Few of the most visionary of the advocates of rural free delivery foresaw even as complete a development as has occurred in so short a time. Unavoidably there have been mistakes in the laying out of routes, and undoubtedly the service might be improved in many places by their alteration, and the very best way to secure such improvement in the service is by agitating the problem as this reader suggests the Michigan Farmer should do in behalf of its many subscribers who are similarly situated. The problem, however, must be considered as a local one in each instance until sufficient sentiment has developed to secure general and comprehensive action, either by the department or through the intervention of Congress. But we believe that such general action will be hastened by the adoption of the parcel post rather than delayed, since the very character of this service is such as to make it almost imperative that the rural carrier come in touch with the farm home, which is the originating point or final destination of the matter carried.

But there are difficulties in the way of needed changes in rural delivery service which ought not to exist. A case or two in point will serve to illustrate. We know of one farmer living on a rural delivery route who refuses to use the service because the carrier does not get to his place until afternoon, preferring to go a mile for his mail rather than wait until afternoon to get his morning paper. Another farmer living in the same neighborhood refuses to patronize the rural route which passes his door, because the carrier starts from another post office than the one at which he has been accustomed to get his mail for many years, preferring to go one and a half miles for his mail rather than change his post office address. Prejudices of this kind make readjustment of routes difficult where the quality of the service as a whole might be improved to the advantage of the community at large. There can be no question but that even the present development of rural delivery serves as a great boon to the farmers of Michigan and of the country, and we trust and believe that the time is not far distant when each and every one of them will have his mail delivered at his door, but until this general result can be secured, many of the local inadequacies of

the service could doubtless be eliminated by the tactful co-operation of interested farmers who are not receiving adequate service under present conditions.

The Government and Big Business.

The government has been applying the Sherman law the regulation of the purpose of maintaining competition in trade for a sufficient length of time and with sufficient vigor to convince our "Captains of Industry" that all their cases will be given attention as soon as they can be reached. As a natural result there is a very notable tendency on the part of the interests concerned to learn the application of the law to their business and comply with its spirit as well as its letter. The assurance given by President Wilson in his recent message to Congress that the government would gladly render all the aid in its power to applicants who desire to reorganize their business so as to comply with the requirements of the Sherman law will doubtless stimulate still more general action along the same line, and tend to promote a revival of business activity throughout the country.

While this present tendency augurs well for the business prosperity of the immediate future, what the ultimate result of the present efforts toward the regulation of big business may be is difficult to foretell. In this connection the proposition at present under consideration for the construction and operation of a railroad in Alaska by the federal government is of interest. An experiment of this kind, if tried, may either be the beginning of the establishment of a new governmental policy or the end of an agitation for the government ownership of public utilities. At any rate we are apparently approaching a better understanding if not the solution of the problem of government regulation of big business.

Boys' and Girls' Clubs.

On the first page of this issue will be found information regarding the plan which has been adopted for the organization of boys' and girls' clubs in every rural community in the state where there is sufficient local interest in the possibilities of the work to insure its financial support. This plan is followed by a description of the work done by one of the independent clubs of this kind which has been in existence for several years.

From the success which has attended the prosecution of similar work in the south, it is apparent that these clubs are considered of sufficient benefit to make their local support profitable for the community. In fact the boys of some of these clubs have opened the eyes of the country with the results which they have attained in the growing of an acre of corn, while the girls have made just as enviable records in the growing of tomatoes or the other activities in which their organizations have been engaged. From the results which have already been attained by members of the few clubs of this kind which have been organized in Michigan it appears that similar results will be secured in our own state, and that the object lessons afforded by the boys will prove a benefit to the agriculture of the communities in which these junior agricultural associations are formed which will far exceed the small cost of their local support.

We bespeak for this movement the hearty support of the progressive farm communities of the state, to the end that their brightest and best boys and girls may thus have their attention directed to the possibilities of the farm before they have settled their minds on some other career.

WHEN THE SNOW FLIES.

Now is the time for investigation regarding spring purchases. Will it be implements, seed, incubators, a silo, drain tile, or an engine? Get the catalog now, and when the snow blows sit down and digest it. You will then be able to choose, when the time comes, with a better assurance of satisfaction.

Most all of the better manufacturers advertise in the Michigan Farmer. When you write them, be sure to use the correct address.

ANNOUNCEMENTS.

The National Corn Exposition takes place at the Fair Grounds, Dallas, Texas, February 10-24.

Michigan Round-up Institute, or "Farmers' Week," occurs at the Michigan Agricultural College, East Lansing, Mich., March 2-7.

HAPPENINGS OF THE WEEK.

National.

About ten o'clock Sunday night a collision occurred on the Michigan Central Railroad northwest of Jackson, between a passenger train and a freight train, and four persons are known to have been killed while 11 others were more or less seriously injured. No official statement has been made as to the cause of the wreck. Both trains were making fast time; the passenger train was running at about 45 miles an hour while the freight train was probably going at 30 miles an hour.

Two children at an orphan asylum at Utica, N. Y., and four others are in a critical condition as a result of a mistake made by a nurse who administered poison instead of medicine.

The interest in the graft probe of New York state is nation-wide. It is expected that United State Senator O'Gorman will confirm the sworn testimony of former Governor Sulzer with respect to the attempt to extort \$150,000 from a contractor, and it is generally believed that the revelations already made are but the beginnings of the discovery of extensive grafting with funds appropriated for highways, the great barge canal and aqueduct contracts.

The United States Department of Justice is now busy with plans to prosecute a ring of conspirators who, through bankruptcy proceedings have defrauded creditors consisting of banks and mercantile firms and other concerns out of more than a million dollars during the past year. The head of the ring is located in New York City.

Six boats are in various processes of construction at the shipyards on the Detroit river. These boats will go into the water in a few months, and the activity indicates a healthy outlook for commerce on the Great Lakes.

The Department of the Interior and Secretary of the Navy are making preliminary surveys of oil fields in the central west for the purpose of determining the feasibility of the United States government purchasing oil lands, controlling same and constructing pipe lines to carry the product to the coast.

Street railway companies are much agitated over the steel-car bill now before Congress. The bill requires all transportation lines, both steam and electric, engaged in interstate business to substitute steel cars for present wooden cars. Representatives of the different concerns were in Washington last week protesting against the enactment of the bill into law.

Last week the Michigan Supreme Court upheld the validity of the Verdier Act which was appealed from the Wayne circuit court. This decision enables cities to amend their charters piecemeal.

The Illinois legislature has about stopped the practice of disposing of cows to dairy interests that have been thrown out of Wisconsin herds owing to the failure to take the tuberculin test and sold at enormous profits. Buying such cows in Wisconsin at \$20 and selling them to Illinois dairymen for \$75 is no longer possible, for the new state veterinarian, Dr. O. E. Dyson, is enforcing the new law most energetically.

In anticipation of a strike of 1,100 telegraphers, the St. Louis & San Francisco Railway has begun to change its telegraph lines into a telephone system for railroad communication.

Foreign.

News comes of the failure of Great Britain to gain control of oil fields in South America, and as a result of this refusal of concessions by Colombia and four other Latin-American countries, England has been compelled to change her naval program, being unable to secure oil for fuel as she had planned. It is announced, therefore, that the additions to her navy will be 25,000 ton ships instead of 30,000 tons and the size of the guns will be 12½-inch instead of 15-inch. Coal will be used as a fuel instead of oil.

It is reported that the United States is to intervene in Mexican affairs for the purpose of giving the people of that country an opportunity to hold a free election. Rear Admiral Fletcher, it is stated, is under orders to send a force of 3,000 marines to Mexico as soon as President Huerta resigns or is forced by the rebels to leave the capital. The United States will also be on hand to protect Americans and other foreigners who are living at the Mexican capital.

The revolutionary movement in Haiti appears to be daily getting stronger. All the towns in the north are in arms against the government, and several points have been captured by the rebels. It is feared that the success of the rebels will put this country in an embarrassing position and because of this it is feared that military action may be necessary on the part of the government at Washington.

The Panama canal is practically completed. In a short time it will be possible for large boats to pass through the structure from the Atlantic to the Pacific oceans. Colonel Goethels, who has had charge of the construction of the canal, and who has been spoken of as Commissioner of Police of New York City, will probably be unable to become an official of the metropolis, since he feels it his duty to remain at Panama until the canal has been completed in every regard, and put into successful operation, which will probably require him to be there fully 18 months longer.

An explosion in a fireworks factory at Terre Annunziata, Italy, resulted in 19 persons being killed and 18 seriously injured. The victims were caught beneath the falling walls of the building which collapsed after the explosion.

Reports indicate that the railway strike in South Africa is near an end, as is also the case with the striking miners. The soldiers called out at Pretoria to protect life and property have been retired, with the exception of regiments located at three stations.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

How the Boys Killed a Bear BY FRANK H. SWEET.

THE autumn of 1871 was an eventful one throughout the Northwest. The unprecedented drouth, to which was due in part the terrible fire that devastated the city of Chicago in October of that year, also gave rise to fires that swept through the timbered regions of Minnesota, Wisconsin and Michigan with a fierceness and fatality never known before or since. Whole counties were swept from end to end by furnace-like blasts that spared neither vegetable, animal, nor human life. Small settlements were reduced to ashes and their inhabitants cremated in a single night. People living along the logging rivers of the west, far south of the timber belts, felt the effect of the conflagration in the pine lands fifty miles or more to the north. Smoke so filled the air for weeks that it dimmed the sun and parched the throat, and wild animals were driven from their usual haunts, so that deer and bear were plentiful where such animals had not been seen for years.

This was particularly true of the "bottoms" of the Black River, near the junction of that stream with the Mississippi, in western Wisconsin. This swampy bottom land, covered for the most part with timber, was the common fall pasture for all the stock of the neighborhood.

There was consequently great excitement, especially among the boys who had to bring home the cows at night, when they discovered in a muddy cow path curious tracks as long and wide as a man's hand. Ted and George Watson, and Amos Reynolds, were three mischievous youngsters, so "Uncle Dan" was skeptical when they told him of the tracks.

"Why, you young scamps," he said, with a broad grin, "that's a bear's track, and there hasn't been a bear in these bottoms since you were born. You rascals want to carry guns when you go after the cows, and think a bear yarn would be excuse enough for a chance to shoot your own legs off; now, don't you?"

The boys' faces betrayed too plainly that the tracks had inspired them with that very hope.

"Well, there's a bear now," said Ted stoutly, "and when we come home all chewed up some night you'll wish you'd let us have guns."

"Ask Sammy Dixon if we didn't see tracks," spoke up Amos, somewhat hotly.

"Yes, we did," declared Sammy; "saw 'em plain as day and big as our hand."

"Was there any heel to the tracks, Sammy?" asked Uncle Dan, more soberly.

"Yes," excitedly; "kind of round, square ones."

"Kind of wide and narrow ones, too, weren't they, Sammy?"

"Yes, sir," quickly assented Sammy, encouraged by the serious manner of the questioner, "and they were so long," measuring with his hands, "and as wide as—ouch! Quit your pinching me, Ted Watson!"

Uncle Dan broke into a roar and went off to work.

"You made a pretty mess of it with your baby talk, didn't you?" said Ted, with a contempt that withered Sammy. "Better go home and have your mother put short dresses on you again. You ain't got sense to wear pants, nohow."

But Sammy had his revenge when he appeared the following afternoon with a gun nearly twice as long as himself—an old army musket with a bore big enough to take in a man's thumb, and noted for the execution it could do among a flock of ducks at short range. The stock ran the whole length of the long barrel and was so straight at the breech that for once Sammy's short neck was a decided advantage, making it easy for him to get his eye down in line with the sights. The lock was so stiff that Sammy could not raise the clumsy hammer with his thumb in the ordinary way, but had to plant the

butt on the ground and press the hammer back with both hands when he cocked it. Uncle Dan nearly had another fit of laughter when Sammy came up the path with the gun over his shoulder, the weight of the long barrel tilting it down and making it hard for Sammy, with his short stature, to keep the muzzle off the ground.

"Is she loaded, Sammy?" Uncle Dan asked.

"Yes, siree!" replied Sammy proudly; "loaded for bear. Six buckshot and a marble."

Uncle Dan now let out the repressed roar.

"You're safe enough with that gun, Sammy," he grinned. "It's so much longer than you that you can't shoot it and get in front of it at the same time, even if you try."

"Yes, sir," agreed Sammy, not quite catching the point of the joke. "That's

would not trust the boys to load the guns, and gave them no extra ammunition, and he charged them strictly not to point the guns at one another, and to shoot nothing but bears."

With fast-beating hearts the boys scoured every thicket on their way, but came home at night without having seen so much as a fresh bear track. Even the old tracks had been obliterated by the cattle. But, although they had to endure no end of chaffing from Uncle Dan and the older boys, they started out day after day with hopes as eager as ever.

"He's there and we'll have him yet," declared Ted, and when one night some heavy animal sprang out of a thicket and went crashing through the brush as they were on the way home just after dusk, he charged them to say nothing about it at home.

"They'll only laugh at us," he said; "and even if they should happen to be-

the horsepower, gave chase to the bear. Several horsemen overtook and surrounded Bruin before he reached the timber, but the horses were so shy of the brute that their riders could not get near enough to render their pitchforks effective, although the bear received enough sharp prods to make him desperate with rage. He could wheel and dodge, too, so much quicker than his assailants that he was fast gaining ground and nearing the woods.

Just then Bijé Loney, a six-foot young backwoodsman, the champion runner, jumper and boxer for miles around, and the only man with speed and courage enough to reach the combat on foot, came panting up with a three-tined fork. Bijé saw that the bear was about to get away from the horsemen and, recognizing an opportunity to add fresh laurels to his brow, with a wild whoop and his pitchfork at "charge bayonets," he dashed boldly at the bear. Startled by Bijé's whoop Bruin wheeled and, rearing on his hind feet to receive the charge, by a couple of furious swipes of his prodigious paws right and left he sent the fork spinning in one direction and the valiant Bijé sprawling in another. Then bolting between the legs of a horse he upset both steed and rider, bounded over the ridge and disappeared in the timber.

The boys were driving the cows home from a distance of several miles back in the bottoms when this happened and, as usual, struck off to one side of the trail for a hunt on the way home; for the cows, once started in that direction, could be trusted not to stop until they reached their respective barnyards.

This evening the boys had planned to visit the "plum patch," a spot of sandy ground some feet higher than the surrounding marshes, and overgrown with wild plum trees and grape vines. This plum grove was in the edge of the bottoms, and the sun was just setting as they reached it.

The stock had beaten paths all through the thicket, and they marched around and through it with their plans all laid as to just what they should do in case they "jumped" a bear. Ted and Amos were to do the execution with their rifles, and should they fail to kill at the first fire and the bear take after them, George was to blind him with the two charges of buckshot in his shotgun so that Sammy might finish him at short range with his old musket.

The boys were pretty nervous when they first approached the thicket, for the rank growth of plum trees, overgrown and matted with grape vines, afforded ideal hiding places for bears, aside from the attraction they knew the fruit would have for the animals. The boys grew bolder, however, when they had traversed the patch quite thoroughly, examining the paths for tracks and peering cautiously into every dark covert. When they had made pretty sure there was no bear in the vicinity, they stopped at the edge of a thicket where a grape vine had grown a thick canopy over a huge, fallen tree-top and, with the guns on their shoulders, began eating their fill of the frost-ripened grapes.

Munching the purple, luscious clusters the boys forgot for the time being all about bears, when suddenly and without the least warning there came a fearful sound, like the mingling of a grunt and a roar and the crashing of brush from the old tree-top.

"The bear! The bear! Run!" shouted Ted, the captain. Forgetful of their well-laid plan of battle, of everything but that they had legs to run with, they were only too ready to obey.

"Run!" screamed Ted again! "he's after us!" And didn't they run! They couldn't run fast enough. The ground seemed to cling to their feet and, without

Hunting The Poles.

By ALICE ANNETTE LARKIN.



I think I'll go and hunt the Pole;
I hardly know which one;
It seems to me that both of them
Would be a lot of fun.
If I should find the North Pole first,
I'd give it to Aunt Mae;
She needs a clothes-pole pretty bad,
That's what I heard her say.

And if I find the South Pole first,
I'll use it for our flag,
For Billy Brown broke ours all down
When he was playing tag.
Or else, if it was very small,
I'd tie it to some string
And go a-fishing with the boys,
Right down at Willow Spring.

I couldn't take as many things
As Mr. Peary did;
My sled is broken, so's my horse,
The dog has gone and hid.
I'd like to have some men and boys
To go along with me,
But all of them are busy now;
It's feeding time, you see.

I guess if I should start at once,
And hurry very fast,
I'd manage somehow to be back
Before the spring is past.
There's work enough for me to do,
I'm busy every day;
But folks that run a farm, of course,
Must have some time for play.

what father said, and that the other boys must look out for themselves."

Still laughing, as much at the long faces of the other boys as at Sammy's exuberant confidence, Uncle Dan called the boys into the house and, in spite of his wife's protest, sent them after the cows, each with a gun over his shoulder.

A more valiant band—in their estimation—never went to the wars than the four youngsters as they filed down the road with guns at "shoulder arms." Amos had Uncle Dan's rifle, while Ted and George carried, one a rifle, the other a shotgun, belonging to the older boys. Sammy was no longer in disgrace; in fact, he had bounded suddenly into such popularity that the others dropped their customary snubbing manner and made a hero of him on the spot. Uncle Dan

lieve it, the men folks would start on a hunt and get him themselves."

One day, however, after the boys had been carrying the guns about a week, something happened. Uncle Dan's threshing machine was at work in the field of a neighbor at some distance from home. Just before sundown one of the crew saw a large black animal making its way from a cornfield across a strip of prairie toward the bottom.

"A bear! a bear," he yelled, and the feeder chucked the butt of the bundle into the cylinder so suddenly that the hum of the machine quickly stopped with a throbbing rumble like a huge bee caught under a boy's cap. Some of the men ran after guns, while others caught up pitchforks and, on foot or mounted on the bare backs of horses, swiftly unhitched from

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thinking of their guns except as so much weight that impeded their flight, they threw them aside and crashed through the brush, crashing through puddles, leaping, stumbling over logs and hummocks; they ran as none of them had ever run before—all but Sammy. He, poor chap, too witless with fright to realize that his gun might be used as a weapon of defense, or that he could run faster unincumbered by its weight, brought up the rear with all the speed his short legs were capable of, the clumsy musket still trailing over his shoulder.

"Oh, fellows!" he screamed, "don't run so fast! I can't keep up, boys! Ted! George! Amos! hold on!" Then as he glanced back and saw the bear with open mouth close at his heels, "Boys, he's coming! Help! Murder! Oh, he's got me. I'm a dead man!"—Bang!

The others heard no more, and Sammy knew no more, for just as the bear made a vicious grab with his wide paws for the trailing musket, thinking, no doubt, that it was a part of Sammy's anatomy, that doughty hunter tripped over a log and fell in a faint from sheer fright. On the others flew, hearing Sammy's frightened cries and the report of his gun but not daring to stop until they reached a wide opening and the silence behind told them they were no longer pursued.

"Where's Sammy?"
 "Sammy's gone."
 "The bear's got him!" came from the three in almost a chorus as they huddled together in the dusk, trembling and weak with terror.

"We're a pack of sneaking cowards to leave him like that," burst out Ted, now that his first sickening fear had passed. "If I had my gun I'd go back and—"

"But I heard him shoot," Amos put in. "Maybe he's killed the bear."
 "Killed nothing," sniffed Ted. "More likely the bear's eating him at this minute. Come on fellows," desperately. "I'm going—"

"Hark!" Amos shouted, clutching his arm. "I hear him calling now."
 "S-a-y, fellows!" It was Sammy's voice, without mistake, sounding far back in the darkness, faintly at first, then louder. "Hold on there, you pesky cowards! I've got him! I've got the b-e-a-r! Come on back and help skin him!" And then with wondering shouts the other boys sprang to meet Sammy just as he broke into the opening with the old gun still trailing behind him.

"Did you kill him?" they gasped.
 "'Course I did," answered Sammy; "just poked the gun in his face and blowed his head off." And with bold strides he led the way back to where the bear lay, sure enough, with the top of his head nearly shot away.

"He's my bear. The six buckshot and the marble fixed him!" crowed Sammy, dancing wildly about the big black beast that had so nearly made a supper of him. "Where's your guns?" he suddenly asked, noticing for the first time that the other boys were weaponless. They hurried back and had no more than gained possession of their weapons than they heard shouts and the galloping of horses. Guided by their calls, two of the older cousins soon rode up to them. The cows, coming home without the boys, after the pitchfork battle of the afternoon, had alarmed Uncle Dan and caused him to send the older boys to look the youngsters up. The bear weighed over five hundred pounds, and they had to go home and return later with lanterns and haul him home with a team and sled. Bije Loney recognized him as the same one that had vanquished him, and the marks of fork tines on his body not only corroborated Bije, but accounted for the animal's savage humor when the boys encountered him.

Uncle Dan made Sammy tell the story to the crowd that gathered when they brought the bear home, patting the boy on the back and laughing uproariously. "But how did it happen, Sammy, that you killed him and the other boys never fired a shot?" he asked, with a quizzing look at the others.

Sammy was too much of a boy not to take all the honors that came his way, yet too much of a man to disclose the ignoble part his friends had taken in the affair. "Why, you see," he said, in words that were true enough, though they conveyed a false impression, "he took after me so fast the other fellows were afraid to shoot, and I got the first shot, and, of course, there wasn't any use of shooting again after them six buckshot and the marble hit him," a conclusion that was amply verified by the appearance of the bear.

Several bears were killed in the same locality later that fall, but the boys did not kill them. Although they carried their guns every night they kept pretty close to the trail and the cows, and gave plum thickets a wide berth. Sammy, of course, became a great hero among the boys of the neighborhood, magnanimously allowing his three companions to share the honors with him, though in a lesser degree. It was not until years after that Ted and George and Amos gained the moral courage to tell how cowardly they ran, and Sammy to acknowledge his fainting, and that the shot which killed the bear was an accidental one, fired by the old musket striking its hammer against a tree when Sammy fell.

OUR RUSSIAN PEASANTS.

BY ISAAC MOTES.

Anyone interested in studying the life of the Russian peasants need not go to Russia in order to do so. Take a trip to McPherson county, South Dakota, and you'll see Russian farmers living just as they do in the homeland. They represent, perhaps, the lowest class of people from the Czar's dominion, therefore they are typical of life in that country, for ignorant peoples change their manners only by slow degrees.

A few years ago I taught school among the Russian settlements in that county, lived in the homes of the Russian farmers, learned their language to some extent and got much insight into their home and social life.

The county at that time had between six and seven thousand inhabitants, at least nine-tenths of whom were Russians. There is a family living on almost every quarter section fit for farming, and they build their sod houses on the corners adjoining each other, thus reproducing the peasant village settlements of the old country. Sometimes the barns and dwelling houses are built under the same roof, so as to have a short haul for their fuel, for they burn the refuse thrown out of the cow stable and dried in the sun, thus reducing the coal bill to a minimum.

You will find few houses with floors or ceiling, and seldom more than one or two windows, with no ventilation. You will find no reading matter in the home except perhaps a German paper and an old-fashioned hymn and prayer book in the same language—Low Dutch, or incomplete German.

They all have large families, but the parents care little for the education of their children, sending them to school only the limited time required by law. If teachers allowed it, the children would be started to school at the age of four or earlier, to get them out of the way at home, and would be taken out of school when big enough to be useful around the barn and in the fields. They think the public school system is a burden imposed on them by the government, and compare it to the military system in Russia. Everything expended for school purposes they consider lost.

I once called the attention of a Russian school director to the condition of the blackboard. It was made of pine boards, painted and polished until smooth as glass, and the chalk absolutely refused to stick. He said it was made that way to save chalk. When I afterwards asked him for a box of chalk he answered that when they paid a salary of twenty-five dollars a month the teacher was expected to furnish the chalk. Another farmer complained to me that in Russia they made his children go to school to learn Russian, and here they make them learn English, while he and his wife understood neither.

These Russian farmers are a very ignorant class, superstitious, raw in manners, quick-tempered, deceitful and degraded, but very cunning in trade and in beating down the price of merchandise in stores. I once saw an old fellow spend fifteen minutes in the busy harvest season trying to get a can of tomatoes for eight cents that was marked ten. Failing to do so he went out angry, sending his wife in later for it, she paying the full price.

They often quarrel among themselves, but hold up for each other if an outsider interferes. One afternoon an old farmer came from town with his wife, quarreling on the way. Driving up to the place where I boarded, the man got out of the buggy and asked to borrow a pick handle. On inquiring what he wanted with it he said, "To beat my wife with." Needless to say, he didn't get the pick handle, and this turred his wrath from his wife towards us. After blustering around a few minutes he drove on to-

wards home, apparently in a better humor with his wife.

These Russian peasants are slaves to the cigarette habit. When they meet and chat on the road or in town, if only for five minutes, they roll and smoke a cigarette. They are great tipplers, and usually support as many saloons in their towns as churches. They drive to town on week days and spend most of their time in a saloon, but on Sunday the same people go to the meeting house in the same town for worship. They spend the day at the church, taking their noon lunch along.

Notwithstanding their ignorance, they seem satisfied, in the main, with their surroundings, and feel at home in this country, more especially where the settlement is entirely Russian. Their farm life here is about the same as in the country they came from, and I suppose they knew as little about the government of the Czar when they lived in his dominion as they do now of Uncle Sam's. They pay their taxes grudgingly, observe the customs of their ancestors and have no further ambition.

Their living expenses amount to almost nothing. They use but little lumber in their houses—only for rafters and door and window facings. The walls are mostly sod, and the roofs of straw and sod. A big sheepskin overcoat, with the wool turned inward, is the most necessary garment in winter. This covers not only the trunk of the body, but the legs down to the knees. On a sack of flour they will live for a month and support a family. I knew one old fellow who settled down on the prairie, built a sod house, with the aid of his wife, and lived there seemingly with no means of support whatever. His father-in-law gave him a few sacks of wheat, and a kind-hearted neighbor gave him an ox with the lump-jaw. He bought a pair of horses on time, hitched them to a plow with the ox and began breaking land and sowing wheat while his wife gathered the rocks into piles.

These Russian farmers know nothing about comfort as we Americans understand it. Even if prosperous their fare consists of the plainest food. I was once invited to dinner by a Russian farmer in good circumstances. When we came to the table there were no plates, cups nor saucers upon it—simply a fork and a spoon for each individual. In the middle of the table sat a bowl of milk, some bread, and a large dish, somewhat like a washbowl, full of hot, steaming dumplings. The farmer asked me, as a stranger, to commence first, but I was at a loss to know how to begin. As I hesitated, the youngest in the family, a boy of eight, helped me out of the dilemma by taking his fork and diving it into a dumpling, raising it to his mouth and munching it. In less time than it takes to tell, half a dozen more dumplings were forked out of the bowl and we were eating them in the same manner, while seven spoons were now and then dipped into the bowl of milk to wash down the dumplings.

These peasants, old as well as young, are quite sociable and visit each other frequently, bringing viols, accordians, drums and other noisy instruments. They are supplied with sunflower seed by their hostess. These they shell with their teeth and chew the kernels, apparently with much relish. If relatives or close acquaintances haven't seen each other for some time they embrace upon meeting, for a hearty kiss or two.

I roomed at the sod house of a Russian peasant once, as my employment made my presence there necessary. The winter was severe, and the farmer often expressed his disgust at the weather in mutterings and grumbings. One morning when the thermometer registered about thirty below zero he took me around to the barn, showed me a calf less than twelve hours old and asked me if I thought it could stand the cold. I replied that I did not know. Next he showed me some chickens that had had their feet frost-bitten. I told him I thought they were best fitted for the block, hoping to have chicken stew for supper. There was no sign of chicken stew, however, on the table when evening came, but that night when I got ready to retire I found the calf tied to my bed-post, stalking lustily about, while at the foot of my bed, in a large box with slats over the top, were the chickens, hens cackling, roosters crowing. The farmer said it was the only way he could save them, but I told him I would have to look for other quarters next day.

These Russians have no ideals other

than that of having money in the bank and owning a big tract of land, with a large herd of cattle grazing on it. If they are getting rich, and the old sod house is moldering to ruin, they build another of similar construction, maybe a little larger. They may build a frame house, but more likely they still live in the sod house. They may buy a load of coal, but they burn very little of it. As before stated, they burn dried refuse, and sometimes the smoke gathers so in the room that they can hardly distinguish one person from another. They almost all have sore eyes, suffer from catarrh and are scarred with smallpox.

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Bob's Object Lesson.

Bouncing Bet was the abomination of the sty. Had she been a member of the human family her selfishness would have earned for her the appellation of the end-seat hog.

With her enormous bulk and vicious mouth she cowed all other occupants of the pen, invariably crowding them from the trough or the feeding-ground where the corn was thrown. Bleeding ears and bitten sides constantly attested to her greed and glad were her companions to slink away to some remote corner and there wait until she had satisfied it with the last vestige of the rations supposed to have been sufficient for all.

She was also Bob's particular aversion, now that Ned was away attending high school and the duty of doing chores had descended to him.

Bob was not tall and the enclosure over which he had to turn the kitchen refuse was a disgrace to the place being an old, patched-up, rickety affair that went by the name of fence.

Since coming to Clover Croft his father who was a neat, tidy farmer, had not had time to attend to this piece of unsightliness, as the late owner had left many similar ones about the premises, having been so absorbed in accumulating acres that he had neglected all appearances and conveniences, and had died, not only "land-poor" but absolutely insolvent.

One cold morning after a frozen rain had left fields, roadsides, lawns, and barnyards one glare of ice, Bob went to feed the hogs. Cautiously picking his way to the pen, fearing every moment that a slip might cause a fall and flood him with his undesirable burden, he found, on reaching it, that, as usual, Bet was standing on her hind feet, fore ones planted on the top rail, grunting defiantly, small eyes glaring greedily, and insolent snout ready to fight its way into the pail.

Bob's caution in keeping his own footing so divided his attention that, just as he was in the act of lifting the pail over the fence in order to empty its contents into the trough, a lunge of Bet's bulky body gave the whole ramshackle structure such a jar as to throw both him and it to the ground.

With his cap sliding one way, the pail another, face, hair, hands, and clothes all submerged in the greasy flood, Bet grunting voraciously above him, he managed to exclaim, "You miserable creature, you have ruined my jacket and made me tardy for school, but thanks to your greed you have lost your own breakfast and taught me what pa means when speaking of your former owner he says, 'Grasp all, lose all!'"

THE FARM PAPER.

BY R. SMITH.

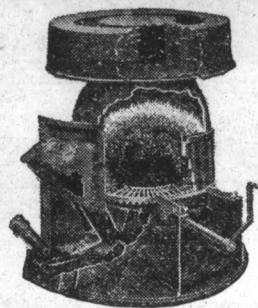
When your horses have the colic,
And the old cow's calf goes wrong;
When the market's on a frolic
And quotations are not strong;
When you fail to get a corn crop,
Ditto with the wheat and hay,
Better turn the old farm paper—
See what other fellows say.

Perhaps you want to build a pig-pen,
Maybe silo, farm-house, barn;
You will find the very thing, men,
In your paper of the farm—
Just how large or small to make it,
Of what stuff that it should be,
'Cause there's other fellow's tried it
And they tell you—tell you free.

Again, we want a new farm fangle,
But we hesitate to buy,
And in doubt we fret and wrangle—
Hate to take a chance and try.
Well, we get the old farm paper,
Advertised, we see our need,
Sold by York, right in our home town,
And it's doubly guaranteed.

We subscribe—'tis business purely.
If all things we farmers bought
Paid us dividends as surely,
Money soon would be unsought.
Though we sometimes need the nickels,
As they leave us for the year,
We know well they'll be returning,
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Cut-out view of furnace showing the Underfeed Way of coal burning.

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is what C. W. Greene, Linden, Mich., calls the Underfeed. W. L. Hutchinson, Cecil, Pa., says, "We have no piece of machinery on the farm that gives better satisfaction than our Underfeed furnace." J. P. Scott, R. F. D. No. 2, Carnegie, Pa., says, "I have been using an Underfeed for 10 years and it is as good as ever. Can heat our house to 100 degrees on the coldest day." "Best furnace on the market," says John F. Ather-ton, Zanesville, O. Others write, "Coal bill \$16.22 for 7 rooms;" "\$5.40 to heat 4 rooms;" "Reduced coal bills from \$109 to \$53;" "Have cut coal bills \$70 each winter for 9 years." A saving of 1/2 to 2/3 is the certain result with the Underfeed. And over 25,000 users have proved it.

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(Mark an X after System Interested in)

Name.....

Address.....

My Dealer's Name is.....

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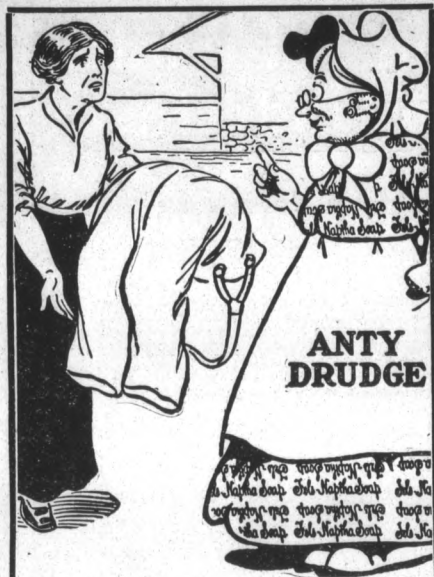


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Anty Drudge: "Well—I don't know. That's one thing I've never meddled with. But if anything will bring out both stain and smell, it's Fels-Naptha Soap. Let's try it, anyway. I see you have a box. That's right. I always tell everybody to keep plenty on hand."

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Woman and Her Needs

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WHY do I feel so enervated in the morning?" asked a woman a few weeks ago. And, although I could not tell that particular woman why she felt unfit for work when she first got up, because she told me so little about her general health, I can hazard a guess that the reason so many people feel grouchy and dumpish in the morning is because they do not get enough fresh air while they are sleeping.

We all remember from our earliest lessons in physiology just how essential fresh air is to the human body. We know that when we inhale we ought to draw in air laden with oxygen which is taken up by the blood in the lungs and that when the air leaves the lungs it is laden with carbon dioxide, a poison given in exchange for the life-giving oxygen. We know that the blood must have the oxygen in order to burn out the waste of the body and keep up the process of life.

But what do we do when the first chilly blasts come down from the north? Shut our bedroom windows and stuff the cracks with old rags, to keep out every sniff of pure air. Or at best we open them a beggarly six inches, and then if a breeze strikes our nostrils we burrow our heads under the bedclothes in order to get away from it. We are so averse to getting something for nothing, that we refuse health in the winter time because it comes to us in the form of a breath of pure icy air.

Over and over and over again through the night we breathe the same air, air which has been robbed of its life-giving property and laden with poison. Even if some of us do open the room in the day time and "air it out" as we say, we quickly take up the oxygen at night and before morning are breathing nothing but poison. All too many never open a window in their bedroom from October until April, in spite of the fact that they have been carefully taught the value of good ozone.

If you sleep with your windows closed and want to see what you are breathing, try this. Get up and dress some morning, go out doors and take 15 deep breaths of really pure air, and then go back at once into the room you have just left. If the stuffy atmosphere of your sleeping apartment doesn't convince you that you need a change, nothing I can write will do so. The woman who is tired out and exhausted mornings can work a wondrous change in a week's time if lack of fresh air is the cause. Open all your windows as far as possible from the top, except one, and as far as possible should mean half way. The other window should be raised from the bottom to form a current through the room. Set the bed where the wind will not blow directly upon you, or if you can not do this, screen it from direct draughts. Then prepare for bed.

Wear woolen underwear and hose, a thick fleecy-lined night dress, or better still, a flannel one, bathrobe, hood and mittens. At your feet put a stone jug filled with boiling water, or if you haven't this a good hot brick or flat iron. Provide other bottles of hot water or heated bricks to place about your body, be sure of plenty of thick comforts, and then retire. It is a good plan to have an extra comfort thrown over the foot of the bed to be drawn up towards morning. In the sanitorium at Howell, the patients have thick horse blankets which are warmer than the average comfort.

Thus fortified against the cold you can go to bed without fear of being cold or of catching cold, and may be sure of the best night's sleep you have had for months. Inside of a month you will feel the difference. Jangled nerves will be quieted and you will be surprised to find yourself singing some morning before breakfast.

Half the nerves of women are due to lack of enough oxygen. The busy housekeeper all too often fails to get out through the day, and at night sleeps without proper ventilation in the room.

Feeding her blood entirely on vitiated air, is it any wonder that the impoverished blood fails to keep the nerves in tone? A brisk walk of ten minutes each day and sleeping with fresh air all night will cure many a case of threatened nervous prostration. Perhaps you can't get the ten minutes. Very well, you can at least stop one minute ten times a day, step outside

the door and fill your lungs with fresh air.

Nothing could be simpler or cost you less than the treatment just suggested. But because it is free not a dozen women who read this will avail themselves of it. Instead, they will go to a doctor and pay him for medicine which they will take and not feel a bit better than they did before they began. It is a queer thing about human nature that the things we can get for nothing we always despise.

DEBORAH.

Screens Easily Made at Home.

By PEARL WHITE McCOWAN.

EVERY housewife appreciates a screen. They are as useful in summer as in winter. Nothing is better to keep the drafts off the baby as he takes his daily nap upon the porch, and they are equally as handy to use about a sick room, either to protect from direct heat, or drafts from some open door or poorly fitting window sash. They are just as fine for use before a fireplace or stove to protect one's flesh and eyes from too excessive heat, and the light housekeeper, who is usually cramped for room, will find innumerable uses for them in screening from view the homelier uten-

and tennon. That is, two holes were bored into the sides of the long pieces wherever a cross piece was to be fitted, and then with a pocket knife the space between these holes was cut away and the corners squared to fit the ends of the cross pieces which were cut away with chisel and knife to a uniform size as shown in Fig. A. The secret of a well-made screen lies right here. These pieces need to fit well to look well.

The bottom cross pieces are nine inches from the floor, the top ones six inches from the top of their respective panels. Still other cross pieces are fitted about five inches beneath the top ones. This strengthens the frame, besides giving the whole a very pretty panel effect, as shown in the drawing. This is not visible in the photograph, as it shows only on one side of the screen, the burlap being nailed to the side photographed.

The brads and glue are used to make all these fittings of cross pieces absolutely secure, and the frame, of course, is stained or varnished to the desired color before the burlap is applied.

The combination described, dark green burlap, mahogany varnish, and heavy-headed black leather upholstering tacks, makes a rich and beautiful screen that harmonizes well with almost any furnishings.

If, however, one desires a little more color, or a somewhat more distinctive idea, a particularly good effect is obtained by using a fancy molding for applying the burlap. These fancy moldings can be obtained at any furniture store and almost any photographer's gallery at a cost of from two to 12 cents a foot. The lumber yards usually keep them in plain lumber at from one-half to two cents a foot. These latter may be stained or varnished like the rest of the frame.

The frame for a most beautiful screen was stained a dull black, and dark green burlap applied with a fancy gold and black molding. Another lovely combination was a frame varnished to a rich

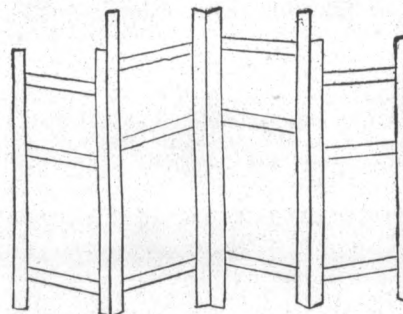


Diagram showing reverse side of screen.

sils of her work. If one is not blessed with a bath room one or two good sized screens will quickly partition off a corner of a room and make thereof a warm cozy little corner round the radiator or stove where the children of the family may take their baths. And they are especially desirable in a bedroom, thereby insuring some degree of privacy even when the room must be occupied by two persons.

In fact, a screen is one of the handiest articles about a house, and there is no reason under the sun, why they should not harmonize with their surroundings and partake somewhat of their owner's individuality. Thus the plea for the home-made screens.

For the porch or living-room, where a good substantial screen is desired for constant service, burlap or heavy denim are probably the most satisfactory materials for the cover. The frame will need to be of lumber, and therefore slightly heavier than many of those commonly sold in stores, but all the better, because less apt to tip or blow over.

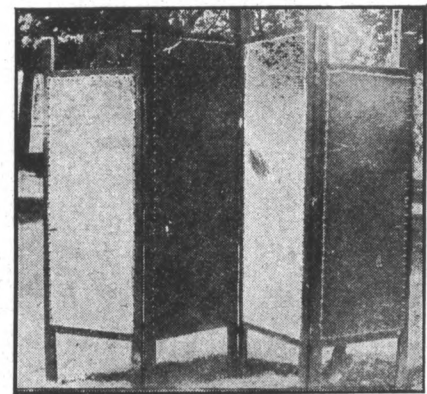
The one photographed was made from strips of planed lumber three-quarters of an inch thick and one and one-half inches wide. These were sawed into lengths as follows:

Four pieces five feet long, four pieces five and one-half feet long, 12 pieces 17 inches long, making in all a total of 59 feet of lumber at a cost of one cent a foot, or a total cost of 59 cents.

Besides this there were used six boxes of black upholstering tacks or nails at six cents a box, 36c; nine hinges, one and one-half inches square with screws, 25 cents; one box of 5/8-in. brads, 5 cents; glue, 5 cents; two and three-fourths yards of dark green 36-in. burlap at 20 cents a yard, 55 cents.

For the finishing of the woodwork there was one can of "ground color" at 20 cents, and one can of mahogany varnish at 25 cents, making in all a total cost of \$2.30.

With chisel, knife and auger, the big boy of the house fitted the cross pieces into the long upright pieces by what is termed in carpenters' dialect, a mortise



The Screen Completed.

dark cherry, with molding stained to match; and a soft brown denim, upon which was stenciled a conventional design in blue and dark brown.

For the daintier bedroom screens, a frame of white, with a molding of blue and white, or green and white, or gold, and, instead of burlap, a delicate two-toned matting, is perhaps the most tasty and beautiful thing. In the large city stores similar screens are selling for a very high price, but their construction at home need not be particularly expensive.

A somewhat cheaper combination, that is nevertheless very dainty, is a frame of white or light blue, and a cover of dainty flowered curtain material applied with a fancy braid and gilt tacks. Or, better yet, a cover of scrim or linen with a pretty stenciled design in each upper panel.

All these styles are not only serviceable and easily constructed, but ornaments to any home and a joy to the eye of the most fastidious housewife.

THE TWENTIETH CENTURY CLUB'S "FRIENDLY CLINIC."

Some misunderstanding exists regarding the intentions of the Friendly Clinic, the department organized by the Twentieth Century Club of Detroit for the benefit of girls from the country who have come to the city to seek employment. One mother writes to ask if the clinic can furnish board and rooms and what are the rates. The ladies in charge have not planned any such work, but only to give advice and encouragement to strangers in the city.

From 7:30 to 8:30 each Saturday evening, any girl needing counsel will find women ready to help her in the club's rooms at the corner of Witherell and Columbia streets, one block east of Woodward avenue. On this evening the Witherell street entrance will be used instead of the door on Columbia street. Girls who are new to the city and alone, may present their problems and be sure of motherly advice and suggestions. Several have already availed themselves of the clinic, and the women hope to reach every homesick country girl who needs encouragement.

BELIEVES IN THE VACUUM CLEANER.

BY MARY C. BLUE.

About a year and a half ago we purchased a small hand vacuum cleaner. Of course, the suction is not as strong as a 20-horse power machine, nevertheless I can operate it alone and today it is doing just as good work as when new.

When we first used our machine we were ashamed of the dirt we had been harboring although we were endeavoring to have a sanitary home by having no carpets tacked to the floor.

Before we purchased the vacuum cleaner, dusting the floors was somewhat difficult as it is very muddy in our section of the country and a quantity of mud is necessarily tracked into the house which makes the dust.

By using the vacuum cleaner nearly every day in the winter the children can play over the living-room rug without kicking up a dust, which was an impossibility when we used the broom and dust pan, or the carpet sweeper.

One great advantage of these cleaners is, that they make no dust when being operated. In fact, you can dust and then sweep—which seems strange at first. No dust while sweeping is a great saving in curtains, walls and furniture.

"Doesn't these cleaners wear the carpets out?" is often asked. We think them no harder than the broom. Dirt and dust will cut a carpet out. Removing the carpet or rug to the clothes line and nearly beating the life out of it (and out of yourself as well), takes out only a fraction of the dirt that these machines pump out.

These machines have no equal in cleaning mattresses, pillows, or upholstered furniture. It is astonishing how much dust can be taken out of a mattress.

We often lay the comforters on the floor and go over them with the cleaner and remove more dust and do it much more easily than by washing. The woman who goes over her rugs weekly with a machine will find she has greatly reduced the house cleaning problem.

A delicate woman with a large house may find it necessary to divide her cleaning into two or more days.

The thoroughness with which these machines do their work will make any woman who uses them their friend. One little woman voiced her enthusiasm for the vacuum cleaner when she said, "If I should break my vacuum cleaner and could not buy another, I would beg, borrow or steal the money before I would do without one."

Mutton, venison, rabbit, wild duck, in fact, all meat with excess gameness, become delicious when soaked in skim-milk and keep almost indefinitely in its brine. One day before using take out, wash, lard and dry well. Buttermilk may be substituted for skim-milk for small game and

one day's soaking will be sufficient.—F. H.

To keep moths out of carpets, wash the floor with a strong brine before laying the carpet and sweep with salt once a week.—L. N.

A SERVICEABLE OINTMENT.

Cold weather is here with its train of chapped hands, roughened skins and sore lips, and mothers are anxiously inquiring what they can do to heal up small hands? Is there a quicker cure than our old friend, vaseline? Indeed, vaseline is so true and tried a friend to man, that with some it is meeting the fate of all good friends, and being neglected for others of more flashy appearance and name, but not half the merit.

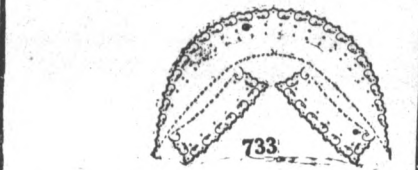
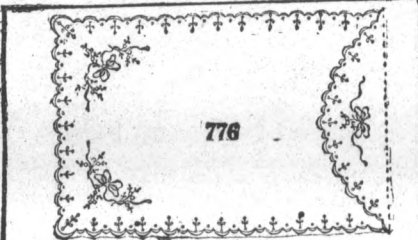
When you burn your hand severely and go to a doctor to have it dressed, doesn't he coat it gently with a thin smear of vaseline and wrap it in absorbent cotton? He will tell you he doesn't know of anything more healing, than vaseline, and he might add, nor anything which would cost him less money. If you look in his case of surgical instruments, you will probably find he has them coated with the same vaseline to prevent their rusting, a tip you might make use of when you put away your carving set.

If the baby's head is inclined to be covered with scale or dandruff he will tell you to rub in a little vaseline at night, and gently wash it with pure soap in the morning, and the scale will be removed and in time heal up. If he isn't too busy he will add that the vaseline will encourage growth of hair on the small head, for this is another use to which vaseline may be put. Vaseline mixed with crude oil is claimed to be a fine thing to stop the hair falling out and start a new lot to growing.

In many homes vaseline is the standard remedy for every sort of skin and scalp trouble. Recently a new cure has been credited to it, that of canker sores in the mouth. A victim who has been troubled for a long time and tried all sorts of cures, in desperation one day seized the vaseline jar and rubbed some on the irritating sores. Inside of 24 hours they were healed. Vaseline in metal capped bottles is said to be the purest and best for family purposes.

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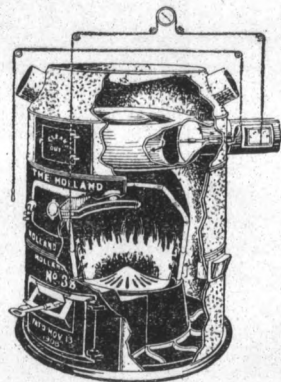
No. 776—A design for embroidering an infant's carriage cover. Stamped on 21x36 best round thread Scotch linen, with one dozen 12-yard skeins of white mercerized floss work, 60c.
No. 733—A design for embroidering a shawl collar and cuffs. The scalloped edges are to be buttonholed. The dots can be worked solidly or as eyelets. Stamped on best white pure Irish linen with mercerized floss to work, 60c.
No. 774—A design for embroidering the ends of a table or dresser scarf. Two ends 12 inches wide are given. Stamped and tinted on art crash, 17x54 inches, with mercerized floss to work, 40c.
No. 632—A design for embroidering a doyley 10 1/2 inches in diameter. One transfer is given. Stamped and tinted on white Irish linen with mercerized floss to work, 25c.

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This picture, recently taken, shows her condition and appearance at this time. Write Mrs. Taylor. In treatment of this case plaster paris was not used. The



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Farm Commerce.

Shrinkage of Beef Cattle While Enroute to Market

ALL cattlemen know that when their stock arrives at market, the weight is usually less than that shown at the farm. This loss in weight is called "shrinkage," that is, shrinkage is the difference between the weight of the animals at the farm and the weight on arrival at destination. The "net shrinkage" is the difference in weight at the farm and the weight of the animals at which they are sold on the market.

Some Definitions.

All animals lose in weight during the trip to the market, because of excretions from the alimentary canal, from the urinary organs and from moisture given off by the lungs in breathing. A portion of this loss may be gained after the stock has reached the market where they are usually given food and water. The consumption of this food and water is termed "fill." Now the loss in weight which occurs between the farm and the destination is termed "shrinkage enroute," and the loss in weight after the animal has had food, water and rest is termed "shrinkage after fill," or "net shrinkage." This net shrinkage is determined by subtracting the weights of the animals after they have been fed, watered and rested, from the weight of the animals at the time they left the farm.

Each year there are thousands of dollars involved in legal entanglements between owners of live stock and the railroads, because of excessive shrinkage. A knowledge of the normal shrinkage of animals moving to market will not only enable the owner to get a more definite idea of the value of his cattle at home from the market reports, but will also prepare him to understand whether a shrinkage has been excessive, and if so whether he or the railroad is responsible. Of course, there is always a possibility of abnormal variations when making shipments of cattle, and it is the purpose of this article to point out some results of work done by the Department of Agriculture which brings to light certain causes of normal and excessive shrinkages.

Grass Cattle Are Nervous.

There are two general groups of cattle, grass cattle and fed cattle. Cattle used to the open country are frequently so nervous after being shipped and unloaded at the stockyards that they will eat and drink very little because of the confining surroundings and the presence of so many people walking about. If the same cattle can be unloaded in the dark and are watered and fed before people begin moving about, they will often take a good fill. Where such stock arrives on the market in the afternoon, it is the custom to give them a little water at that time and then at night feed them all the hay they will eat, and in the morning allow them to take all the water they will drink before the market opens. This assists in giving them a fairly good fill, but does not overcome the drawn appearance which this class of stock usually presents when coming onto the market, largely because of their nervous condition.

Finished Stock Not so Easily Excited.

On the other hand, cattle which have been stable-fed and finished for market are usually docile; they are accustomed to seeing men walking about, and expect feed from them, as a consequence they do not show the restlessness of the range stock, and if weather conditions are favorable, they usually take a good fill and lie down or stand about in perfect contentment. Although this class of cattle do not expend a large amount of nervous energy, their fill does not make up for the full amount of shrinkage enroute, which leaves a net shrinkage to be accounted for when sales are made.

Another factor that should be given attention here is rest. While animals that are permitted to make a heavy fill immediately upon their arrival at market may overcome a large portion of the shrinkage enroute, still if sold immediately they will have a drawn appearance which always militates against advantageous selling. If, on the other hand, the animals have an opportunity to lie down over night and become accustomed to their new surroundings, they will become relaxed, their appearance will be more normal, and buyers will be tempted to offer a higher quotation for them, which

increased price often overcomes the entire loss from the net shrinkage of the animals.

Mr. W. F. Ward, in giving his experiences and observations as an expert of the Department of Agriculture along this line, points out the different factors that cause shrinkage. Any one of these factors may effect loss in weight of cattle during transit. Many times when consignments are sent under seemingly identical conditions, the shrinkage will vary considerably; this makes the work of determining the different causes of shrinkage a tedious as well as a difficult task to perform.

The Influence of the Season.

The first factor Mr. Ward mentions is the character of the season and the effect it has upon pasture grass, water supply etc. In a dry year when pastures are short and the water supply is low, the animals usually arrive at the loading point with a fill far below normal. This, of course, is more noticeable in the western states than in Michigan, but the result is that the animals developed under the influence of a dry season usually give a very small shrinkage, since the fill at market overcomes a very large part of the shrinkage enroute; but during a normal year, when grass is abundant and water plentiful, cattle will arrive at the pens with a normal fill, which means that the shrinkage is likely to be large during the ride to market, and will be only partly overcome by the fill after arrival.

Method of Feeding.

Observations have been made as to the amount of shrinkage in the weight of cattle that have been fed different rations. For instance, silage-fed cattle usually shrink very heavily while in transit, but they also make a large fill after arriving at their destination. The fills in many cases have been so large that the net shrinkage of silage-fed cattle usually average smaller than for any other class of fed cattle. One shipment of this class of cattle which came under the observation of Mr. Ward mentioned above, shows that the animals not only overcame the shrinkage in transit, but actually gained seven pounds each. There were 107 head in this consignment. The cattle had been kept from water and given dried feeds for 15 hours before shipping. Pulp-fed cattle usually show a heavy shrinkage, while corn-fed cattle show a greater shrinkage than that of the silage-fed cattle but a smaller shrinkage than the pulp-fed cattle.

Character of Drive to the Railroad Station.

The distance from the farm to the railroad station also makes a difference in the amount of shrinkage, likewise the method of driving and the character of the route are determining factors. Should the animals be hurried the shrinkage would be greater than if they are allowed to take their time. Also, if they can graze along the way and secure water whenever they desire it, there will be less shrinkage than if these opportunities for eating and drinking are not at hand. While the influence of the use of inferior dogs, of men who are not accustomed to handling cattle cannot be definitely determined, yet it is apparent that these things are important when one desires to have his stock get to market with the least possible shrinkage; yelling, cursing and pounding the animals appear to be charged up to the owner with compound interest.

The Kind of Cattle.

As suggested above, the class of cattle is another factor to be considered when seeking to find the cause for shrinkage. For instance, steers do not usually shrink as much as cows of a similar weight; then, too, the size of the animals has much to do with the shrinkage. Steers weighing 1,000 pounds will shrink more than steers weighing 750 pounds, all other conditions being the same. The degree of fatness also causes variation, it being observed that well finished or fat animals do not shrink as much as half-fat ones.

The Length of Railroad Route.

The distance from the initial shipping point to the destination is also a determining factor in the amount of shrinkage; naturally the greater the distance in transit, the larger will be the shrinkage. It has been learned, however, by actual

weights that after animals have been in transit over 36 hours, the rate of shrinkage is not so great per 100 miles during the latter part of the journey as during the first part. The largest shrinkage usually takes place in the first 24 or 36 hours.

Condition of Cars.

The condition of cars in which the animals are shipped seems to affect the amount of shrinkage. It is well known among cattle shippers that when cars are well bedded with sand or similar material, the cattle stand up much better and do not show the restlessness exhibited by animals that stand upon the floor of the vehicle. The motion of the car does not cause the animals to slip and fall as much as when there is no bedding provided. Besides there is danger of losing the animals that fall down in the car because of the slippery floor, by their being trampled upon, and poorly bedded cars may do them much injury through causing them to be so tired that they immediately lie down upon reaching the market, instead of taking their fill.

Weather Conditions.

The kind of weather prevailing during shipment probably affects the shrinkage of cattle more than any other one factor. Even though the animals have access to feed and water before loading a sudden change of weather may prevent them from taking any water at all, which would cause them to weigh up light at the point of origin and this, of course, would result in a smaller shrinkage than where they make a good fill before going onto the cars. Likewise a severe change of weather at the time the animals arrive at their destination may prevent their taking a good fill, and thereby greatly increase the amount of shrinkage. For example, cattle arriving during a blizzard will usually drink very little water and eat sparingly, they therefore weigh up light and the shrinkage is great. Cold rainy and cloudy weather also prevent the animals from making a good fill and the same is true of close, warm, muggy weather, and during such periods the appetites and thirst of the animals are not great, whereas if the cattle have several hours for rest, and the weather is normal, they will make a good fill, which reduces the net shrinkage.

Time of Arrival on Market.

We have already intimated that the animals will make a better fill and show up to better advantage if they have had a chance to rest before the market hour. This means that the time the animals arrive on the market is an important factor in determining the amount of shrinkage there will be. Should they arrive in the afternoon or early evening, they can be given a little water and an abundance of hay; the following morning, water may be turned on and kept before them all day. Where the cattle are from feed lots, the shipper may, in addition to the water and hay, give them other feeds on the morning of the sale. If, however, they are only grassy cattle, then water and hay are probably all that will be given. Cattle that arrive during the morning of the sale are usually too tired to take feed and water immediately. These animals, unless they are so tired that they immediately lie down, take an immediate fill, and the owners usually try to sell them before they lose much of this fill. It may be stated, however, that it is not always desirable for cattle to have an excessive fill at market. Buyers are always aware of how the cattle are handled, and when they see an animal that has had an abnormal fill they bid lower for such, to allow for the heavy loss in dressing. So, in spite of the unnatural condition the increase in weight is seldom great enough to overcome the decrease in the value of the animal, due to the lesser price offered. Mr. Ward states that the skill of the feeder is shown here by getting the increased weight from the fill without giving the animals the appearance of being stuffed.

The rehearsal of these causes of reductions in the weight of live stock should assist farmers in delivering their animals in better shape, as well as helping them to understand the occasional heavy or light shrinkages that occur.

Prospects for the future hog market are generally regarded as most excellent, as the early marketing of pigs and young hogs has left greatly reduced supplies of matured swine for future marketing. The owners of thrifty young hogs who, because of the unusual dearth of corn are shipping their hogs prematurely are making a serious mistake, for there are the best of reasons for expecting much higher prices later on.



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Crop and Market Notes.

Michigan.

Gratiot Co.—A fall of snow January 3 resulted in a run of sleighing which has been patched up by a few light falls since, and this afternoon and evening enough has fallen to make good roads. The roads have been icy for a week, and today's snow came in a slush which should make sleighing ideal when it freezes. The snow is six to 12 inches on the fields so that wheat, rye and seedings are well protected. But few farmers in this section make any attempt at feeding cattle. Usually two to six cows are kept with a few head of calves. There is but little farm activity at this season. Occasionally a farmer is cutting and marketing wood which brings \$2.15 green. Chores and keeping fire engages the attention of most farmers. Corn is the chief grain on the market at 54c shelled. Hens have not shown much interest in high-priced eggs. From 60 to 100 hen flocks are producing from four to 16 eggs a day. They sell at 27c. Butter fell off three to five cents the second week in January. The markets pay 17@22c. Live hogs have advanced 50c since January 1.

Sanilac Co.—Snow has been falling more or less for the last week, but in spite of high winds and frost, the ground is all covered nicely, the thinnest places having four or five inches. The ground not being frozen much, one could hardly wish for better conditions for wheat and meadows and fields in general. Sleighing for the past ten days is rather thin in some places, lots of gravel being drawn on the highway. A considerable amount of young cattle are being fed, but no lambs. Hens have been checked from laying somewhat by zero weather. Some hay is going to market.

Ottawa Co.—There has been just snow enough to cover the ground nicely this month but not enough for sleighing. Wheat went into the winter in good condition. About the usual amount of hogs are being fed, but not much other stock, as this is a dairy section and most of the calves are sold for veal, bringing from \$10@12 per head when three weeks old. Eggs are beginning to come into the local market a little more freely, but not more than enough to supply the local demand. The price at present is 28c. There has been so little rain that the roads are in fine condition so that autos have been able to run in the country almost up to the present time. Many farmers are buying autos.

Shiawassee Co.—A heavy snow storm swept over this portion of the state the 15th. Sleighing is splendid and farmers are busy hauling wood, logs and manure. Many barns and residences will be built as soon as the weather opens up. Sugar beet agents are busy securing acreage for another year. Farmers are a little slow in contracting for growing beets on account of the lower rate per ton. Wheat now has a good covering of snow and ready for severe weather. Not as many lambs have gone on feed this winter as last on account of the uncertainty of the feeding season. No cattle have been put on feed. Two farmers purchased a few horses on the Chicago market and will fit them for the spring trade. Hogs are not plentiful. A number of farmers are out of the sheep business because of the poor prospects. Most farmers who are in the dairy business veal their calves at four to seven weeks of age, consequently very few young cattle are grown. The hay market is very dull and practically nothing doing. No business being done in the bean trade.

Monroe Co.—On January 2 it began to snow, continuing all day until about eight inches had fallen, the first this winter. We have had a very good foundation for sleighing if it would freeze up and the snow stay on, as the snow was very wet and heavy as it fell. We have had very mild open weather this fall, much plowing and tile draining have been done, and farmers have had a good chance to make improvements. Hens produced a fair amount of eggs during December so that it cut the price of eggs a few cents. I expect they see the women's proposition to boycott the egg business in Toledo, so the hens set about it to help the women out. Fresh eggs are now 34c dozen; fowls, live 12c; dressed 13@14c; ducks 18@19c; geese 15@16c; turkeys, live 19@20c; dressed 23c; hogs, dressed 9½c; rough and heavy 8½@9c; calves 12@13c. A good deal of hay and grain is going to market, also some potatoes, though some potatoes are being kept back for a higher price. Some farmers have been having trouble with their cows having scours, some being very bad. No one seems to know the real cause. A good many cattle are fed, and horses are doing well. Some farmers are feeding molasses to stock. Wheat and seeding are showing up well so far. The roads at times have been very bad, though we have a good deal of stone road which helps out considerably.

Arenac Co.—On January 2nd it snowed all day and night, making good sleighing in most parts of the county, thus helping the new seeding and wheat, although some farmers claim it is too late to do much good. Farmers busy themselves getting out a few logs, wood and posts for future use. Cattle doing well, young stuff pretty well cleaned up. Cows are bringing a good price, but other grades are down. Hogs are scarce and prices are very good; no cholera in these parts. Farmers are marketing some hay, beans, hogs, oats, etc. Beans \$1.50 bu; hay \$9@13 ton; hogs, dressed 7½@9c; oats 35c; chickens, live 8@9c; potatoes 50c. Not many feeders in this section, either in sheep or cattle, as this is a new territory.

New Jersey.

Morris Co.—The weather has been very cold, with very little snow. Ice is 10 to 12 inches thick and the creameries and

others who have ice houses are busy filling them. The quality was never better. Winter wheat and rye are looking fine. Roads are in good condition. Hens are slow in getting started to lay. Eggs 35c; butter 35c; bran \$29; horses \$150@250; cows \$50@80.

Pennsylvania.

Lancaster Co.—There are thousands of steers fed annually in this county. The lens have begun to lay because of the open winter. There has been scarcely any snow here. Wheat is very good. Farmers are marketing hay at \$12@16; Wheat 85c; straw \$8; butter-fat 36@40c; dressed pork 10c; dressed beef 12c. The condition of the wagon roads is normal. As this is a tobacco and dairy section, the farmers strip their tobacco and attend to their dairies during the winter months. Most farm laborers are hired by the year. Over half of the farms are farmed by tenants.

Chester Co.—The farmers of this county employ the most of their time through the winter taking care of the dairy, the milk cow being the principal stock fed, and there is about the usual number being cared for this winter. Owing to the shortage in crops the past year, the farmers have very little to sell except the milk, which will net 4½c per quart. We have had very little snow, and the roads are frozen, but are smooth and in good condition.

Montgomery Co.—The weather has been fine for this time of the year, with hardly any snow yet and not much ice. The roads have been in good condition so far. Wheat and grass fields are in good condition. The hens have not begun to lay yet, considering the nice weather this fall. As this is a dairy section 32 miles from Philadelphia, the farmers are mostly engaged in tending to the dairy and getting wood and fence material ready for next spring. Farmers living near the railroad ship their milk to the city. The price will be for January 4½c, freight included, which is 60c per 100 quarts. Milk at the creamery is \$1.70; eggs 36c; creamery butter 42c; poultry, dressed 18c; hogs, dressed \$11; veal calves \$10.50; choice timothy hay 70c; meadow 45c.

Ohio.

Columbiana Co.—The new year has started in with a heavy snow fall in this section, the snow covering the ground to a depth of two feet. Roads were in fine condition before the snow, and sleighing will be fine when the roads have worn down a little. The farmers are not very busy at present. A good many have been hauling logs. The wheat looked fine before the snow and is in fine shape for cold weather. Hens are not laying much yet, but the price of eggs has gone down to 32c. Farmers have not been selling much for a few weeks. Butter is 35c; chickens 15c.

Brown Co.—The ground being covered with snow, and the thermometer standing at about the freezing point, it is taking more feed than it has since winter set in. There is scarcely any stock being fed for market and not many hogs. The farmers are getting no eggs at all, which has caused a good many to market their poultry. The wheat has had very severe weather until the last week or so, which has checked its growth. The roads are in fair condition for the time of the year. The farmers are engaged in odd jobs such as cutting wood and hauling out manure, also plowing when weather permits. Eggs 28c; butter 22c; chickens 12c per lb.

Missouri.

McDonald Co.—We are having winter here now. It is not very cold, but pretty wet. We have had almost a foot of snow this winter. Not very much stock is being fed except the usual run of stock. Cream is being shipped out of the country by the farmers to quite an extent; the price for butter-fat is 34@35c. The hens are not laying very much now; eggs 25c; corn 60c, although there is practically no corn being sold.

Kansas.

Pierce Co.—The Commercial Club and business men of the town of Plainview organized a public sale day that anyone can bring in anything that they have that they want sold and it will be sold to the highest bidder by an expert auctioneer free of charge, the first Wednesday of each month being sale day. Last Wednesday was the second sale day since it was started, and was a good day and a lot of stock and farm tools changed hands. There have been but a few farm sales; fairly good prices were realized; milk cows selling well.

Antelope Co.—Not very much stock of any kind being fed in the north half of this county at the present time. Hens have not begun to lay very much; eggs are 25c locally. There has been no snow as yet. Fall wheat and rye are in good shape, but only a small acreage planted. Corn and oats are being marketed to a limited extent at about the usual prices. The roads are good. Farmers are shelling corn and paying around 75c per hundred bushels for shelling.

Nebraska.

Hitchcock Co.—At this time of the year (Continued on page 122).

REMEMBER!

That the Michigan Farmer tests milk and cream free of charge for its subscribers. Thoroughly mix milk or cream by pouring three or four times from one pail or can to another; take sample and put in four-ounce wide-mouthed bottle, enclose bottle in a mailing case and send by parcel post to Michigan Farmer's Laboratories, 674 Woodward avenue, Detroit. Should you need a suitable bottle and mailing case, they will be sent postpaid for 10c in stamps. Order bottle and case of Michigan Farmer, Detroit.



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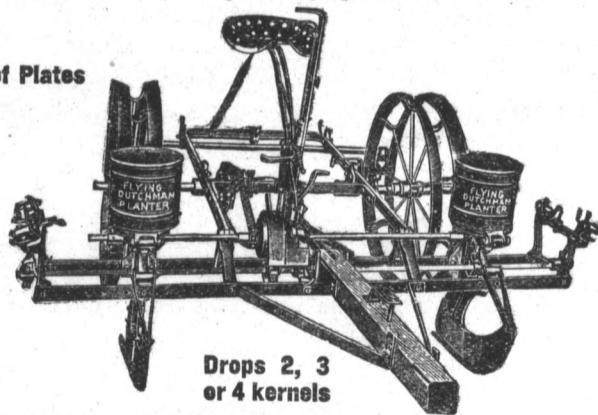
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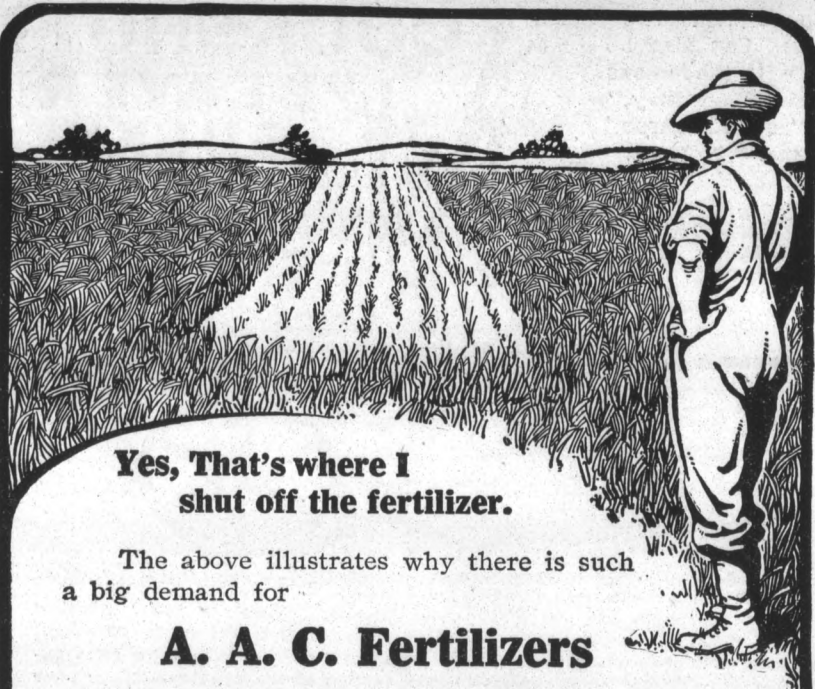
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Practical Science.

CITY MILK SUPPLY.

BY FLOYD W. ROBERTSON.
(Continued from last week).

The Score Card Shows the Dairyman where to Commence.

The condition of the utensils used; the facilities which the dairyman has for cleaning these utensils and sterilizing them; and then afterwards the condition in which the milk is kept after its production; the temperature and the facility with which the milk is marketed, all are reflected in the score card system of inspection. When, therefore, an inspector visits a dairy farm and makes his score according to the individual items of the score card, the dairyman has left with him a careful record of the inspector's judgment of conditions at his dairy with emphasis laid upon the points in which he is weak, so that if he is anxious to produce milk of high quality he knows where to begin to make improvements.

So much for the production of milk upon the farm. The next step is the transportation of this milk, and here we find a conflict of responsibilities. The farmer's duty ends, of course, when he has transported the milk to the railway station, and sometimes when the carrier has taken it from his farm. The check the inspector has on these conditions of transportation is a temperature check, and he may simply insert a thermometer into the various cans as they arrive at their destination in the city, to determine if they have been kept under sufficiently low temperature to make rapid development of bacteria impossible. So most city health departments have designated a temperature of 50 degrees and have empowered their inspectors to reject milk which arrives in the city at a higher temperature than this. Of course, as we have stated, we do not see how the dairyman can guarantee that milk shall reach the city at 50 degrees or lower, except he is in position to bring it in himself which, of course, would pertain in but a very small percentage of cases. The best they can do is to deliver the milk to the railway station at a temperature under 50 degrees, and this they may be able to accomplish. It is the duty, it seems to us, for the state to insist that the distributor or the carrier be compelled to furnish proper facilities for refrigerating the milk when it is delivered at the station. In this way, and in this way only, do we see how milk may be marketed at the proper temperature and the respective parties be made responsible who are indeed responsible, at their respective points. It manifestly is unfair for the city milk inspection department to reject milk when it reaches the city and throw it back upon the producer simply because it is not at the desired temperature, through no fault of the farmer. And yet we realize it is the only expedient at the hands of the milk inspector, for he is simply preventing the marketing of unwholesome milk within the confines of his authority.

Why Could Not the Railroad Commission Supervise the Transportation of Milk?

It seems to us that there is an important problem to be argued before the state body having charge of the problems of transportation, and they be urged to compel the common carriers to transport this product, milk, and deliver it to destination in a condition at least as satisfactory as that in which it is placed in their control.

In New York City this problem has been met in a measure by the installation of milk trains which reach way out into the state for the milk supply. Milk which is carried to the city in refrigerator cars arrives there in almost as good a condition as when it is produced on the farm, but no milk is improved by being permitted to stand on the station platform in the sun for from one to three hours before the train arrives and then being carried for two or four hours on the train in an ordinary express car without refrigeration, until it finally reaches its destination in the city at a temperature between 60 and 80 degrees, under which conditions the bacterial development is indeed very rapid.

The conditions surrounding the production and transportation of milk are conditions that need very serious study. We think they are of sufficient importance that the state should appoint a commission to inquire into the methods of trans-

portation of milk and to recommend either to the legislature or to the state railroad commission a feasible plan to protect this milk on its way from the producer in the country to the consumer in the city.

LABORATORY REPORT.

Tuberculosis Germs in Milk.

Can a cow be examined by her milk to tell if there are any tuberculosis germs? St. Joseph Co. F. M. F.

Regarding the detection of tuberculosis in milk we will say that it is rarely detected in this way. It is now the general consensus of opinion that tuberculosis may be conveyed in the milk supply, but it is a very difficult matter to detect the tuberculosis germ by an examination of the milk. This has been done but it is the longest way round.

The best method of determining if the animal has tuberculosis is to subject her to the tuberculin test, which is not a difficult test to make, although it does take a little time and depends upon some detail skill. We would suggest that if you have any suspicion of the cow in question you have her tested by the tuberculin method. In fact, nowadays people are not waiting for this suspicion to arise. It is getting to be the custom to make sure of the matter by having their milk-producing animals subjected to this test in the first instance.

Making Cider Vinegar.

I have 25 barrels of cider that I made last fall. It is hard now. I want to make vinegar out of it. What can I do to it? Can I make vinegar before next summer without much expense to me?

St. Joseph Co. SUBSCRIBER.
With reference to the manufacture of cider vinegar from hard cider with not a greater quantity than 20 or 25 barrels, we think the best thing to do is to allow it to stand in the barrel until it has become converted. It may be a good idea to rack off the barrels until they are not more than two-thirds full. If one has a number of barrels it would even be better to reduce them to one-half barrel in contents. Then lay them on the side and open the bung. Perhaps pour in a gallon or two of good strong cider vinegar in each one. It would be well, then, to place the barrels in a store room where the temperature may reach as high as 70 degrees. Every two or three days roll the barrel so that the stock solution will occupy a slightly different position and will be given an opportunity to get more in contact with the air. One must bear in mind that in the manufacture of vinegar plenty of fresh air is needed for the process. This will take three or four months for the manufacture into vinegar to be completed. This slow process will make a splendid grade of vinegar, although this is not accomplished as readily as some of the processes in vogue in large factories. We would like to state, however, that one of the most prominent vinegar firms in the country has gone back to practically this slow barrel process for the manufacture of vinegar because they believe it produces a splendid product.

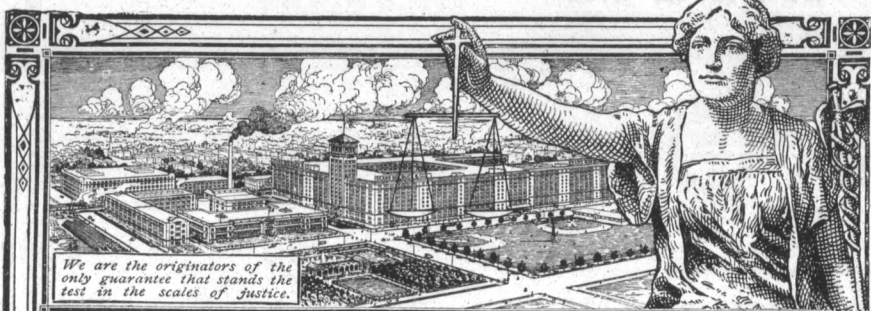
CATALOG NOTICES.

Planet, Jr., farm and garden implements, manufactured by S. L. Allen & Co., Philadelphia, Pa., are fully illustrated and described in a 72-page catalog sent by this firm on request. In it will be found listed all kinds of garden implements, including hand hoes and seeders, and a large variety of styles of horse cultivators for every purpose for which such an implement is needed on the farm, with many of which Michigan Farmer readers are already well acquainted. Write for a copy, mentioning the Michigan Farmer.

Zyro Metal Silos, made of anti-corrosive galvanized sheets, and manufactured by the Canton Culvert Co., Canton, Ohio, are illustrated and described in a handsome catalog which will be sent upon request to Michigan Farmer readers. In it will be found full information regarding the materials and methods used in manufacturing this silo, details of its erection, and other information of interest to prospective users.

D. M. Ferry & Co., Seedsmen, Detroit, Mich., will mail their 1914 Seed Annual upon request to Michigan Farmer readers. This large catalog lists a full line of farm, garden and flower seeds offered by this well-known Michigan firm, every variety being carefully described, with many illustrations.

The annual catalog of small fruit plants, published by Mayer's Plant Nursery, Merrill, Mich., lists a select line of choice small fruit plants and a number of kinds and varieties of trees and seeds.



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Poultry and Bees.

HOW TO PICK OUT THE VIGOROUS BIRDS.

A weak fowl very seldom shows the sex characteristics as clearly as the strong birds. The male bird that is continually crowing and in other ways showing his sexual characteristics can be depended upon to be constitutionally strong. The female that is merrily singing and cackling all day long, is another individual that is vigorous and healthy. Probably the best indication of a fowl's physical condition is by her actions. The physically weak are inactive and sluggish, and more likely to sit around, or on the roosts, than scratching for feed. Those individuals always last from the roosts, and the first on it again, can be depended upon to be the weakest specimens in the flock. I have invariably found this to be true. Another good way of picking out those of the lowest vitality is to pick those moping around in the corners, or standing around in the sun with their feathers ruffled. Not only are all of these constitutionally weak, but they are surely very unprofitable birds to keep. Sell them and be rid of them. Those individuals that make it a practice to roost during the daytime, are plainly showing their physical weakness.

The deep, compact, thick body shows more vigor than the slender and more delicate body of the same variety. A fowl of low vitality is likely to have a long, thin beak and head; long, thin neck; long, slender body; long, thin thighs and shanks and long thin toes. Just the reverse is true of the constitutionally strong.

A healthy, strong and vigorous chicken has a bright red comb and wattles of medium size. It has prominent, bright and clear eyes. Shrunken eyes invariably shows physical weakness. Remember a fowl carries its health certificate on its head.

The development of tail feathers is another sure indicator of a strong constitution. The breast bone of a constitutionally strong bird should be round and full, the keel bone well covered with meat to the point, and broad between the legs. This denotes great muscular development and a strong constitution.

The shanks should be of a pronounced color, of the variety, and not faded out, as is the case of the fowl of a low vitality. Large, plump shanks are sure indications of a strong constitution.

Brilliance in the plumage is an indication of constitutional vigor. Feathers of the fowl in low vitality grow slowly—they are likely to be dull and ruffled as compared to the close-fitting, smooth, fully developed, bright plumage of the vigorous fowl.

Remember another thing, a good appetite and a large crop is an infallible indication of vigor. One great reason why so many flocks of chickens do not pay better than they do is because so many weak specimens are allowed to be in a flock. A weak and low vitality chicken at its best is unprofitable. A weak fowl is much more apt to fall victim to any kind of disease, it may also be the means of developing a disease in your flocks.

So you see, at best it is profitable to cull out all constitutionally weak individuals and to dispose of them. Your breeding stock should be selected according to their vitality. Allow no fowls, either sex, in your breeding pens that are not constitutionally strong and vigorous.

New York. F. W. KAZMEIER.

WINTER POULTRY HINTS.

Winter is here, you know it, of course, but did you know that those hens wading around in the snow would not—could not—lay eggs? Yes, very likely you did but neglected to shut them in. Eggs are high. The man or woman who can gather a few dozen eggs every day will not soon become the victim of the high cost of living, so it behooves us not to forget the things that go to make these eggs.

No one can tell us just how to produce winter eggs but it can be done. It is a problem we must work out for ourselves to a certain extent. One thing is sure, we must keep our courage up. It is a hard thing to do sometimes but it is necessary for a discouraged farmer is almost as hopeless as—well, as an egg farm left to run itself.

If the lady of the house will sprout a few oats the succulent green tops and sprouts will go a long way toward making winter eggs, besides keeping up the health of the flock to a great extent. A sprouter that will do to experiment with may be easily made from an ordinary box about three feet square and four inches deep. Tear off the bottom and replace it with coarse cloth and it is ready for work. As many boxes may be made as necessary but after you try sprouted oats for a while this winter you will probably want a regular oat sprouter next year. Simply soak the oats over night and place in the box. Keep them at a moderate temperature and sufficiently damp and the sprouts will be ready to begin feeding from in three or four days. I have sprouted oats in almost every kind of a contraption imaginable and I have never yet been bothered with mould.

Fresh meat and freshly ground green bone are great favorites of mine for making winter eggs and I prefer them to the commercial beef scrap if I can get them. A bone grinder does not cost a great deal and is a valuable addition to any farm if one has a place near him where green bone may be secured.

Besides these things we must have an abundance of good litter. Most people undervalue good clean straw as a winter egg producer but did you ever notice how hens will work and how contented they are when digging in the litter scattered over the floor of a warm, well lighted, well ventilated house? It is the contented hen that lays the egg.

Now if we have plenty of milk this bone and meat can easily be dispensed with. I have never used milk extensively because I never had it to use, but with plenty of milk and the grains grown on our farms it is not a difficult matter to produce winter eggs if we use some sort of system in the care of the flock. The hen responds quickly to regular care and without it she is likely to be an unprofitable servant.

Indiana. W. C. SMITH.

GROUND OATS FOR FATTENING POULTRY.

In the majority of poultry runs a few fowls are generally being fattened up for home consumption, and most poultry keepers have their own favorite method of doing this. At one time the food most favored for this purpose was corn meal, as it adds weight quickly to the birds fed on it. As this meal produces so much fat and comparatively so little firm flesh, there is but little advantage in using it, and consequently it is rarely employed by those who are anxious to procure the best class of table birds. Preference is now given to ground oats as the staple food, for while it is admittedly an expensive form of food, the results accruing from its use are such as to prove it the most economical after all.

The advantage that feeding mash made from ground oats have over many others are that, while they contain a large proportion of fat-producing materials the flesh-forming matter is equally high. In addition to this, the meat formed as a result of feeding on ground oats is of an exceptionally fine quality, being white and well floured. Taking these things into consideration it cannot be wondered at that ground oats are regarded with great favor as a first-class fattening food by numbers of experienced poultry keepers.

Canada. W. R. GILBERT.

Observations made by government officials show that the month of maximum egg laying of hens is April, with birds kept in closed, warmed house and March with those kept in a curtain-front house. As eggs bring a higher price in March than in April, it should not take long to determine the better method of housing.

Now and then someone wants to know if it will be all right to mix grit in with the soft mash so that the hens will be sure to get grit enough. No—by no means should grit be mixed with the mash. If you provide hoppers of grit and shell, the birds will know enough to help themselves without your placing it in their food. In their hurry they might get more grit in the crop than was necessary, which would not do them any good, if positive injury was not done.

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Ironclads are not covered with cheap tin or other thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the Natural color—you can see exactly what you are getting. Don't class this big, all metal covered, dependable hatcher with cheaply constructed machines—and don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering, galvanized iron legs, large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boiler, self regulator, Tyco's Thermometer, glass in door, set up complete ready for use and many other special advantages fully explained in Free Catalog. Write for it TODAY or order direct from this advertisement.

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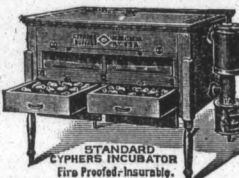
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Two more World's Championships in 1913, make my Belle City the 8 Times World's Champion Hatcher. No other incubator in the world approaches this record. Yet it is the lowest priced. When you buy my Belle City

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A postal brings it. It illustrates the Belle City Incubator and Brooder in actual colors—shows what makes the Belle City the 8 Times World's Champion—gives facts about hatching success, bigger and better than you have ever heard of before. It is the story of thousands of users of my Belle City hatching outfit—told in their own words. Thousands not in contests get 100% perfect hatches. Just say—send me "Hatching Facts." My low price will come with it. Write me personally, Jim Roban, Pres. Belle City Incubator Co., Box 14, Racine, Wis.



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If you are thinking of buying an incubator or brooder you should send for our big 1914 catalog at once. Describes many new, exclusive improvements in this year's PRAIRIE STATE Incubators and Brooders. Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat diseases, poultry buildings, home grown winter feed, etc. Just out—a postal brings it FREE. Write today—now.

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CHICKS—We ship thousands each season. Booking orders now for spring delivery. Prices always right. Free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

Barred Rock Cockerels, Hens and Pullets.

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BARRED ROCK COCKERELS—\$2.00 each, two for \$3.00, pullets \$1.00 each.

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

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White Stock Especially good, send for circular. Browning's Wyandotte Farm, R. 30, Portland, Mich.

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GUARANTEED

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Guaranteed for 15 years and will last longer

There is no test by which you can know how long a roof will last. Your safeguard is the manufacturer's responsibility.

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Canada's grain yield in 1913 is the talk of the world. Luxuriant Grasses give cheap fodder for large herds; cost of raising and fattening for market is a trifle.

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M. V. MacInnes, 175 Jefferson Avenue, Detroit, Mich.

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CLUB DISCUSSIONS.

Tenantry, the Silo and Scientific Farming Discussed.—The January meeting of the Essex Farmers' Club was held on the 14th with Mr. and Mrs. Austin E. Cowles. The day was quite cold, with a chilly wind prevailing, yet the interest in the Club, with a desire to enjoy its pleasures and benefits, brought nearly all members to the appointed place of meeting and a profitable session resulted. Mr. Cowles is one of the younger enterprising farmers of Essex township and is making a success in his chosen calling. His fine farm of more than 200 acres, is supplied with ample and convenient buildings, giving proof of his energy and its intelligent application. The main barn is 40x171 feet in dimension, with a sheep barn attached, of 50x100 feet in size. In the latter barn 800 sheep are being fattened; 42 steers, also, are being prepared for the spring market. Under the roof of the larger barn is a cement silo of 300 tons capacity. The house is heated with steam, and a lighting system supplies light for house and barns. The Club engaged in the usual opening exercises, following which Mrs. George J. Jewett gave a most helpful reading, entitled, "The Balanced Life," from the brain and heart of that gifted writer, Miss Jennie Buell. A synopsis of the article would not do it justice. It should be considered only in its entirety. A reading by Mrs. W. I. Carus was the next number. "Land Speculation," being the theme presented. It was shown that greater prosperity will result if the tiller of the soil be the owner of the same, instead of being "A Tenant at Will," as is the case in England where seven-eighths of the land is cultivated by tenants. In Germany a different system prevails, much of the land being owned by those who till it. In some European countries share-tenantry is coming into vogue. The thrifty Danish farmer is the one who can give the American farmer "points" in the matter of getting for the producer his proper share of the price paid by the consumer. A reading by Mrs. Frank Harvey, "The Rum Seller's Sign Board," closed the forenoon program. The exercises of the next hour and a half cannot be "fully" described with the pen, and is left to the vivid imagination of the reader to supply. The afternoon exercises opened with the singing of "I've Wandered in the Shades of Night." Roll call was responded to with conundrums and a lively guessing contest resulted. "The Silo" was the theme assigned to A. E. Cowles, who gave a very practical talk on this subject. Having filled and used his 300-ton silo for several years he was able to present facts. He believes that with the aid of the silo, Michigan farmers can compete successfully in the market with the western feeders of cattle and sheep. Silage keeps young stock in thrifty condition during the entire winter months. The silo makes best use of the entire crop. Silage may be fed with profit, during the entire year and, thereby, more stock can be kept on the farm and its fertility be much increased. A general and interesting discussion of the subject brought out the pros and cons in a helpful manner. Mrs. C. A. Matthews being called on for a recitation, gave birth to the proceedings by rendering "The Man and the Musket," and in so acceptable a manner that more was called for and brought "She stood at the glass and tried to button her waist behind." Following a recess the discussion of "Does Scientific Farming Pay?" was taken up. D. S. Morrison and Geo. J. Jewett being selected to lead the discussion, which became general, the trend of which insisted that former methods must to some extent yield to present-day requirements. The meeting closed with the singing by the entire company, "What a Friend we Have in Jesus." The February meeting will be held on the second Wednesday of the month at the parsonage, with Rev. and Mrs. G. W. Plews, of Maple Rapids. —J. T. Daniels, Cor. Sec.

Discuss Balanced Rations.—The Looking Glass Valley Farmers' Club was delightfully entertained by Mr. and Mrs. John Henning at their modern farm home. About 60 members and friends were present and after a social hour a bountiful dinner was served. The program was opened with two pleasing instrumental piano selections by Mrs. Lucille Rice. This was followed by business and announcements after which Mrs. Bertha Workman gave an interesting and instructive paper on Legumes as a Food. She gave a classified description of pod bearing plants and their value as a food. Will Workman gave a paper on "Good Seed Corn." He told how to select, dry and store the seed. A general discussion followed. The Club next enjoyed two instrumental selections on the piano by Mr. John Henning. Mr. Herman Bliss spoke on "The Cost of filling my silo," and Mr. A. W. Oliver told of "A more profitable corn planting method." Following this, the half-hour for study of balanced rations was conducted by Mrs. J. J. Maier, after which the Club adjourned to meet with Mr. and Mrs. Charles Chaplin, February 10.—Mrs. W. K. Lee, Reporter.

Grange.

THE FEBRUARY PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Song.
Roll call, responded to by each man naming the woman he considers greatest in American history; and each woman naming the man she considers greatest. Housewives should study food matters: 1. Put less, not more, food upon their tables. 2. Seek to understand food uses and values. 3. Strive for wider variety of wholesome food. "Lincoln, the brother of men," declamation. Patriotic drill, in charge of surprise committee. Questions propounded for answers to be given within three minutes' time. Song, by quartet. What I liked in this program. Simple refreshments, served by lady officers.

Suggestions for Second Meeting.

Fifteen minutes' song practice. Roll call, responded to by each giving a favorite quotation. What improvement in our rural school can our Grange champion and push to a reality? Discussion. A new book I have read. Orchestra music. How make a day at Grange or farmers' institute worth more than a day at home? by a man and woman. Character song. Refreshments of home-made candy, furnished by young ladies.

AMONG THE LIVE GRANGES.

Successful Membership Contests.—Two of Eaton county's hustling subordinates have recently closed membership contests. Charlotte Grange added 58 names to its roll and initiated a class of 36, the largest class of candidates in its history, at its first January meeting. The other subordinate referred to is Prospect Grange whose contest brought in 24 new members. Both of these Granges are booming, and most of the other subordinates of the county are showing evidences of healthy growth and wide-awake interest, all of which means that Eaton must be reckoned one of the really strong Grange counties.

Leelanau Pomona was entertained by Empire Grange in December. The appointed day proved a good one, although rather chilly, but this did not prevent the many loyal patrons from attending. The meeting was called to order at 10 a. m. and many important business matters were discussed and settled. After a bounteous repast and merrymaking the guests were ushered to the town hall where a program was to be given for their special entertainment. The program was a good one, reflecting credit upon Lecturer Birdsey. It comprised a number of readings, recitations and musical numbers and an excellent report of the recent State Grange meeting by Bro. Fred Atkinson. A fifth degree session was held in the evening at which occurred the initiation of five candidates. Over 100 people were present, this showing the rapid growth of Leelanau Granges and the patrons' loyal attendance.—Dena Satter.

Nunica Grange, of Ottawa county, held a fair in December which developed so much interest that it was decided to make it an annual Grange event. Its new officers, recently installed, are the following: Master, Eric C. Smith; overseer, Mrs. Wm. Weaver; secretary and treasurer, Solon Paul; lecturer, Andy Peterson; steward, Wm. Hallock; assistant steward, George Edwards; lady assistant steward, Mrs. George Edwards; chaplain, Mrs. Emma Spencer; Ceres, Nellie Moore; Pomona, Edna Brown; Flora, Laura Baldu.

Cass Pomona Grange met in Cassopolis, Wednesday, Jan. 14, to elect officers for a term of two years. The following were chosen: Master, Fred Wells; overseer, Harmon Coble; lecturer, Mrs. Lora Rickert; steward, Wm. Wagner; chaplain, Rev. Springsteen; assistant steward, Leo Parker; treasurer, G. W. Strong; secretary, Mrs. Wm. Wagner; gate keeper, Fred Brady; Ceres, Mrs. Fred Morley; Pomona, Mrs. Harmon Coble; Flora, Mrs. Albert Martin; L. A. S., Elizabeth Hadden.

Wetmore Grange, of Alger county, recently installed the following officers for the present year: Master, Chas. A. Gogarn; overseer, Benjamin Nelson; secretary, John Lehnen, Jr.; treasurer, Joseph Caskanette; lecturer, Justin G. Boucha; steward, Thos. D. Connors; assistant steward, Orson Livermore; lady assistant steward, Pearl McCombs; chaplain, Mrs. F. E. Cornish; gate keeper, Wm. Robinson; Flora, Flora Lehnen; Ceres, Blanche Gurski; Pomona, Elsie Paquin.

L'Anse Grange, of Baraga county, has elected and installed the following officers: Master, Joseph Picard; overseer, W. H. Turner; lecturer, Mrs. C. H. Anderson; steward, Mike Connors; assistant steward, Carl Bentzen; chaplain, Rev. Davey; treasurer, Jos. Kemp; secretary, C. H. Anderson; gate keeper, Jas. Grace; Ceres, Mrs. Clyne; Pomona, Ruth Jackson; Flora, Kate Jackson; lady assistant steward, Grace Clyne.

COMING EVENTS.

Pomona Meetings.
Seward (Baraga Co.), at Keweenaw Bay, Saturday, Jan. 31.
Eaton Co., at Charlotte, Saturday, Feb. 7. This meeting is to be a county rally, with each of the first four degrees exemplified by different subordinate degree teams.

SUPERIOR BEET DRILLS

Made in two styles—Plain and Fertilizer—with shoe or double disc furrow openers, adjustable to plant 16 18 and 20 in. apart in the row, four rows at a time. Spacing bars are furnished with each drill, enabling the user to make the necessary spacing without the use of measuring instruments. These bars hold the furrow openers the exact distance apart, thus making the rows easy to cultivate.

The Superior Feed is especially adapted to beet seed and has wide range of quantity. Agitators furnished with every drill. No "bridging" of seed. Gauge wheels can be used as spacers if desired. Assure even depth of planting.

Write today for the Superior Beet Drill folder. Read it and then go to your local dealer and insist on seeing the Superior Beet Drill.

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I absolutely guarantee to save you \$50 to \$300 on any Galloway gasoline engine. Made in sizes from 1-3/4 h. p. to 15 h. p. My famous 5 h. p. engine—without an equal on the market—sells for \$99.50 for the next 60 days only! Buy now! Same size costs \$225 to \$300 through your dealer. Think of it! Over 30,000 Galloway engines in use today. All sold on same liberal, free 90 Day Trial Offer! I make you—and all giving satisfaction! Isn't that proof enough?

Get My Catalog and Low Direct Prices

Write me before you buy any other style or make. Get my catalog and low direct price on the famous Galloway line of frost-proof, water cooled engines. Free Service Department at your disposal. My special 1914 offer will help you get an engine partly or wholly without cost to you. Write today. Do it now.

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To lift a load into a wagon 4 feet from the ground on old high wooden wheels is a foolish waste of labor when you can easily lower the wagon bed and LIFT ONLY 2 FEET. Why don't you stop wasting your labor? Lower your wagon bed 2 feet by equipping with low

Empire Steel Wheels

Far stronger than wooden wheels. Cannot rot or bow. NO BREAKDOWNS. No repair bills. Life savers for horses hauling over muddy roads and soft stubble fields. Satisfaction fully guaranteed or money back quick. Write today for 30-DAY NO RISK TRIAL OFFER.

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Greatest Cream Separator Offer

The Melotte—the wonderful Melotte—the great French-Belgian Separator—the prize winner all over Europe—now shipped anywhere in the U. S.—and on the most sweeping introductory offer. The best of all separators in Europe or America—yours on this Rock-Bottom free trial offer—all the same price you would pay in Belgium. Write for special offer today.

This is positively the first bona fide, no-money-down offer ever made on any cream separator. No manufacturer of any cream separator ever dared make such a startling proposition before. All others who have ever pretended to offer you a free trial or to send their separators without any money down have taken care to get something out of you first. But we don't want anything.

The Melotte, introduced only one year ago has swept the country. And now the duty is off—the superb Melotte comes in free—you get the full benefit.

Free Duty—Save \$15.25

The high tariff has been cut right off—the great Melotte comes in absolutely free of duty! You win! The American farmer can now get the world's best—the grand prize winner of all Europe—at a price \$15.25 lower than ever before. The Chicago price is the same price you would pay if you bought the machine in Belgium, plus \$1.75 for water freight.

You cannot compare any other separator to the Melotte—the latest and most improved design, construction and operation. The tariff and patent arrangements have kept it off the American market. Now it is here and to any responsible farmer on the most liberal offer ever made.

Absolutely guaranteed for 15 years.

Sent Without a Penny Down 30 Days Free Trial

Your simple word that you would like to see this wonderful imported cream separator in your own barn or dairy house brings it to you instantly. We neither ask nor want you to send us a penny. You set it up—give it a thorough test with the milk from your own cows—a free trial in every sense of the word—there is no C. O. D.—no lease or mortgage. If you decide to keep the genuine Melotte, you can keep it on easy

Monthly Payments

These monthly payments are so small that you will hardly notice them. You only pay out of your increased profits. You don't need to be without a cream separator when you can have the Melotte right in your dairy house while you are paying for it. In reality you do not pay for it at all—it pays for itself. We want to demonstrate and prove that the Melotte does pay for itself.

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