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## Giving the Boys a Broader Viewpoint

THIS is the story of the boy who ran away but afterwards came back. He came back home. He came to a realization of his best self.

He came back to new friends and interests and forces, quite unconsciously responding to their kindly treatment until the once discontented, rebellious, unhappy runaway was so awakened to the fascinating life on the farm about him that now it seems to him that "it requires a greater man to be a successful farmer than it does to be a workman at any other business in the world."

He did not run very far from home, but far enough so that his folks did not know where he was and sought the help of the association secretary. County Secretary F. P. Knapp found him in the same township, helping men to gravel a new road.

"Have you any better place to go than your own home?" he questioned him.

"No," answered the boy.

"Then you'd better go back home until you find something better."

So finally the boy did go back home.

Becoming interested in him, a rural Y. M. C. A. group of boys voted him to membership. For some months he enjoyed their program of Bible study, group games and educational work under the direction of a wholesome personality, meetings being held in the homes of various members. Then he entered the St. Joseph county corn growing contest. That year he won third place, which encouraged him to grow that crop a second season. His second exhibit scored higher than that of any boy in the county, impartial neighbors certifying that when he had cut, husked and weighed the yield from that quarter of an acre, there were 40 bushels in it—a yield of 160 bushels of shelled corn to the acre! Michigan's average for the past 10 years is less than 33 bushels.

Those ten ears exhibited in the boys' county contest also carried him to first place in the men's county contest that year, and scored above all others entered in the state show. That

is why "the boy who came back" writes with his own hand, "the main influence that has led me to look upon farming as my life work, I think, is the corn contests conducted by the St. Joseph County Committee of the Young Men's Christian Associations."

This oft told story of what the Rural Association has meant to one Michigan home is worth repeating because it is so typical of the plan and purpose, the underlying motives of that great and new "world wide movement for a new rural moral civilization" in which this state leads all others. With all of its crop contests, its play festivals in the open country as well as the small cities, towns and villages, its summer camps, county and state conferences attended by 5,000 boys last year, and its group of boys'

club work with four-fold, all-round program for mental, physical, social and religious development, none of these are conducted in and for themselves.

Believing that the formation of character is better than its reformation, the Rural Association seeks a task for every boy and man, and a man or boy for every task in its effort to help boys and to do a work with boys. For, as Fiske of Oberlin says, "There's as much difference between work with boys and work for boys as there is between a sponge bath and a bath sponge." But back of it all lies the insistent desire to train boys to leadership and to service.

A Chicago professor says that "the boy is the center of the world." In the eyes of his elders, in past years

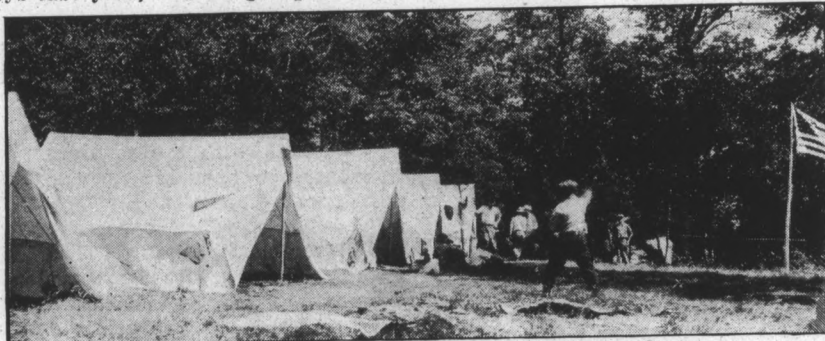
he has not been all of that. He ought to be. He is fast moving toward the center of thought and action, for they realize with this Chicago teacher that "if you want to get hold of the health of the future, begin with the boy. If you desire to conserve the culture, the democracy, the wealth and the religion of the future, conserve these in the boy. The making of heaven and earth as they are to be is in the hands of men who know how to work with boys." Theodore Roosevelt put it more compactly: "If you are going to do anything permanent for the average man, you have got to begin with the boy and not the man."

"The greatest need of country life today," says a student of it, "is not merely bigger crops and better methods, though these are good, but more than all else we need young men who can see the thing that needs to be done and who dare to step in and take the initiative."

Thinking of that, the Rural Association or County Work Department evolved the idea of a state conference camp at Torch Lake for boys from the open country, not with the idea of giving instruction in scientific agriculture. But during its first season, last year, and its approaching season, August 18 to 28, the effort was made and will be repeated, "to teach the possibilities and advantages of country life, to enlarge the vision of the farm boy, and to strengthen his faith in his power to succeed at home amid the environment he has known from early childhood."

The boys who enjoy fishing, swimming and boating on the shores of Torch Lake, sleeping in tents, baseball and hikes, nature study talks and camp fire stunts and entertainment will likewise enjoy Bible study adapted to their needs and inspirational addresses by Michigan's leaders in the forward movement in rural life. Boys who show qualities of leadership in rural life are being picked for this encampment.

Rural leadership is likewise being discovered, enlisted and trained by (Continued on page 48).



A "Street" in a Y. M. C. A. Boys' Recreation Camp.



One of the Games Enjoyed at a Play Festival.



A Group of Boys Taking a Lesson in Cattle Judging.



Corn School Conducted by a County Y. M. C. A. Committee.



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### CURRENT COMMENT.

#### Registering Grade Performers.

Members of two cow-testing associations have worked out a new idea, or given application to an old one as the case may be, for the establishment of a herd book for the registry of grade dairy cows coming up to a certain standard of performance. This idea has taken such a firm hold on the communities in which the Winona and Salem, O., cow-testing associations operate, that after consultation with officials of the Dairy Division of the U. S. Department of Agriculture and state dairy officials, a general meeting was called at Salem last week for a more thorough and comprehensive discussion of this project.

A very definite scale of points has been worked out from a theoretical standpoint, and the continued use of pure-bred sires of the same breed is made a requisite for admission of animals to registry. The idea is the outgrowth of the good work which has been done by these two cow-testing associations. Good as this work has been, it has been felt to fall short of desirable requirements in the matter of the classification of good grade cows and encouragement toward correct and better methods of breeding. The main object in view by the promoters of this proposition is apparently the promotion of straight line breeding for the upbuilding of high-grade dairy cattle of any breed, rather than the promiscuous crossing and re-crossing of blood lines which is so frequent in common practice at the present time.

The argument is advanced that only two per cent of the cow population is now registered, and that a considerable percentage of this contingent of pure-bred animals is composed of mediocre individuals not available for the improvement of the average quality of dairy cattle. Conceding that the rank and file of dairymen must depend upon grade cows for years to come, the establishment of a system by which high-producing grade cows would be taken as foundation stock upon an established record of breeding and production, with the use of good registered sires, should build permanently on this foundation for the benefit of the dairy business of the country. Under proper restrictions this plan would seem to have considerable merit.

At first thought some may be so shortsighted as to feel that it will be an encroachment upon and a detriment to the business of breeding pure-bred cattle. This, however, is a shortsighted view, since the general growth of an organization of this kind would very greatly increase the demand for pure-bred sires of quality of all dairy

breeds, while the work of breeding up grade dairy cattle to higher standards of production would inspire many dairymen to enter the field of producing pure-breds. This work would also be an incentive to breeders of pure-bred dairy cattle in general to continue the improvement of the special purpose dairy breeds in order to keep the standard of production as high as possible.

Any movement which will interest dairymen and live stock breeders of any class in the production of animals of better quality is a movement in the right direction, and one which should be welcomed by all who are interested in the live stock industry, provided that the work is established on a sound and scientific basis. The development resulting from the initiative of the members of these two cow-testing associations will at least be watched with interest by every Michigan dairyman.

#### The Unknown Quantity.

Mathematics is not the only science in which problems are worked out in which there are one or more unknown quantities. Agriculture has several points the lead of mathematics on this score. Farmers who have been trying to make hay and cultivate their growing crops during early July have been particularly harassed by one of these constantly present unknown quantities in every agricultural problem, i. e., the weather! And of all the varying unknown quantities entering into our agricultural problems, this eternal question mark, the weather, is perhaps the most perplexing and difficult to encounter. Yet it must be met, and the problem in hand must be solved successfully or otherwise, according to the ability and resourcefulness of the individual farmer. That it can be met in a manner to minimize loss is attested by thousands of examples.

An object lesson in point will be observed in a day's drive through the country by any thinking man. Corn fields will be seen in which much of the corn has been killed or stunted by te surplus water from excessive rains for the removal of which there is insufficient natural or artificial drainage, or, where the land is foul with weeds these may have literally choked out the growing corn plants. In a season of drought it is the same. The land which is in good physical condition and which is worked judiciously will respond in a surprising manner. In fact, the farmer who is a good business man and a good manager will so minimize the unknown quantities which must be coped with on every hand in the business of farming, that they will be merely handicaps rather than stumbling blocks in the road to success.

Some farmers have mastered this art so thoroughly that they have come to have a confidence in their ability to work with nature successfully, even when she is in an unkind mood. The writer of this comment once heard a farmer who belongs to this class make a remark which he has never forgotten. The remark had been passed that it was too bad that the severe drought which was then prevailing had not been broken, since it promised to be a hardship to so many farmers. The optimistic agriculturist replied that he rather liked dry weather because it didn't interfere with the work. This farmer had simply minimized an unknown quantity in his business by making every preparation for variable weather conditions, and refused to worry about the inevitable, secure in the feeling that if he continued to do his best a fairly satisfactory harvest would follow even an unfavorable seed time. And his feeling of security was the result of years of experience. Another farmer who has successfully minimized the unknown quantities in his business made the rather broad assertion in an article published in the Michigan Farmer a year or two ago,

that the successful farmer could "make Dame Nature come right up and eat out of his hand."

It is perhaps needless to state that these sentiments were expressed by forehanded farmers who did not need to worry over ordinary losses, and who had mastered the business of farming to a degree which gave them a comfortable feeling of independence even from the factor of unknown quantities in their business. It is, of course, quite a different proposition for the struggling young farmer who is handicapped in other ways, to meet and solve similar problems. But they are much more capable of solution than the average person realizes, if we will but minimize the unknown quantities, which are always factors in an intelligent and energetic manlyner—in other words, if we will cultivate efficiency in farm management with due regard to the conditions likely to be met.

During the comparatively brief history of its development, the United States has played an important part in the feeding of the rest of the world. As our population has increased, exports along many lines have proportionately decreased.

The publication of statistics for the last fiscal year show that the increased demand for foodstuffs caused by the European war has greatly stimulated our exports of foodstuffs during the past year. The figures showing the exports of foodstuffs for the eleven months of the last fiscal year ending June 1 show a total valuation of foodstuffs exported of 724,000,000, as compared with \$443,000,000 for the same period of the preceding year.

Of this total wheat formed the largest single item, the aggregate amount exported during the eleven months being 249,576,000 bushels, or an increase of approximately 164,000,000 bushels as compared with the previous year. The increase in value of wheat exported was proportionately larger, the total value of wheat exported during the eleven months being \$319,961,000, an increase over the same period of the previous year of \$239,138,000. Also nearly 5,000,000 more barrels of flour were exported during this period than for the same period last year, which the increased exportation of corn amounted to 35,000,000 bushels and the increased exportation of oats nearly 5,000,000 bushels.

With another harvest at hand these figures are significant. With large yields of the small grains again practically assured, there will be a strong speculative tendency to keep prices down until the bulk of the crop has been moved from first hands. With the war still in progress and no settlement in sight, growers should be conservative sellers on the early market, since there will undoubtedly be a continued demand for foodstuffs from Europe which will be supplied at favorable prices so long as it is possible to make shipments to satisfy them. While permanently increased prosperity may not be expected from this cause, yet undoubtedly the European war is stimulating an increased demand for foodstuffs, a considerable proportion of which will be supplied from the surplus products of the United States. It is therefore essential that growers should use judgment in the marketing of their products to the end that they, rather than the speculators who may purchase staple products in anticipation of the future demand, may reap such benefit as may accrue from this cause.

### HAPPENINGS OF THE WEEK.

#### Foreign.

The European War.—It appears that the Austrians and Germans have been checked in their drive on Russia. The Czar has organized a new army which is being flung against the enemy and reports state that German is

even taking forces intended for an offensive campaign in the west to assist in maintaining the ground won by the recent victories in Galicia. It was expected that new life would be put in to the western war campaign by the Germans following an aggressive movement of troops by the German crown prince in northern France, but the move seems to have failed and the French, on the other hand, after battling for the hill country between Bethune and Arras for 120 days have captured the hills overlooking the plains of Flanders. It is estimated that the German losses in this battle amount to 100,000 men. The remainder of the western front has been comparatively quiet. The Italians are adding to their victories over the Austrians, and late last week captured Mount Tofano, which make them masters of the road along Travenanzese valley. The Turks re-enforced their lines in the Dardanelles, however, the Allied forces are said to have made further advances on the Gallipoli peninsula. An agreement has been reached between Russia and Italy whereby prisoners of Italian nationality taken from the Austrian army will be sent back to Italy.

Germany's reply to the last United States note relative to the submarine warfare now being conducted by that country, does not appear to be altogether satisfactory to the American nation. Press comments have almost without exception criticized unfavorably the answer made by Germany, particularly as regards her apparent desire to evade the answering of direct questions touching the main issue of the controversy. President Wilson and his cabinet will confer this week on how the administration will meet the situation now confronted.

Gen. Carranza has captured Mexico City; this victory it is expected will improve his chances of being recognized by the United States government. The success also gives him control of the railroad leading from Vera Cruz to the capital city, affording a safe means of transportation to and fro. Large quantities of foodstuffs will be sent immediately to relieve the distressed population.

Thus far the Germans claim to have destroyed 136 air craft belonging to the enemy. Of these the French lost 57 and the British 47.

Dunrobin Castle, the Highland residence of the Duke of Sutherland, located near Dornach, Scotland, was partially destroyed by fire a short time ago. The castle dates back to 1097.

#### National.

Last week a sea tragedy was averted by the trans-Atlantic steamer Minnehaha making port at Halifax following the explosion of a bomb in one of her holds while enroute to England. Wireless messages had been sent the vessel warning its commander of such danger following the disclosures made by the would-be assassin of J. Pierpont Morgan. Further mysterious disclosures relative to bombs being placed on two more ships sailing from New Orleans were made Sunday and the naval department at Washington has flashed notification to these vessels of the reported presence of the explosives.

Prof. See, a noted astronomer and at present United States naval observer at Mare's Island, San Francisco harbor, declares he has discovered the cause of gravitation, which he asserts is governed by forces depending upon electricity in motion.

A fire on the battleship Alabama lying off the Philadelphia harbor threatened the magazines and created a considerable scare among 500 visitors on the boat at the time. The fire was subdued after much hard work. It is believed that a short circuit started the flame.

An organization has been perfected in Kent county looking toward the improving of the highway across the state from Detroit to Grand Haven. Meetings will be held at nearly all the important places along the road.

A lone highwayman robbed more than 100 tourists traveling in twelve coaches at Yellowstone Park last Friday.

On Thursday of this week a tablet bearing testimony to the achievement of Nicolet, who discovered the Straits of Mackinaw in 1634, will be unveiled at Mackinac Island.

James M. Sullivan, American Minister to the Dominican Republic has been asked to resign his post as the result of investigations conducted by the state department.

A petition has been presented to President Wilson urging an investigation of labor conditions in Porto Rico. The petition declares that workers are underpaid, that the police force of the island is used to oppress them and that 200,000 children of school age are without school accommodations.

Because of the belief that little permanent good can be done the Red Cross is considering a course of conservatism regarding the distribution of supplies to the Mexican people.



## Cabbage as a Cash Crop

**A**FTER fifteen years of experience in cabbage growing, farmers of the writer's locality are contracting, this season, something like 100 acres more than usual. In addition to this, the acreage of independent growers who do not contract, will be considerable. These facts show that the cabbage industry has become fixed, and can no longer be treated as an experimental or transitory part of general farming. Year after year, farmers put out a field or two to cabbage, with as much regularity as they plant corn or any other established crop. Other innovations in kind and variety of crops grown, have not stood the test, and in a year or two, have given way to the old stand-bys, but cabbage has come to stay.

In considering the factors which have entered into the success of the cabbage industry here, two well established points stand out. First, in order to make a success of cabbage growing, the soil must be in a high state of cultivation and fertilization. Land that will grow a fair crop of corn, will not necessarily produce a paying crop of cabbage. In the case of the corn, the whole crop is available, and even though the yield may not be large, something is realized. In the case of cabbage, a light crop represents almost a total failure. Cabbage is a cash crop. Heads that are under size, can not be marketed, and unless the soil is fertile most of the heads will fall far below the marketable size. The second point that has been demonstrated is that the grower must be reasonably near a kraut mill or shipping place. Hauling cabbage five or six miles or more cuts down the profits and makes the industry one of doubtful merit. For this reason cabbage growing is apt to be confined to narrow limits and restricted neighborhoods in close proximity to a mill or shipping point.

### A Popular Cash Crop.

In seeking an explanation of the popularity of the cabbage industry, of course its ability to pay out is the chief factor. The fact that cabbage is almost wholly a cash crop seems to have weight with many. During the history of the industry in this locality the contracting price has ranged from \$4 to \$5.50 per ton. In normal seasons the average yield is 10 to 12 tons per acre, with the heaviest pieces going 15 or even 18 tons. In the light of these facts the popularity of cabbage as a cash crop is readily seen.

In regard to the certainty of a profitable yield, cabbage seems to stand an equal chance with most other farm crops. With the soil suitable and the cultivation adequate, unfavorable weather conditions alone stand in the way of a profitable harvest. The pests which prey on the cabbage plant are the cabbage worm and the cabbage louse. In the case of the former, damage done in large fields is slight, and restricted to a row or two of plants around the outside of the patch. The worms are overwhelmed by the enormity of the thing, and get no farther than a very small start. Few growers pay any attention to this pest, the ravages of which are insignificant. In the case of the cabbage louse, its appearance seems to be the signal for a light yield, if not a total failure. It is only in time of protracted drought that this pest becomes prominent, and the dry weather and the louse together make the crop hardly worth harvesting.

### Important Considerations.

In considering the favorable factors in cabbage raising, the shortness of the time between setting the plants and harvesting the crop, should be mentioned. Most of the plants are set in June, and by the second week in November the money realized from the venture is in the pocket of the grower. The time of growing and har-

vesting the crop is shorter by a month than that required for the corn crop. The work of caring for the growing plant is about the same in the case of corn and cabbage.

In one important particular, the cabbage industry differs from the growing of most other farm products. The grower knows, as a rule, how much per ton he will get for the cabbage several months prior to the fitting of the ground for the setting of the plants. While doubtless this system has its advantages it also has its disadvantages. A proof of this was seen in the summer of 1913, when the drought and the cabbage louse cut the crop to one-fourth its normal size. Growers who had contracted the crop hauled the scanty yield to the local kraut mill for \$4 and \$5 per ton, while independent growers received \$15 per ton at the same mill. Naturally, such an experience had a tendency to give a black eye to the practice of contracting. However, kraut makers claim that this method is absolutely essential to their business, as they must provide as far as possible, for the filling of orders taken months ahead.

### An Opportunity for Co operation.

In discussing this phase of the industry, the question of co-operation comes to the front. It would seem in the very nature of the case, that co-operation among cabbage growers would meet with satisfactory results. In the rise and spread of the co-operative movement in this section, the establishment of co-operative kraut mills has been talked about, but so far the step has not been taken. It seems probable, however, that this, like other good things, will come about in the not very distant future.

Hillsdale Co. J. A. KAISER.

### FARMERS SHOULD SAVE THEIR OWN HAIRY VETCH.

The greater part of the hairy vetch seed, used in the United States, has been imported from Russia and Germany, the annual importations increasing from less than 100,000 pounds in 1906 to over 2,000,000 pounds in 1914. On account of the conditions resulting from the European war only 179,000 pounds of seed were imported between November 1, 1914, and May 15, 1915, and there seems to be little prospect of more coming in before seeding time this fall. This will result in only a small proportion of the normal supply of hairy vetch seed being available for this year's sowing. While the domestic production of hairy vetch seed has increased for a number of years it has not increased in proportion to the demand, and the price of the seed has constantly advanced as its use has become more general.

Farmers who have hairy vetch growing are urged by the specialists of the United States Department of Agriculture to save their own supply of seed this year so they may be able to continue the use of this valuable crop. It is not to be expected, however, that prices higher than those of last year will be obtained, as the high price of the seed under normal conditions in recent years has been the chief factor in limiting the use of hairy vetch in the past.

In harvesting the seed crop it should be cut with a mowing machine when the oldest pods are fully ripe. The wheels of the mower as well as the horses must not be allowed to pass over the cut vetch as otherwise much of the seed will be shattered out. As the pods break open readily when dry. The greatest care should be taken in curing and handling to avoid loss of seed. It can be threshed with an ordinary grain thresher by lowering the concaves sufficiently to avoid cracking the seed. Yields of from three to ten bushels per acre of hairy

vetch seed may be expected in addition to the rye or other grain with which it is grown. A complete separation of the hairy vetch seed, from rye or wheat, is best made by use of a spiral separating machine known in Europe as "Schnectentrieur," which is now manufactured for sale in this country. For local seeding, however, a complete separation is not necessary, and the desired proportions of vetch and rye or wheat can be obtained by the use of an ordinary fanning mill.

### HARVESTING VETCH FOR SEED.

In reply to the inquiry relating to the harvesting of vetch seed which was published in your last issue, to which my attention has been called, will say that the common method of cutting vetch for seed is to cut it when the ripest pods on the plants are ripe enough so that they shatter more or less.

As you know, a vetch plant will have pods that are over-ripe, pods that are ripe enough so that they will hold their seed when the plant is being harvested, and other pods that will be just forming. The exact time to cut vetch is a matter of judgment. There is, generally, a considerable waste of seed from shattering. I know of no way to prevent it. We have had considerable difficulty in this direction in hot, dry years.

When the plants are considered to be at the proper stage of maturity for profitable cutting, the common plan is to cut around the piece with a mower and then for men to go along with forks and pull this swath away from the uncut vetch and rye, leaving a clear space for the machine and the horses to go over when the next bout is made, and when another swath is cut to move that over also, and so on.

Of course, this is a slow process, but it is the best way that we know now. If the vetch crop is heavy, the use of a binder is out of the question. It may be that some day somebody will invent a machine for harvesting vetch that will beat the rather slow and clumsy method we are now compelled to use. I hope so.

We have been unable here to cut vetch seed without more or less waste. It sometimes amounts to two or three bushels to the acre where the crop is heavy. I may say that after the crop is cut, the common plan has been to cock up the vetch and rye and after it has cured a few days to put it through a threshing machine. We have never had any trouble as yet with the seed spoiling in the field, nor do I think it would spoil if the bunches were turned over once or twice after it has been rained on.

Kalamazoo Co. JASON WOODMAN.

### THE WEATHER AND THE WORK.

We are having considerable rain at the present time, July 7, but if we listen to the teachings will learn an important lesson.

To the hay-maker it may be a little disastrous, but in many other ways the advantages will much more than offset the disadvantages to the hay crop. These advantages will be found in the improvement of the pastures, and in the growth of other crops. To the man on heavy clay land, it teaches this necessary lesson, that tile drainage must no longer be dispensed with, if he wishes to reap the full results of his labor, or to be in position to utilize the water that falls instead of being at its mercy.

Cultivation must not cease. It will be the salvation of the growing crops. Keep the cultivator going, should be the slogan. It matters not if you have just gone over your corn ground, or your potato ground, and there is not a weed in the entire field, immediately after the rain is over, or as soon as you can possibly get on the ground, get busy with the full working force

of the farm and go over it again. Do not wait for the land to dry out, for, if you do, the land will bake, crust over, and besides you will lose tons and tons of good water that should be bottled up in the ground for the crop's future use. Other business may be pressing, but this item of cultivation cannot be neglected.

Cultivation warms the soil. It gives a chance for aeration, and without aeration and warmth the soil bacteria cannot work, and the inert and potential plant food cannot be worked into serviceable condition for plant use.

Let your land become water-soaked, or crusted over, either one, it can admit no air, therefore the soil bacteria cannot do its work and the whole process of plant growth must cease because of starvation.

These rains are beneficial in many ways, but keep in the ground the water that falls on the ground, and not waste it by evaporation. Also give the air a chance for circulation in your soil. The man who deplores the rainy weather is the man who loses sight of an important teaching.

Kent Co. RAY SESSIONS.

### FARM NOTES.

#### Cultivating Beans when the Dew is on.

How, and to what extent do beans suffer from being cultivated when the dew is on, or in other words, is it advisable to cultivate beans when the dew is on? Do beans suffer anything from having a small quantity of soil thrown on the leaves during the first cultivation? Beans pull nicer if they have been hilled slightly during the last cultivation, and I am wondering if the beans suffer anything from being hilled slightly during the last cultivation. If drouth and weed conditions demand it, would it be advisable to cultivate beans in spite of the fact that the beans had commenced to bud? What is the cause and remedy for bean blight?

Isabella Co. J. L. C.

Beans undoubtedly suffer some damage from cultivating when the leaves are wet with dew, for the reason that there are generally present in Michigan bean fields one or both of the two serious bean diseases, anthracnose and bacterial blight. Cultivating when the leaves are wet with dew tends to spread the spores of these diseases under conditions which favor their getting a foothold on uninfected plants hence the common idea that cultivating when the dew is on causes rusting or blighting of the vines. This is the writer's opinion, is the only good foundation for this general opinion.

Level cultivation is considered better for beans, but except in extreme weather conditions a slight hilling at the last cultivation will do no particular harm. By the time the beans are in bloom they have attained sufficient growth so that cultivation should be unnecessary if the ground has been well fitted and early cultivations have been sufficiently thorough to keep down the weeds. It is, of course, sometimes impossible to do this, and it is entirely a matter of judgment, depending altogether upon conditions whether late cultivation should or should not be practiced.

Bean blight is a bacterial disease for which no remedy has been discovered except the planting of clean seed upon uninfected soil.

"Try-a-bag" of fertilizer. Our brands are soluble and active, and not only increase yield, but improve quality and hasten maturity. Agents wanted. Address American Agricultural Chemical Co., Cleveland, Cincinnati, Detroit or Baltimore.—Adv.

### THE FARMER'S ASSISTANT.

I wish to thank you for what the Michigan Farmer has done for me. I have read it since the day when I was working as a farm hand at \$10 per month and believe it has had a great deal to do with the fact that I am not working as a farm hand now. Wishing you many more years of success as the farm paper of Michigan.—F. M. Ellmost.





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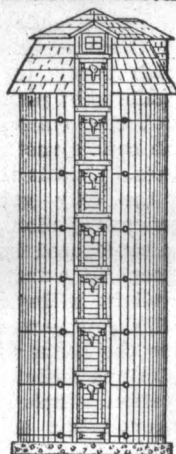


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# The Value of Ancestral Influences

**N**OTWITHSTANDING the great progress which has been made in the last one hundred years in improving our live stock, grains and vegetables, there are but few outside of the professional breeders who fully comprehend the value of ancestral influences. In fact, it is the foundation and basis on which the skillful breeder operates. The individual who does not fully comprehend the value of ancestral influences will make but little progress if he undertakes to make improvements in stock, grains or vegetables.

Although many examples illustrate what has been accomplished in the last century, a great many supposedly learned men seem to ignore the necessities for studying and relying on what has been accomplished in the past. It was only a short time since that I had the privilege of listening to a brilliant young minister on the subject of cultivating the habit of forming correct habits. He contended that we, as members of the human family, are but the result of what our habits make us. He stated that all progress we make, have made, or are likely to make, comes from forming the habits of doing things in a certain manner. In other words, he contended that environment is what makes the civilized man what he is. Had the individual given due thought to the study of anthropology, the science of man, or ethnology, the science of the races, he would have arrived at a different conclusion. The race of men known as Jews are an example of ancestral influences, carrying the characteristics of the race which has been a leading feature for 4,000 years or more. It is well known that Abraham and his grandson, Jacob, were capable of manipulating affairs and making deals which would bring large amounts of wealth into their possession. That characteristic of the accumulation of wealth has become so prominent in the Jewish race that it is taken as a matter of course that a Jew is simply a money gatherer.

### Mankind, an Example.

Looking at the races of mankind as we find them today, from the lowest to the highest, it will be noted that those that have not been bred up for generations to a high standard of excellence have not increased in capabilities. Take, for instance, the Dakotas of Abyssinia. They do not know or have not advanced in a manner to adopt any means which lead to civilization. They do not know the benefits that can be derived by the use of fire, neither do they conform to any rite or ceremony, not even marriage or the conjugal relation in any way. They are simply children of the forest, living in all the freedom that can be given them under primitive conditions.

Another race of men which have been brought in contact with the civilized races to a limited extent have developed in a limited degree. A student of human nature told the writer that she had spent a considerable time in Australia studying the characteristics of the native Australian, and that there were but few exceptions among those people where they possessed any farther than a child mind, and are not capable of mastering mentally anything beyond the capabilities of the white child of ten years of age. In fact, she stated that it was with difficulty that those people were taught to count numbers above five or six. She also stated that in order to make them fairly civilized individuals that it would require many, many generations of contact with civilized people and with training under the hands of skillful trainers to make them respectable and fairly accountable individuals even if brought in contact with the bright minds of the civilized nations of the world.

This shows that the law of ancestral influences applies to men as well as to the lower order of creation, and it is worth the while for those who are students of human nature, who devote their time to the elevation of humanity, to give as much attention to the ancestral influences, or laws of heredity and environment, as to the improvements of live stock, grains and vegetables.

### Improvement of Grain.

Since the dawn of civilization the matter of selection and breeding of our grains has attracted the attention of the wisest and of the political economists, as well as the agriculturists. Fully realizing that there are variations in the production of the grains and vegetables, they have wisely selected the best specimens, casting off the inferior ones, and using only as seed those that carry the desirable characteristics. By following this plan for many generations a type or breed of grains has been fixed, and we have as the result of the wise application of the rule of our ancestors our excellent varieties of grains. They are a blessing to humanity at the present time, for if surrounded with favorable conditions they yield abundantly of their kind, furnishing a large amount of food in return for a small outlay of labor.

It is not generally understood that our grains, like wheat, rye, barley, oats, speltz, and those classes of grain, are lineal descendants of a degenerate descendant of the lily family. In referring to their ancestors we usually simply say that they were evolved from some of the ancient grasses. The facts in regard to their very ancient ancestry were not known until the science of palaeontology was established and men were able to trace the history of these ancient forms on the rock-ribbed surface of the earth.

### The Breeds of Animals.

Most of the modern agriculturists and live stock growers are familiar with the progress made in the developing of the many very excellent breeds of horses, cattle, sheep, swine and poultry. Within the recollection of men who have lived but the ordinary allotment of man, very many breeds have been developed and brought forth carrying excellent qualities far superior to those found in countries where the native varieties of stock of the kind were once prevalent.

The great progress has been made by the application of good judgment of the breeders in their painstaking selections in breeding from the best of the varieties selected for operation. Had it not been for the labors of these benefactors, the possibilities for the production of a large amount of meat for a small outlay of feed, we would not be blessed with the opportunities of growing and utilizing our live stock in a way that would enable us to feed the teeming millions who are looking toward the farmers for their living.

### Some Object Lessons.

We will notice only a few of the breeds which stand out as examples of what has been accomplished by relying on the binding and potent influences of not only the immediate, but remote ancestors. Take, for instance, the breed of "Holstein" cattle. It was less than a half century ago that that breed was recognized as having desirable characteristics worthy of developing for the use of dairymen of this country. They were a large, coarse, bony class of cattle that were capable of subsisting on coarse feed, and at the same time giving in return a liberal amount of milk which was of an inferior quality. In fact, it did not carry a sufficient percentage of what we now term butter-fat to enable the breed to challenge the admiration and adoption by the average dairyman, but by constant effort in selection the breeders have so changed the characteristics of that breed that they have

refined them in form, built them in shape to meet their tastes and desires as to conformation, and have by selection so improved the capabilities of enriching their milk, that they stand at the present time as the greatest breed of dairy cattle for the farmer who desires a class of cattle that will yield a large amount of milk in return for the quality of forage usually produced on the farm, and at the same time return a large amount of milk rich enough in quality to meet the demands of the city consumers.

Take another example of the benefits of ancestral influences as portrayed in the two breeds of cattle, the Jersey and Guernsey cattle. For a long period of years those breeds were confined to the limited area of the islands which bear their names and reared as pets of the people who were the inhabitants of those islands. Among their first characteristics was that of the production of milk very rich in quality, although yielded in small quantities. By the skill of the breeders during the last half century those breeds have been developed in a way which enables those animals to not only yield milk that is rich in quality, but yielded in large quantities. Instead of hearing of Jersey or Guernsey champions that yield 10,000 pounds of milk in a year and from 600 to 800 pounds of butter, the modern champions have reached nearly, if not quite, double the amount of milk and have passed the 1,000 pound mark a long time ago in the production of butter. In fact, those animals are looked upon at the present time as the most economical milk and butter machines that have been developed of the cattle kind.

### Give the Principle a Broad Application.

The example of the beneficial influences of heredity considered in its proper light could be multiplied far beyond the space allotted to one article, but it is not necessary. Readers and thinkers have the facts in mind, so let us when we are aiming to improve our live stock, grains, or vegetables, keep in mind the fact that in order to secure the desired results we must give due attention to the characteristics of the immediate and remote ancestry of the animals or grains under our supervision and control. It has been by the study of these rules that our live stock of all kinds have been improved, breeds have been made and many of the blessings which we enjoy in regard to the improved live stock, improved grains and vegetables, have been attained, and while we appreciate the worth of live stock and grain improvement, let us not forget that humanity is not an exception to these great laws, and as much as we may desire improvement of the lower order of creation, humanity is deserving of some attention. Let us get rid of the savage in man which leads to cruel wars, selfishness, which is but the father of greed, and cultivate a spirit of tolerance, kindness and solicitation for the uplift of those with whom we come in contact. Let us strive for a better class of people, who will be better able and capable of enjoying the blessings that we now enjoy and those that are likely to come in the future.

Wayne Co.

N. A. CLAPP.

A Kentucky sheep breeding establishment netted 17 per cent on invested capital last year, after making liberal allowances for depreciation for rent of land and labor. The great boom in prices for lambs and sheep this year caused by the extraordinary scarcity everywhere is causing a lively demand for well-bred ewes and rams for breeding purposes, and this is the case all over the east, as well as in the Mississippi Valley.

Advices from the Missouri river markets are that there is a lively demand for feeder steers, and buyers have been paying as high as \$8 to \$8.50 per 100 pounds, encouraged by the reduced number of cattle in pastures.



## The Basis of Milk Values

**A**RE we not over-emphasizing the value of the fat content in milk and too largely disregarding the importance of the other food constituents? In estimating the value of feeds for stock the amount of protein and carbohydrates is taken as the basis of values and the small amount of fat is hardly mentioned, but with milk the fat alone is about all that is considered worth reckoning. Yet milk is as nicely balanced with all of the food elements as any combination of grains that we can mix, and the fat is about as small in proportion to the others as it is in the grains and forages we feed to the stock or in the foods we set on our tables.

### Fat Chief Factor in Butter Only.

The whole milk entering into human consumption is of large proportions in the city milk trade, in the condensaries, in cheese-making the whole milk is used, and only in butter-making is the fat the chief factor. And in butter-making the separated milk—the food elements of the milk with practically only the fat taken out—is of high value for feeding. The dairyman who disposes of his whole milk finds great difficulty in finding anything on which his calves will thrive, but calves will do very nicely on separated milk with a little flaxseed or some form of calf feed added to replace the fat.

But in practice the fat content of milk is taken as the only element in estimating the value of milk. In cities, condensaries or cheese factories where the whole milk is used, as well as in butter-making, the Babcock test is the only standard. This may be all right as a means of determining whether or not water has been added, but as a means of measuring the true value of milk is it not faulty? Why should the protein and carbohydrates be of less corresponding value in milk, as compared with the value of the fat, than in the concentrates we feed our stock or in the other foods we set on our tables?

### Percentage of Butter-fat Changes.

The fat is not an invariable factor in determining the value of milk any more than it is in corn or bran—perhaps not so much so, as it is more variable in milk, as analyses seem to show. Not long ago I had occasion to test the milk from two young Jersey cows. One gave milk with considerably more cream than the other, and the owner thought the milk was richer, but the test showed that the milk from the cow yielding the larger amount of cream tested 5.2, while that from the other tested 6.2. In other words, there was apparently a large variation in the solids other than fat given by these two cows. One of the mysteries of the cream separator is that the fat in the cream varies while the separator has been set and operated without change. With different cows, and with the same cow from day to day, it is known that the fat in the milk varies, and while I am not aware as any analyses of the other contents of the milk have been published, yet it is fair to presume that these differ as well as the fat. At any rate it is fairly evident that the fat does not constitute a fair basis for estimating the other food constituents of the milk, and if we are correct in estimating the value of other foods and feeds by the amount of these solids they contain it is apparent that the fat does not constitute a fair basis for estimating the value of all milks.

### The Solids in Milk Valuable.

This is a matter of greater moment to all milk producers than might appear. A writer in Michigan to a farm paper recently complained that the condensary which started a while ago in his vicinity at first said that the fat in the milk was a small consideration and urged the use of Holsteins as milk producers because they produc-

ed a larger proportion of the other solids, which was what they wanted in condensed milk; but laterally they have come down to a fat basis in estimating values. They are enabled to do this because the fat content is so universally accepted as the basis, and a large concern like this has a large influence in depressing milk prices generally. If we applied the same tests in estimating milk values that we do in appraising other things that we eat and that we feed to stock there would not be this opportunity of setting up such a standard. And if the other solids, the proteins and carbohydrates, are a correct basis for establishing other food values why are they not in milk as well? It may not be so convenient for condensaries and cheese factories to determine the amount of these contained in milk as it is to make the test for fat, but this should not outweigh the matter of justice.

EDW. HUTCHINS.

### HINTS ON FARM BUTTER-MAKING.

Cool the cream from the separator as soon as possible to 55 degrees F. or lower.

Never mix warm cream with cool cream.

Mix all the cream to be churned in one vat or can at least 18 hours before churning.

Ripen at a temperature of 70 to 75 degrees F. for from six to eight hours, stirring frequently during this period.

Cool cream to churning temperature as soon as ripe.

Let the cream stand eight hours or more (over night) at the churning temperature.

The temperature of churning should be such as to make the butter come in from 35 to 40 minutes, usually 55 to 60 degrees F.

If it is desired to use artificial coloring, it should be added to the cream just before churning.

Stop churning when the granules are about the size of peas, varying to wheat, and draw off the buttermilk.

Wash the butter once with pure water at the churning temperature, agitating three or four times, and drain.

Wash a second time with water about four degrees above churning temperature, agitating seven or eight times, and drain.

Add the salt wet while the butter is in granular form, using about one to one and one-half ounces for each pound of butter, according to the demands of the market.

Work the butter just enough to distribute the salt evenly.

If the butter is to go on the market it should be put up in neat, attractive packages.

### TO IMPROVE LIVE STOCK.

Two Holstein Friesian Cattle Associations were formed in Wexford county last week, one at Manton on June 25 and at Buckley on June 26. The object of such associations is to improve the live stock in this district and much interest is shown in community breeding.

The association formed at Manton is to be called the Northern District Holstein Association and the following officers have been elected: President, Thomas Alexander, Cadillac; vice-president, James Wright, Lake City; secretary, Robt. Runchey, Manton; treasurer, George M. Brooks, Manton. At this meeting the constitution committee will report and the groups will be formed. Fifty-four men were out at this first meeting.

The officers of the Buckley Association are as follows: President, L. C. Cornell, Sherman; vice-president, Harvey Melvin, Wexford; secretary, G. A. Brigham, Buckley; treasurer, Edward Cornell, Sherman. The next meeting will be held on Thursday, July 5, at 8:00 p. m.

Livingston county, Michigan, has the best Live Stock Association in this state and it is one of the richest counties and it is hoped to bring this district to the front in this way.

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the season a

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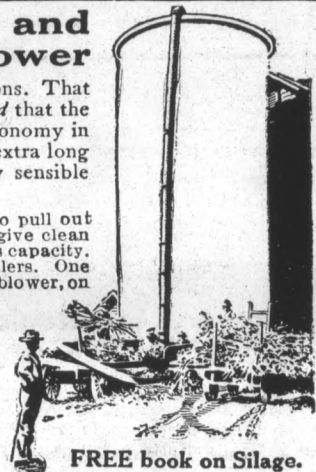
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# POTASH for WHEAT

Many farmers are anxiously inquiring whether they can secure any Potash in their wheat fertilizer this Fall. From the best information obtainable, it appears that while Potash exports from Germany were entirely stopped last January, there is still some Potash in the country that will be used in the wheat fertilizers. The amount is very much less than usual. Hence those who wish to secure fertilizers containing it, must be alert and place their orders early. Those manufacturers who have it in stock will doubtless make it go as far as possible and the percentage in wheat fertilizers must be lower than in former years. The price per unit will doubtless be higher, but not so high as to make it unprofitable, especially where clover or hay is to follow the wheat.

Inability to secure the usual wheat fertilizers containing from 2 to 6 per cent of Potash should not lead farmers to decide not to use any fertilizer.

The reduction in the sales of cotton fertilizer has left more Potash available for wheat fertilizer than we could have hoped for a few months ago and minor sources of supply have been fully utilized.

There is no substitute for Potash. It is very scarce just now, but **POTASH PAYS.**

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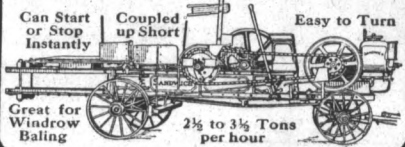
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## Ginseng, Its Possibilities and Probabilities

(Continued from last week).

THESE figures are wrong from several points of view. We started with the very best product, and assumed that every plant was to be just as good. All the superiority of this plant was multiplied over and over again. Not only is ginseng a marvelous crop when figured this way, but beans or corn, or anything else can be made a bonanza, if you will start with the best and highest yielding plant and compute what an acre would be worth. Having hinted at the unsoundness of the returns which are computed for ginseng, let us see what other factors are at work, paring these fabulous figures. Probably nothing cuts the ginseng yield so much as blank spaces in the bed. When the plants are in full leaf, they make a brave show, but the spaces between are deceiving. One never sees five-year-old ginseng regularly spaced six inches apart, and if in making an average, the great bare spaces are deducted, it is found that ginseng is spaced a great deal more than a foot each way. Furthermore, in our first figures, we took no account of the paths, and these will occupy at least one-fifth of the acreage under cover.

### Some Probable Disappointments.

Although actual figures for large areas do not exist, and figures as to profits from small gardens are not obtainable, it is, however, much more within the realms of fact and less in the realms of fancy, to put the average returns of ginseng at one-fourth to one-fifth of the figures given, and this probably is only true for the smaller gardens.

It must be further remembered that these figures are based on the total returns for five years, and that a great many things may cause the crop to fail to give any return whatsoever.

Probably the most important in causing this failure are the diseases of ginseng. As would be expected with a crop grown so intensively, and a crop where the part to be harvested has to remain in the soil for at least five years before it is ready for market, the exposure to disease germs is great, and the conditions trying. The Bureau of Plant Industry has issued a bulletin on ginseng diseases, and last year five pathologists devoted their time to the study of the control of these pests. The growers themselves have had to become experts in ginseng maladies, and they discuss the diseases at their meetings, calling the germs by their Latin names, as well as retailing their life histories. These growers have learned to expect damping off and root rots. They are waging a more or less successful fight against these two forms of trouble. A most serious menace to the industry arose a few years ago, when alternating blight swept over the gardens. Fortunately the Cornell Experiment Station was able to devise successful control measures for this disease, and now every progressive grower wages a winning fight against this trouble. But the fight never lessens, and year after year the garden must be sprayed to save the crop.

### Some Pests.

Then there are animal pests, insects that chew and suck, moles that burrow in the beds. As would be expected with so valuable a crop, another animal pest is the thief, who breaks in at night and steals. Ginseng beds have to be securely hidden in deep woods to evade the thief, or if the garden is in the town, it must be close to the house, heavily fenced and carefully watched, if it is to be at all safe. A stout and awry thief can carry away in a sack the crop that five years has produced.

Another, but perhaps not a true factor, in cutting down the actual returns from the ginseng garden is the ever-increasing demand for expansion. The

grower starts with a small lot, perhaps with space enough for one small bed. Soon seed begins to ripen on the few old plants he has set out, and he lays out another bed. Next year, more seed, and he expands again. Then he begins to plan to put up more shade with the money he gets for his first five-year-old bed, and so it goes. He has thousands of seeds ripening each year; he has any number of thrifty one and two-year-old roots which he feels he ought to plant. He spends his returns putting up more shading and more stout fence and drainage schemes, in spray outfits, in burglar alarms, always expanding, always rich in potentialities, yet often without the cash.

### The Uncertainty of Ginseng Growing.

Such, then, is the ginseng game. Ginseng is a high-priced plant, a valuable plant, and a plant yielding large returns, considering its intensive nature; involving much labor and much expense at the start, returns come only after five years; hence the returns which do come are surely earned. It is a crop with ever increasing demands for room—a demand so insistent that the grower invariably reinvests his proceeds. The market is, as yet, wholly abroad, and many believe the future of the ginseng trade uncertain.

Since the boom times many men have started ginseng growing. By far the larger per cent has failed. To grow ginseng successfully requires more gray matter than to grow a crop of corn. It is, however, to those who can specialize, correspondingly more profitable. I would not discourage anyone from starting in the ginseng business. I believe money can be made by the ginseng expert; but the beginner must be fully aware that he is taking up a man-size proposition and one which will require close attention and study. Furthermore, I believe it only fair that the possibilities which are so very attractive to one who wants to start the business, be properly balanced with the probabilities. The Farmers' Bulletin referred to urges great conservatism with reference to this crop, and the writer can only add the advice, do not go into ginseng growing with more than you can afford to lose.

G. H. COONS.

### FOR ONION MAGGOT.

Seeing an inquiry from J. F. F., of Indiana, for a remedy for onion maggot and your answer that there was no remedy, I wish as a subscriber's wife to tell you of a remedy I have found to be very successful. That is to work well into the soil at the time of planting a quantity of salt along each row if, after they are planted, they begin to work in the onions scatter it over the top of the ground till it looks like a light fall of snow, just before a rain, if possible, but if the maggots are bothering badly do not wait for rain. This also works well for radishes when they are bothered with worms. I have tried this several times, so I speak from experience.

SUBSCRIBER'S WIFE.

While salt may have some effect on the maggot, it is detrimental to plant growth. While no injury may be noticed on the present crop, succeeding crops would suffer from it and the continued use of it on the same piece of ground would show marked results. Salt prevents the normal growth of plants in nearly all cases, the chlorine in the salt having the detrimental effect.—Eds.

### CATALOG NOTICE.

Dupont hand trap, a practical device for throwing clay targets for the pleasure and instruction of those desiring to become proficient shooters in the field and at the traps, are fully illustrated and described in an art catalog sent upon request by the Dupont Powder Co., Wilmington, Del.



# 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.

**N**O exploit surpasses in cool daring that of Lieut. William Barker Cushing of Delafield in Waukesha county, Wisconsin, who, half a century ago, blew up in the Roanoke river the Confederate ram Albermarle.

The Albermarle was one of the Confederate iron-clads built in the style of the Merrimac, with which the Confederates hoped to destroy the Union fleet blockading their coast, and open up their ports to the commerce of the world. In April, 1864, she attacked and captured the town of Plymouth near the head of Albermarle sound, having beaten off the entire Union fleet and sunk one of its best vessels. A month later she again challenged and defeated single-handed a fleet of seven wooden vessels, sinking one of them that tried ineffectually to ram her beneath the water line. Unless by some means she could be destroyed,

## Lieutenant Cushing's Heroic Deed

By FREDERICK MERK

ed, she would render ineffective the blockade of the Confederate coast upon which the north depended so much.

In this dilemma Lieutenant Cushing came forward with a characteristic plan. He had already acquired in the navy a name for reckless daring, his dare-devil feats having won him even before the age of twenty-one the command of a vessel of his own. He now proposed to secure from New York two small steam launches with the necessary torpedo arrangements, to convey these secretly along the coast to Albermarle sound, and on some favorable night steal up to the iron-clad and blow her up.

Admiral Lee, to whom Cushing

broached his plan, was willing that the attempt should be made, but the assistant secretary of the navy, who had to be consulted, hesitated long and doubtfully before he gave his consent. The venture seemed almost hopeless. The ram was eight miles up the river, and it seemed almost certain that any attacking party would be discovered by the watchful pickets who lined the shore. Moreover, the Confederates, anticipating just such a plan as Cushing was proposing, had prepared for it by surrounding their vessel with a boom of logs chained together so as to hold off any approaching craft.

Cushing's plan seemed the only one

possible, however, for destroying the dreaded enemy, and he was given reluctant permission to attempt its execution. He proceeded at once to secure his launches, one of which he succeeded in bringing to the sound. On October 27, 1864, all was ready for the desperate venture. The fourteen men selected to go with Cushing were warned that death would almost certainly be their fate even if they were successful, and were given an opportunity to withdraw from the enterprise, but all were eager for the action. Indeed a number of adventurous spirits offered a month's pay to their more fortunate shipmates if they would exchange places, but without avail.

On the appointed night when darkness had thrown a friendly mantle over his operations, Cushing started out. Silently the frail craft stole up the

## WORLD EVENTS IN PICTURES



Russians in Trenches Opposing Austro-German Advance.



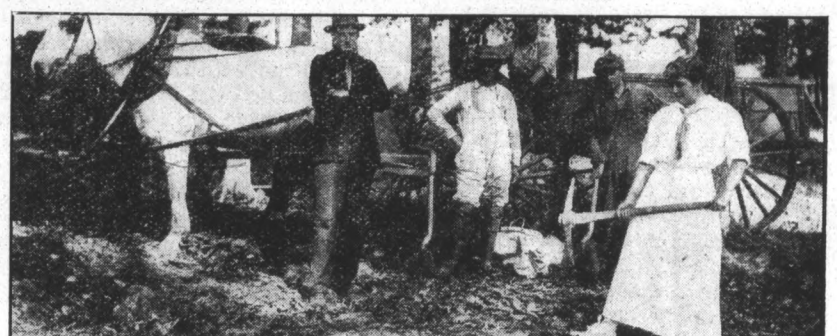
Miss Wanamaker Becomes Bride of Gurnee Munn.



U. S. Flagship Wyoming on Way to Summer Manoeuvres.



Yale Boat Crew Defeats Harvard's Crew by Seven Lengths.



Madam Fremstad, Prima Donna, Breaks Ground for Home in Maine Woods.



French Military Autos are Equipped with Steel Rails which Cut through Barbwire Entanglements.



Chinese Minister of Foreign Affairs and Japanese Minister Signing Treaty, which Averted a Chino-Japanese War.



river, passing in safety a number of schooners stationed near its mouth, and arriving without detection within twenty yards of the black hulk of the ram. A shout from a watchful lookout and the flaring blaze of a beacon light now warned the Union men that they were discovered. With full steam ahead they raced forward, struck and breast-ed the protecting boom of logs, and amid a perfect storm of shot approached their victim. Three bullets burned through Cushing's clothes, and a great hole was rent in his coat, yet with imperturbable coolness and nicety of judgment he adjusted to the ram's side the delicate machinery of his torpedo, and discharged it. A dense mass of water surged into the air, overwhelming Cushing's little vessel but indicating that the torpedo had done its appointed work. The men were ordered to save themselves, while Cushing plunged into the water, and under cover of darkness made for the shore.

Eleven of Cushing's men were saved by a launch that their chivalrous foe sent out for them. Cushing himself was determined not to be captured. Boldly he struck out through the cold, choppy water made progress difficult, and fatigue was already numbing his arms and legs. On his way he met one of his comrades struggling feebly in the water and assisted him as best he could, but the poor fellow was beyond saving, and before long sank out of sight. Cushing, too, was soon utterly exhausted, and could keep up only a sort of mechanical motion. Not a moment too soon he reached the shore and fell dazed and almost unconscious in the soft mud. Unable to move he remained where he fell half in mud and half in water until almost daylight. Danger of discovery, however, brought strength once more to his limbs, and he managed to crawl into a nearby swamp. Two of the Alberman's officers passed within a few feet of where he lay, and from their conversation he learned that the ram had sunk with a great hole in her side to the bottom of the river.

Rejoicing over this good news he summoned up his strength once more, and toiled on during the day to a point well below the scene of his exploit. Happily he found hidden away in the swamp a skiff belonging to one of the pickets of the enemy, and in this, when night had again covered his movements with friendly darkness, he made his way to the mouth of the river and thence to the protection of the fleet.

He had been paddling continuously for ten hours, and had had no rest since the night when he started from the fleet. When he reached the side of the picket vessel, Valley City, he had only strength enough to hail it, and then collapsed in the bottom of his boat. The Valley City, upon hearing his "ship-ahoy," hurriedly backed away, convinced that it was threatened with a hostile torpedo. No one dreamed that it might be the intrepid Cushing calling. His comrades believed beyond a doubt that he was lying dead at the bottom of the Roanoke river. When it was learned that the hero was in truth safe, astonishment and joy were equally mingled. Rockets were sent up from every ship in the sound, and cheer after cheer rent the air.

Plymouth, deprived of its protection, soon fell into Union hands. The fleet, it may be added, was never again troubled by Confederate rams. Lieut. Cushing for his daring exploit was loaded with honors. He received the public congratulations of the Navy Department, was given a vote of thanks by Congress upon the written recommendation of President Lincoln, and was promoted to the rank of Lieutenant-commander. Thus this youth of Delafield, Wisconsin, at the age of but twenty-two rendered invaluable service to his country, and brought honor to his state.

## GIVING THE BOYS A BROADER VIEWPOINT.

(Continued from first page.)

County Work of the Young Men's Christian Associations of Michigan for a new play life for the open country, which is needed badly and which must come. "The Y. M. C. A. has taught us," says Fiske, "that these social and physical things are essential in and of themselves. They cannot be neglected safely. In a sense they are moral safety valves, for releasing animal spirits which might be dangerous to the community under pressure. Certainly some measure of play is needed to keep the balance of efficiency in all human lives." And another adds, "The spirit of play must come into rural life as having its full place beside the spirit of work."

Charlevoix county furnishes a typical example of how county work is helping to inaugurate this new spirit of play. Three years ago its secretary, A. B. Ball, arranged and conducted eight or ten rural play festivals and athletic tests for both boys and girls. These were on a township basis with rural schools as the unit of competition.

For years the high schools of the county had enjoyed their county meets. The town lads paced the course in their running slippers and meagre track suits, following that advice of Paul to "lay aside every weight." They have also had their jumping standards and other needed equipment, preparing themselves under the direction of experienced instructors. But in the country many a father and mother thought that their boys and girls could get enough exercise in the work on the farm, forgetting the recreational and moral side to play. Children coming together from different schools were shy of each other and often ashamed to participate in games and athletic contests in the face of the scorn of their parents. One farmer indicated his antagonism by destroying some of the simple apparatus on a school ground. Most of the teachers were girls who had never seen jumping standards and who did not know how to time a race.

But in the busy season of early May, the "men folks" took time off to get children to these township festivals. They went in automobiles. They rode in hay racks, loaded full. They hiked cross country, merrily swinging their dinner baskets. Generously they packed four and five small children into a single seated rig. The boys threw baseballs, raced and jumped in their heavy coats, caps and thick soled shoes under a plan of competition which put the small school on an equal footing with the large one. The girls attempted the balancing test, ran the potato race, or threw bean bags while admiring relatives crowded about to learn the score. There were games for the little ones. There were races and contests for the fathers and mothers, the aunts, uncles, big sisters and brothers. And there was a picnic dinner, all sitting round on the ground or standing at long tables.

Since the first year, the interest in these festivals has been growing. School officers have even consented to the appropriation of small amounts for their share of the expenses. Girls have made bloomers, or "gym" suits, and boys have discarded their heavy clothing for the lighter outfit of a trained athlete. School teachers say that the point of contact they have gained in this natural manner, teaching the games and preparing for these festivals, has made easier the disciplining of their schools. These picnic dinners have brought together the folks of a township for their first friendly social meeting. The spirit of co-operation has increased in strength, and the spirit of play is rapidly becoming the running mate to the spirit of work.

Of course, the great buildings and

expensive equipment which characterize the city associations are impossible in the country. But with a strong personality, they are led to the swimming pools which nature has built, taught to read the soils, the orchards and the stock, and given a great vision of what they can do to make their portion of the world better here and now. In their clubs, meetings once a week, comes the joy of fellowship and social relationships like a pleasing revelation, and they go out, even as boys, to attempt to do such heroic deeds as they have admired in the strong men of Old Testament days or seen in the virile manhood of the Christ.

Such was the work of the Eaton County Association at West Benton. Many said that West Benton was an "unusual" community with conditions "peculiar" to itself and "different" from those to be found elsewhere, and that young people are not interested in the church and are not likely to become interested. But a single group of boys was organized in that community. They grew corn. They attended the great state and county conferences of other older boys. They studied the Bible and listened to the homely, plain advice of neighboring farmers who visited their meetings. They became infected with the desire to help their own folks. So with money earned among their own folks, they presented a free lecture course in their church that winter. They split

a widow's winter fuel, and cut the corn of an unfortunate farmer. They arranged and served supper to more than 200 of their neighbors and friends, afterwards speaking on different moral problems related to their own community life. And because of what those boys said that night, to indicate the changed course they had set for themselves, another was inspired to return to his own fellows to persuade them to give up the bad and the good-enough, for the better and the best.

These young men embody the working ideals of the County Work department of the Y. M. C. A. spiritualizing as they have the uncommonly common work of the farm and fireside. It puts into flesh and blood the definition of County Work as given by K. I. Butterfield, president of Massachusetts Agricultural College: "The special mission of the Rural Association is by means of helpful comradeship and inspiring leadership to influence boys and young men living in the country on behalf of a complete manhood, motivated by the Christ spirit. It will teach that this complete manhood can be secured only by a growth that comes when one's play, one's toil, one's study and one's thinking are directed and suffused by the spirit of self-control and loving service."

The above article, descriptive of the county Y. M. C. A. movement, is the thirty-sixth of 52 special articles to be published in consecutive issues.—Eds.

## THE RED MIST.

By RANDALL PARRISH.

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### CHAPTER XVI.

#### A Prisoner.

It is indeed odd how the human mind works, and now this new discovery completely eclipsed every other consideration. The thought of possible escape, of any means of defense, never occurred to me. All my memory retained was that last glimpse of her slender figure at the window, and the silhouette of her averted face. What was her thought of me? Why had she endeavored so bravely to open a way for my escape? She had not even hesitated at quick invention at falsehood in my behalf, fearlessly facing her questioners, risking her very reputation in hope of protecting me. Could it have been merely from a sense of gratitude for the small service I had rendered her? This was hard to conceive; yet it was even harder to convince myself that she really cared—that her swift sacrifice of self had been other than the impulse of a moment. Why, really, she almost had reason to hate me for what had occurred. I had practically forced her into marriage, needlessly, uselessly. She might even be justified in believing I realized the truth, and was guilty of a cowardly deceit. My memory of her in the past was that of a proud, headstrong girl, possessing a quick temper, careless of whom she hurt. I had never thought she even liked me, or valued my friendship, and this adventure was far more liable to arouse hatred than affection. She was of a nature to resent the unfair advantage I had taken, and declare war. In the moment of her first surprise she had sprung to my defense, but as soon as she could consider the conditions, her whole nature would turn against me—even now the feeling of disgust had come. She had turned coldly away, hating the very sight of me—staring out of the window until I should disappear, dreading lest I prove cur enough to boast of our relationship. Well, the lady need not fear that. Nichols might tell the story, but it would never find utterance on my lips. And it would soon be over with, blotted out. My fate would be swiftly and surely settled—a drum-head court-martial at Lewisburg, a verdict of guilty, and a firing squad at dawn. The remedy was simple and effective. No one need ever know, for the preacher's lips could be easily closed. And perhaps Lieutenant Raymond—Bah! my teeth clinched angrily at thought of him, and I tramped on down the stairs to the gruff order of the sergeant.

There were three other prisoners, tall and sallow faced, roughly dressed moun-

taineers, one wounded in the arm, but I was kept separated from them with a special guard. The day was gloomy, with clouded skies, and the road so muddy the horses stood fetlock deep. Within ten minutes the entire command was in saddle, and moving slowly northward. The lieutenant rode in my rear for the first mile, watchful and suspicious; I could hear his voice issuing orders, but cared nothing as to what precautions were taken. The faint hope of some possible escape was beginning to dawn on my mind, but I realized the futility of any attempt then—a way might open at Lewisburg if the guards grew careless, but the slow moving horse under me, limping painfully with each step, was proof positive that any effort made now to break away would prove utterly useless. Noreen was riding in advance of the column between the two captains. A gray circular cape concealed her slender form, but I could observe the frequent turning of her head as she apparently conversed vivaciously with her attentive escorts. After we reached the crossroads Raymond spurred his horse forward and joined them, evidently convinced that my guard was sufficiently vigilant, although he stopped in passing to test the knot which bound my hands behind the saddle. It was an insolent act, but I gave no outward sign of resentment, not even glancing aside at his face as he finally rode on. No one spoke to me, the sergeant gripping my rein in one hand, his face as expressionless as though carved from stone. Once I asked a question of the trooper on the other side—a rather pleasant faced lad—but he only shook his head, and looked away. I was thus driven to my own solitary thoughts, and they were far from enjoyable.

I had been caught red-handed, within the enemy's lines, dressed in Federal uniform, and bearing papers purporting to belong to Lieutenant Raymond. There was no defense I could offer, no plea for mercy I could make. The court-martial before which I would be brought for trial would be merely a form—I was condemned already. I realized all this, yet the knowledge of my desperate condition did not weigh on my mind as heavily as did the memory of my relations with that careless, laughing girl riding in advance. Could she be acting a part, or did she actually feel indifferent to my fate? Surely she must know, must understand the conditions of my arrest. She was a soldier's daughter, and had seen enough of army life to realize the treatment given a captured spy. Yet the fate, overhanging me apparently made not the slightest impression up-



on her. She had never glanced at me as she came forth from the house; she had passed me by as if totally unaware of my existence, and now I could hear the sound of her laughter, as she chattered unconcerned with her three companions. There was but one conclusion possible—she really cared nothing. She had, obeying blindly the first impulse, endeavored to protect me from arrest, yet even that effort might have been made in fear lest I announce our marriage. But now, assured that I would not speak, relieved of that dread, her only remaining desire was to forget me utterly, to blot me completely from her memory.

It was a bitter thought, and yet no other was possible; nothing in her conduct, in the echo of her laughing words, the interest she exhibited in her blue-coated cavaliers, led me to any other conclusions. Perhaps I should have realized that such light-heartedness on her part must be assumed, for, casting my own case entirely aside, it was not natural that she should so soon forget the death of her father. It had come to her as a shock, a blow. I had witnessed the intense suffering in her face at her earlier realization of the truth. She could not have forgotten so suddenly, so completely; her present effort to appear light-hearted, indifferent, must arise from some special purpose in her mind. In a vague way this occurred to me, but prejudice, doubt of her, had assumed possession of my brain, and I could not grasp the probability in any clearness. Her show of utter, heartless indifference hurt and blinded me; that she rejoiced at the knowledge that within a few hours she would be freed from all the consequences of our rash act. It was the reaction which had given her such high spirits, the exhilarating sense of escape, a relief so profound as to cause her to even forget her father's death. This was the conception which took possession of me, obliterating every other possibility.

At first the thought served to numb my faculties, and I rode forward with lowered head, all interest in life dead within me. Then pride came to the rescue, and I straightened up in the saddle. She was my wife—that slender, laughing girl! Of course I would never claim her; no word would ever pass my lips to bring to her pain and humiliation. No one would ever know—excepting us two. But if I did speak she could not deny, and she must realize why I had kept silent, why I had even gone down to death with closed lips. She could not be a woman and fail to appreciate such a sacrifice. It would live in her memory; she would think of me as not altogether unworthy; she would know some time this was not a trick, but an accident, in which my part was as innocent as her own. Resentment would die out in her heart, and a kindlier feeling creep in. And then—there was yet a chance! While there was life there was hope, and I was soldier enough, and sufficiently reckless, to accept of any opportunity. There might occur a relaxation in the vigilance of the guard, some delay at Lewisburg, possibly a forwarding of me to headquarters at Charleston—some sudden, unexpected opening through which I could squeeze. I was ready enough to try, however desperate the occasion; and, if such a chance did serve, the end might not come merely with escape. I could see her again; talk with her face to face. It became a fascinating dream, an inspiration—at last a grim determination.

And so through the mud we rode steadily on, following the pike that curved along the base of the mountains, and finally into the streets of Lewisburg.

#### CHAPTER XVII. I Choose Death.

I KNEW the town well, and few walked those streets hand in hand changes had occurred since last I with my father. It had not grown any larger, and thus far the war had wrought little damage, although many of the shops were closed, and occasionally I observed marks of fire. The majority of the men on the street were in uniform, very few civilians and no women being visible, although I caught glimpses of curious faces peering at us through closed windows. Lewisburg had been strongly southern in sentiment, and doubtless the majority of her male population were bearing arms in the Confederate ranks, or had taken to the mountains in guerilla warfare. The most of life in the sleepy old town centered about the Frost Hotel, a three-story wooden structure, where the officers of the garrison lodged, and the court house, a dignified edifice of red brick, a block beyond, where in other days my father presided on the bench, now completely surrounded by a military camp. There were more Federal soldiers here

than I had expected to see, but a remark exchanged between two of my guard informed me that most of these had arrived during the night—a regiment of Ohio troops, and a battery of light artillery, destined to assist in a contemplated attack on Covington.

The head of our little column halted in front of the hotel, but Whitlock shouted a command to the sergeant, and we rode on past, the guard closing up tightly. I kept my face straight ahead, determined to make no sign, but nevertheless I had a glimpse of Noreen, standing at her horse's head, and, for an instant, I felt certain her eyes were resting on me. Momentary as this was—no doubt merely a glance of curiosity—yet it served to send the hot blood throbbing through my veins. That was the first faint sound vouchsafed me that she even recalled my existence, or gave me so much as a thought. She stood too far away for me to read the expression in her eyes, and yet, the very fact that her glance followed me brought quick response. Then Raymond spoke to her, touching her sleeve familiarly with his hand to attract attention, and she smiled up into his face, as if in answer to some witty remark. This was the last glimpse I had as we clattered on down the street.

At the court house steps the sergeant turned me over to the officer of the day, and I was marched into the basement. The old jail had evidently been burned, for I could see the roof



A Group's Meeting Place, Once a Creamery, now Used for Band Practice and Dances.

had fallen in, and the stone walls were blackened with smoke, but the lower story of the court house was bastille enough, the windows barred, the walls strong and thick. The place in which they thrust me had at one time protected the county records, was perhaps nine feet square, with one narrow window high up in the wall, and an iron door. The floor and walls were of stone, and the ceiling beyond reach. A soldier threw in a box, to be utilized as a seat, together with a couple of blankets.

"There, Johnny," he said carelessly, "I guess you'll stay here till you're wanted. There'll be some grub along after awhile."

The iron door clanged behind him, and I heard the sharp click of a heavy lock, then regular steps passing back and forth across the stone floor, proof that a sentinel had been posted. There seemed little need of one as I sat down on the box, and stared disconsolately about. The window afforded ample light, but no hope of escape. I could barely reach it with my hands by standing on the box, and the opening, even if the iron grating could be removed, was far too small to permit the passage of my body. I merely glanced at the patch of blue sky thus revealed, and then permitted my eyes to wander along the solid walls, until they encountered the only bit of the original furnishings of this underground vault—the shelves on which had once reposed the records of Green Briar County. They were of iron, as a safeguard against fire, with a sheet of iron at their back, concealing the wall behind. My heart gave a sudden leap; perhaps, after all, Fate had not been wholly unkind; at least I had another card left to play, and need not remain hopelessly staring about at those bare, solid walls. As a boy I had played about this building, invading every nook and corner. I could even recall when those shelves were first installed, and I had sat almost where I was sitting then, and watched the workmen bolt them into their present position. That seemed a long while ago—why, I could not have been more than eight or nine years of age. It was before my father bought the place out on the ridge, and we were living only a block down the street. This old court house was my favorite playground then, and I had explored every inch of it from cupola to wood cellar. I watched those workmen all one day, and the memory came back

to me that those shelves rested against the big chimney, and there was an opening leading into it, across which they had nailed a tin protector, before they fastened the iron to the wall.

If I could once get in behind that iron plate the way out would not be such a hard or difficult one to travel. The chimney was large; I recalled standing upright in the fireplace on the floor above, and looking up to where I could perceive the light of the sky. It was constructed of irregular bits of stone, which would afford lodgement for the feet, and grip for the hands, in climbing—no easy job, of course, but not impossible for one reckless enough to make the attempt. But how could I hope to pry loose that protecting sheet of iron? Where could I discover a tool to give me the necessary leverage to dislodge those bolts? Could one of those supports be unscrewed or twisted off? If so it might prove strong enough for the purpose. I stepped hastily across, and tested two of them with my hands, but found both these firm and immovable. I dare not exercise much force in fear the noise might be overheard, and besides it was time the jailer brought me in some food. So I went back to my seat on the box, and waited, my eyes on the iron, and my mind eagerly working on some plan which seemed feasible. I had a half dozen keys in my pocket, and a broken cartridge shell in my belt—nothing

else available. The searchers had stripped me clean. A careful survey of the floor revealed only a twisted nail, but there was something caught in the iron bars of the window; from where I sat it looked like the half of a broken horseshoe. I got up to see, but quickly sat down again—there was someone at the door.

It opened and a soldier stood aside while two men entered. One was Fox, the other a heavy-set, gray mustached officer, in the uniform of a colonel of infantry. The captain greeted me gravely, and extended his hand.

"I would far rather meet you as I did before," he said, "but war gives us no choice."

"I took my chances, and have no complaint," I answered heartily, for I liked the man. "I presume there is no doubt as to my fate?"

"I fear not, but the matter is not in my hands, for which I am grateful. This is Colonel Pinckney, in command."

I bowed, and our eyes met. The face confronting me was strong and resolute, its expression that of regret.

"A very young man, Captain Fox," he said to his companion, "which fact adds to the unpleasantness of such duty. Your name is Wyatt?"

"Yes, sir."  
"You claim connection with the Confederate service—an officer?"

"A sergeant of artillery, sir."

He cleared his throat impressively. "You have the appearance of an intelligent man, Sergeant Wyatt, and must realize the seriousness of your position. I am sure I need not dwell upon the fate which befalls a spy when captured by the enemy. In your case there seems to be no defense possible—you wear Federal uniform; were within our lines, and papers have been found on you of a most incriminating character. It is my understanding you make no denial."

"None whatever, sir; it would be useless."

"You have no reason to expect mercy?"

"No, sir."  
"Yet there is always a way in which mercy can be extended," he went on earnestly. "Doubtless you possess information which would be of the utmost value to us. I shall gladly use my influence on your behalf if the circumstances warrant."

"You mean, of course, if I will answer such questions as you may ask me?" (To be continued).



## Detroit Vapor Stoves Burn Oil or Gasoline

Like a city gas stove

So simple, just light the burners and put cooking utensils on right away—just like gas. Does not require watching. No wicks to trim, because none are used. It is a perfect delight to any good housekeeper. Cheaper than wood or coal. No piping or pressure tanks are used. Can be placed in any part of the kitchen. Prices as low as \$12. Write us for Catalog T 5, and name of your nearest dealer.

The Detroit Vapor Stove Co.  
Detroit, Mich.

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(Reg. U. S. Pat. Off.)

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Sales are climbing higher and higher because Red Head Spark Plugs make good our guarantee that Red Heads outlast the car. Made in all sizes to fit all motors. Ask your dealer or direct. \$1.00.

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In each town to ride and show a new 1915 model "RANGER" bicycle. Write for our liberal terms on a sample to introduce.

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All Standard parts in 1, 1½, 2 and 3½ tons. We will demonstrate in any part of state.

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Double Gearing Steel, bronze bearing  
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"Say, Boys! Have you made up your mind what you are going to be? Shall it be a trade, a profession, or something in the mercantile line? How would you like to become a Watchmaker and also take up Jewelry work and Engraving? It is a nice clean business and a trade that pays good salaries."

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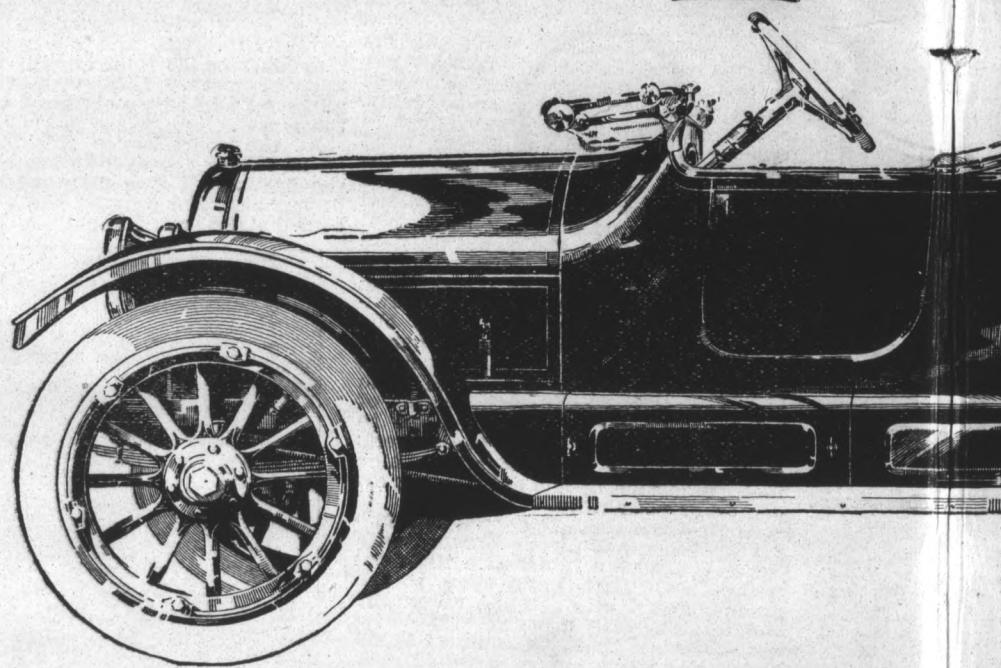
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Chicago, New York, Kansas City, San Francisco



# \$750

Model 83 f. o. b. Toledo  
Roadster - \$725

This is the largest 4-cylinder Overland  
that will be produced this year



**Overland**  
TRADE MARK

## The Newest Overland—\$325

THE 1916 Overland is in many particulars the same as the 1915 Overland—the famous Model 80 that sold for \$1075.

*But the price is \$325 less.*

The stream-line body is the *same* design as the \$1075 model of last season.

It has the *same* magnificent finish; that deep, rich tone of dark Brewster green with fine hairline striping of clear ivory-white.

It has the *same* powerful, economical thirty-five horsepower, four-cylinder motor, *but weighs less.*

It has high-tension magneto ignition.

It has the *same* underslung rear springs. It has the convenient arrangement of electric control buttons on the steering column.

It has the *same* easy-working clutch which any woman can operate; the *same*

### Specifications

35 horsepower motor  
High-tension magneto ignition  
5-Bearing crankshaft  
Thermo-syphon cooling

Underslung rear springs  
33" x 4" tires; non-skid in rear  
Demountable rims; with one extra  
Electric starting and lighting system

Handsome catalogue on request.

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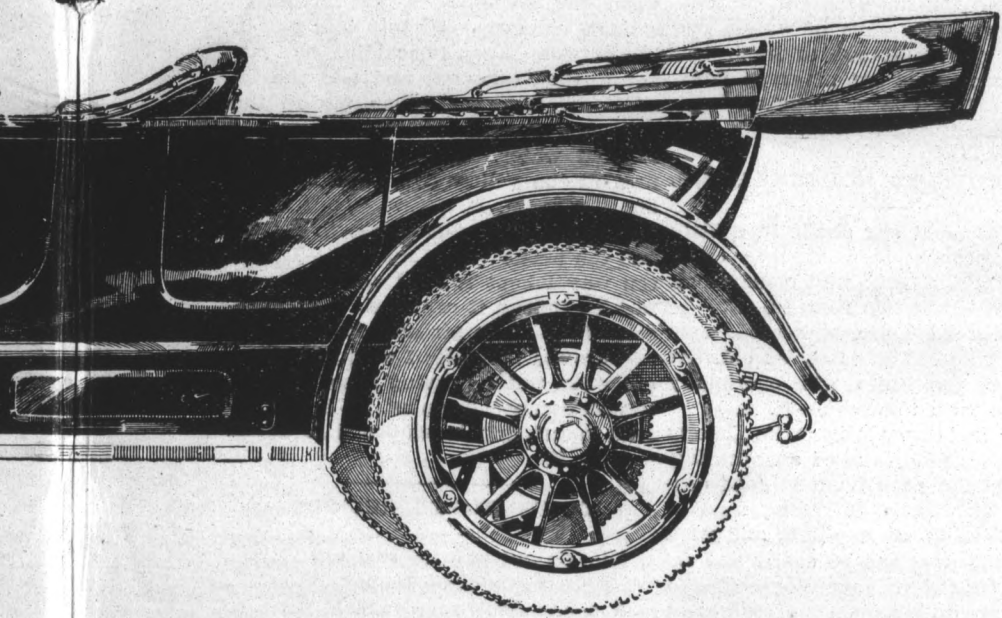
New Models Now on Display at the Factory

"Made in U. S. A."





**Overland**  
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**\$750**

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This is the largest 4-cylinder Overland  
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**\$325 Less Than Last Year**

“easy to handle” shifting levers; the *same*  
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It has 33" x 4" tires which is unusual  
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In detail, finish, mechanical fineness,  
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Headlight dimmers  
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 windshield  
 Instrument board on cowl dash

And it costs you but \$750—\$325 *less than*  
*last season's large 35 horsepower Overland.*

This car is on display at our dealers.  
 Deliveries are being made now all over the  
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Every Overland dealer already has a  
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Place your order immediately and you  
 can be sure of a speedy delivery.

Left-hand drive, center control  
 One-man top; top cover  
 Magnetic speedometer

request. Please address Dept. 86.

**Overland Company, Toledo, Ohio**

Exhibited at the Panama Pacific Exposition

Made in U. S. A.





# Woman and Her Needs

## At Home and Elsewhere



### Substitutes for Milk in Baby Feeding

**C**ONDENSED milk is frequently recommended for babies who can not digest cow's milk; often it is a success. There are some advantages and some disadvantages connected with its use. What these are can be seen when we understand how it is made. The milk is first heated to the boiling point and then the water evaporated to a little less than one-fourth the original volume. Sugar is then added in the proportion of about six ounces to the pint. When fed to the children one part of milk is used to 12 parts water for babies under a month old, and one part to eight to ten parts for older children.

The fats and proteids are thus diluted and made easier of digestion, and as sugar is the most easily assimilated food for infantile digestion, the condensed milk is a suitable one for babies with feeble digestion. The excess of sugar, however, is bad, and too long a continuance of this milk usually has harmful results. Rickets often follow a long-continued use of the sweetened condensed milk.

An unsweetened condensed milk can be bought which in many cases is better. This milk, known to the trade as evaporated milk, is often fed with success to babies who can not take fresh milk. It sours as quickly as fresh milk, however, and must be carefully

handled after the can is opened. The evaporated milk should be diluted with eight to 12 parts of water, and a little sugar added. In diluting any food it is best to add the largest amount of water mentioned, and reduce as you see the baby can take stronger food. Always err on the side of too weak food instead of too strong. If the food is too weak the baby will not suffer anything but hunger. If it is too strong the tiny stomach may be injured before you can find out what is the matter.

Kumyss is a milk preparation which is valuable in attacks of indigestion, but is rarely fed to infants. To make it, add a tablespoonful of sugar, four of water and a half a yeast cake to a quart of milk. Put in corked bottles and keep at a temperature of 70 degrees for a week, shaking the bottles vigorously five or six times a day. At the end of the week the bottles should be placed on ice.

Whey is valuable to feed in cases of acute indigestion. To prepare it add two teaspoonfuls of liquid rennet to a pint of milk, stir, and when the milk is coagulated strain the whey off through a thin muslin. But this process much of the casein of the milk is removed and the process of digestion is expedited.

DEBORAH.

### ONE MOTHER'S PLAN.

BY ELIZABETH L. STOCKING.

There is something beautiful about the dependence of childhood and yet it is not well to allow the boys and girls to be irresponsible. There are certain small duties and responsibilities they may assume at an early age which will prepare them for the work of later life.

It is difficult, however, to get the children to attend to these duties themselves. If they are reminded each time, the practicing will be done, the seam sewed up, or the room dusted at the proper season; but if mother does not tell them, "Oh, I forgot all about it," is the usual excuse.

One mother who had found it very difficult to get her little girl to practice regularly and also not to linger and dawdle over her dressing and about everything else she did, hit upon a scheme.

She made a schedule for her little girl. The day was planned, just the time she should have her breakfast, when she should start for school, the hour for practicing, for play, and for the little talk with mother. This schedule was pinned up over the little girl's writing desk to be consulted frequently during the day. Every day or so, mother wrote a new schedule, planning something a little different each time.

The schedule worked like a charm. The child took great delight in following it out. Many times during the day she ran to the schedule to find what she was to do next. She looked for the new schedule with delighted anticipation, for she was sure there would be some pleasant surprise in store for her. She never had an excuse for complaining that she didn't know what to do, for there, hanging above her desk, was the mentor always ready with a suggestion.

Of course, the schedule was rather elastic and was not always carried out just exactly; but it proved a great help both to the child and to her mother—so much of a help indeed that the mother decided that she could accomplish more herself, and her work would be more systematic if she had a schedule, too, so she wrote her schedule and pinned it up, allowing so many minutes for washing dishes, so many for dusting, so much time for the regular day's cleaning or cooking, etc.

She found that her schedule proved quite as useful as her little girl's, that her work was done more quickly, and that she had more leisure for reading and recreation.

The little daughter was, of course, delighted that mother should have a schedule, too, and consulted it as often as her mother did.

"It's wonderful," declared the mother, "how much more smoothly everything runs, and it is all due to the dawning of the schedule idea."

### DRINKS FOR HOT DAYS.

As the hot days of summer come, the drug stores and ice cream parlors become more popular. It sometimes seems difficult to find something at home to serve, as a substitute for the drinks and frozen dishes sold at these places. There are, however, many acceptable drinks which may be prepared in a short time if the housewife will keep the few necessary ingredients on hand.

Raspberry juice, when diluted and slightly sweetened is very delicious. Grape juice may be purchased in various sized bottles or canned at home when grapes are plentiful, and is also very good when served cold on summer days. Some recipes for more elaborate beverages are:

Piazza Punch.—Juice of two lemons,

ons, juice of two oranges, one cup of sugar, two cups of grape juice, two cups of water.

Fruit Punch.—Juice of six lemons, two cups of water, one pound of sugar chopped rind of one lemon, two bananas (sliced fine), one grated pineapple, half bottle of maraschino cherries, two quarts of apolinaris water.

Pineapple Punch.—One cup of grated pineapple, two cups of water, two cups of sugar, half cup of fresh tea, three oranges, one cup of grape juice, two and a half quarts of water.—Colorado Agricultural College.

### SHORT CUTS TO HOUSEKEEPING.

Shake crushed egg shells in a little water vigorously in a vinegar cruet and they will remove that cloudy look which the bottle takes on.—L. N.

If the bread knife is heated, new bread can be cut as easily as old, but remember, the knife will eventually be ruined with the heat.—M. A. P.

No doubt every housewife knows that feather pillows need an occasional sun bath to keep them in good condition. Sew loops of strong tape to two corners of each pillow and with little hooks they can be easily and securely adjusted to your clothesline to swing free in the open air, and need no attention while airing. We use picture hooks.—R. A. G. K.

Strong, neat buttonholes, for children's underwear, etc., may be worked on the sewing machine at a great saving of time and eyesight. Take a piece of the material two inches or more square and, laying it on the right side of the garment, stitch with the machine the length of the buttonhole desired. Allowing two stitches for width, stitch straight back till even with the beginning, then the two stitches for width. Sew around the second time. Then cut your buttonhole in the rectangle thus formed, and pulling the square of cloth through the hole, press it down smooth, and stitching around once more with the machine, trim off the superfluous edges.

Bread Starter.—One rounding tablespoon of mashed potato, one cup of potato water, one rounding tablespoon of sugar, a little salt, and one yeast cake which has been soaked in a little warm water. Let stand about 36 hours before using for bread. During the process of making bread, it may rise too much, once, but more than once will spoil the texture. If it is slow in rising, add one tablespoon of grated raw potato to hasten it.—Mrs. G.

Household Editor:—I enjoy reading the Michigan Farmer very much, and find many helpful articles in "Women and Her Needs." Mrs. J. S. asks for old-fashioned carpet rag dyes. I am sending some recipes I found written in an old book of a generation ago. I used them eight years ago, for a rag carpet, and the colors are still bright, though the carpet has been in constant use in living-rooms.

A Light Yellow.—For five pounds of cotton cloth dissolve one and one-half pounds of sugar of lead in hot water. Dissolve in like quantity of cold water 12 ounces of chrome of bichromate of potash. Put your cloth first in the lead water, rinse up and down several times, then wring out and put in the other, then back again into the lead. For orange, after the above, dip it in oven.—Mrs. J. J. O'C.

Prepare it as sugar, two cups of grape juice, two for whitewashing, settle it, pour off the top, reduce it, then dip in rags. Wash after it is dry.

Blue.—Two ounces of copperas to five pounds of cloth, one ounce of prussiate of potash, and one tablespoonful of oil of vitriol. Soak the cloth two hours in the copperas water, wash the kettle, then put in water enough to cover the cloth and put in the potash. Keep it scalding hot two hours, then take out and add the oil of vitriol, stir well, then put in the cloth, stir up a few minutes then rinse in cold water. For green, dip rags first in the yellow dye, then into the blue.—Mrs. M. H.

I was unable at one time to get ice and the butter was simply oil. This is the way I kept it solid and nearly as nice as though it came off ice. I placed it in a stone jar and over the top and around the sides I wrapped a towel wet in water, leaving it so wet that it just escaped dripping. When it began to get dry I dampened it again.—I. B. M.

### CONTRIBUTED RECIPES.

(We do not pay for recipes).

#### Chicken Soup.

A nourishing soup which may be made the principal part of the meal is made by heating two cupfuls of chicken broth and to it adding one cupful of sweet milk and a well beaten egg. Bring to scalding point but do not boil. Season with salt and pepper and serve with crackers.—L. M. T.

#### Oatmeal Cookies.

Two cups of brown sugar, three-fourths cup of lard, two eggs, one cup of sweet milk or water, a little salt, ratur in milk, one quart of rolled oats, two teaspoons of baking powder, one quart of pastry flour, one cup of chopped raisins. Stir well and drop by spoonfuls on baking tins.—Mrs. E. T.

#### Cucumber Pickles.

Wash and soak in salt water over night. In the morning drain. Take three quarts of vinegar, one and one-half cups of sugar, three tablespoons of mixed spices. Boil ten minutes. Drop in the cucumbers a few at a time. Let bubble up but not boil. Skim out the cucumbers and put into cans. Put in more cucumbers and continue in this way until all have been treated. Pour the hot vinegar over the pickles in the cans, and before screwing on the caps drop three or four slices of horseradish root on top of can. Seal up hot. The sugar can be left out, if one wants to. I put them up with and without sugar. I have taken pickles to different gatherings and received many compliments on their crispness. I am an interested reader of the Michigan Farmer and glean many helpful suggestions therefrom.—Mrs. A. G.

#### Lady Jane Cake.

One cup of sugar, one-half cup of milk, one-half cup of butter, two cups of flour, three eggs, one teaspoonful of baking powder, one cup of chopped raisins, one cup of chopped nuts. Beat the butter to a cream and gradually add the sugar then the eggs that have been beaten light and when this is creamed, add the flour, baking powder and milk, lastly stir in raisins, nuts and one teaspoonful of vanilla. Bake 15 or 20 minutes in a moderate oven.—Mrs. J. J. O'C.



## Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

### Associational Motto:

"The skillful hand with cultured mind is the farmer's most valuable"

### Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

### THE FARMERS' CLUB IN MINNESOTA.

(Continued).

Open with something that will stir each one present. Good music is always appropriate. A roll call with responses of a sentimental nature, either quoted or original, is good to break the reserve and formality which usually obtains when people first assemble. Have good music, readings, declamations, something in which the young folks may take part, a subject of interest to the women, a debate, a short address, sometimes a "spelling down," in fact, anything that will make the morning just a little brighter and more hopeful because of the Farmers' Club meeting. Do not allow the program to become too sordid by the discussion of business topics only. An appeal to our better nature is desirable. A simple lunch of sandwiches and coffee has become a fitting close to all Club meetings.

After the formalities of opening, the chief subject for the meeting should be considered for about forty-five minutes. A leader should be in charge, having been appointed by the chairman at a previous meeting. Special phases of the subject may be discussed at the leader's request by individual members who have had previous notice and an opportunity to make preparations. By this specialization, the best available thought on the subject may be brought out and those who do the work will learn how to study and to express themselves. In order to do this most effectively, a certain time should be set aside each day to devote to it, and after it has been determined upon nothing should be allowed to interfere with its proper use. Half an hour a day thus used will give surprising results in the course of a few years. The time of day selected is not so important as that the time be regularly applied. From eight o'clock until half-past eight each evening would probably be a convenient time for many.

Make use of all available literature pertaining to the subject under consideration. Many of the references here given may be obtained for the asking and it is hoped through the package libraries, now available and in preparation, to provide Clubs with the latest and best that has been written on various subjects. Often a book or magazine, a Farmers' Institute Annual, or other printed material may be borrowed from a neighbor; the school teacher frequently can help, and if you are fortunate enough to live in a county having a county agricultural agent, or if you are located near either a high, a consolidated, or a graded school, you have at hand a valuable source of information from which you are sure to get help. Avail yourself of all these sources when necessary in your study and in the preparation of Club work. Talk with those who have had experience or who know something about the subject. Observe what has been done by your neighbors and then read everything you can find that pertains to the subject. Don't be satisfied until you have done all this. Here, again, is a good reason why you should have ample time for preparation.

(To be continued).

## Grange.

### INTERESTING PROGRAM AT CALHOUN POMONA.

A very successful and altogether pleasant Pomona Grange meeting was held in Conri's range Hall when that Grange entertained Calhoun County Pomona for its regular June meeting. Following the usual social dinner hour, and a brief business session, an excellent program was given. Musical numbers, both vocal and instrumental, were pleasingly rendered by four young lady members during the afternoon.

A short paper, "Life is What we Make it," was read by Mrs. George Pond. It was the expression of the real character and high ideals of a good woman.

"The Profession of Home Making" was the subject very capably handled by Mrs. Myrtle B. Voorhees. She said, "The house is an architectural structure built alone by hands. The home is the work of the heart, furnished and adorned by love. Home and its people, little and big, is paramount to every other interest, and exquisite housekeeping is beautiful only as it enhances the home life and comfort of the individual dwellers."

When one pair of hands has to do it all, a nice woman learns what kind of work to slight and still be a good housekeeper, and find time for things that are really worth while. Many articles and garments may be carelessly ironed that the house wife may find time to prepare wholesome, well-cooked food for the family.

She said that housework becomes more interesting to the young daughter if simple experiments are tried in the kitchen, and whys and wherefores explained to her. She can understand why soda makes the brown bread sweet, why baking powder makes the biscuits light. Why the soup bone is put to boil in cold water and the roast in hot.

"The Young Farmer and His Task," was the subject chosen by the Rev. Ray W. Merrill, of Marshall, for the address of the day. Mr. Merrill's sincere interest in community welfare makes him a most successful worker in the great movement for rural life betterment.

"The farmer of today has at his disposal inventions that ingenuity has contrived, for utility of time and labor, and he goes out to action armed with the tools of efficiency. He begins with a new courage because he possesses a certainty of things, assured by the knowledge of experts and scientists who have solved some of his problems for him, and who can tell him things he needs to know."

"Every young man should know his farm as to its elements of success or failure. He must start intelligently with regard to nearness of market and soil fertility, and the right sort of farmer will approach his task with the idea that he does not yet know it all, but has a great deal to learn."

"He must affiliate his life with that of the community, thus will he find invigoration, vision, inspiration, and power that elevates it above the life of the individual."

"The right sort of man approaches his task with a spirit of challenge, glad that he has a job big enough to use all of his talents and call forth application of all his brain power. His great aim is to enrich and beautify a place which is to be his home and to make sufficient means therefrom to provide for himself, his wife and his family, the things of life which are really worth while."—Laura Minges.

### COMING EVENTS.

A large union Grange picnic which will be one of the best will be held in Recreation Park, Ypsilanti, Saturday, July 24, under the auspices of the Pomona Granges of the counties of Wayne, Monroe, Jackson, Lenawee and Washtenaw. If the weather is unfavorable the Masonic Temple will be used so, rain or shine, a large delegation is expected from each of the above counties. State Master John C. Ketcham and Past Master George B. Horton will give addresses.

## Best For Every Purpose

No matter when, where or what you may bake, be it buns, pies, biscuits or cake—doughnuts, crullers, cookies or sweets—there's only one flour for all these treats.

## New Century Flour

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Not bleached. Insist on the sack with "Our Dainty Maid." Most grocers sell it.

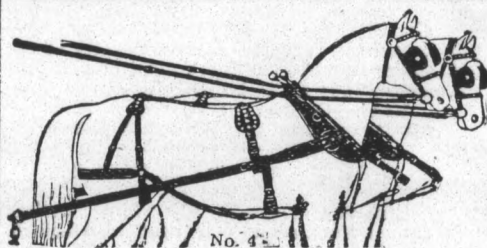


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Cleaning and grading Fall Seed Wheat with a Chatham Mill never fails to increase the crop 5 to 14 Bu. per Acre.

If some of you gentlemen who grow fall wheat question that assertion, just drop me a line and I'll overwhelm you with facts—actual crop records made by actual farmers, men who once "poo hooded" cleaning and grading Seed Wheat.

You've got rye, vetch, timothy, alfalfa or some other grain seeds that need cleaning, too. The "Chatham" is just the thing for those jobs. Next winter, the Chatham can grade and clean all your spring seed—barley, corn, oats, clover, and all kinds of grasses. Just now my prices are low and I give you a free trial. No money asked till you are satisfied. Hand power or gas. Send postal for startling facts and records of bumper wheat crops; and for free book which tells how to clean, grade and separate any grain or grass seed.

Manson Campbell Co., Dept. 60, Detroit, Michigan Kansas City, Mo.

**Chatham Grain Grader and Cleaner**

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CASE Hay Presses will last longer than any presses made and do very best work. Require 2 less men when equipped with CASE Hay Fork.

## CASE Hay Presses

Two sizes—14 in. x 18 in. (3½ to 5 tons) and 17 in. x 22 in. (4 to 6 tons). Tremendously strong and durable. Simple and safe to operate. Mail postcard for Baling Press Catalog and prices.

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For Women, Girls and Boys Preferred for 20 Years.

The OBLONG RUBBER BUTTON CLASP

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Ask at your Store or send 15c for Children's (give age) or 50c for Women's Sewons (four).

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# Markets.

## WEATHER FORECAST.

For the week beginning Wednesday, July 14, for the region of the Great Lakes. A change to considerably cooler weather will overspread this region about the 17th, which will be preceded by showers and followed by fair weather.

## GRAINS AND SEEDS.

July 13, 1915.

**Wheat.**—Wheat values kept within a narrower range than usual this past week, with the general tendency toward a firmer market. Weather conditions have been the most important factor in price making, although the crop in western Europe is below normal due to a lack of moisture. In this country harvesting has been delayed, and if rains interfere much further, it will be impossible to get any large amount of the growing crop on the market to satisfy those who wish to fill July orders. This condition keeps cash wheat prices higher than they would otherwise be. Foreign buying at present is not being carried on in any large volume. The visible supply decreased less than a million bushels. A year ago No. 2 red wheat was quoted locally at 85½¢ per bu. Quotations are as follows:

|           | No. 2 | No. 1  | Sept. |
|-----------|-------|--------|-------|
|           | Red.  | White. |       |
| Wednesday | 1.28  | 1.25   | 1.04½ |
| Thursday  | 1.29  | 1.26   | 1.06½ |
| Friday    | 1.28  | 1.25   | 1.07  |
| Saturday  | 1.29  | 1.26   | 1.06½ |
| Monday    | 1.29  | 1.26   | 1.06  |
| Tuesday   | 1.29  | 1.26   | 1.07  |

Chicago.—July wheat 1.10½¢; Sept. 1.04½¢; Dec. 1.07½¢.

**Corn.**—Quotations in this department continue to advance. Crop conditions are largely responsible for the change. There is some foreign demand while domestic calls are normal. Visible supply shows a decrease of over a million bushels for the week. The growing crop seems to be poor all over the country. One year ago No. 2 corn was quoted locally at 73¢ per bushel. Prices for the past week are:

|           | No. 3  | No. 3   |
|-----------|--------|---------|
|           | Mixed. | Yellow. |
| Wednesday | 77½    | 78½     |
| Thursday  | 78½    | 79½     |
| Friday    | 79     | 80      |
| Saturday  | 80     | 81      |
| Monday    | 80     | 81      |
| Tuesday   | 80     | 81      |

Chicago.—July corn 76.7¢; Sept. 73.1¢; Dec. 63.5¢.

**Oats.**—Notwithstanding the fact that crop conditions for this cereal are favorable to lower values, quotations in the local market for cash oats have shown liberal advances during the past week. The national crop report indicates a yield of over 250,000,000 bushels more than that of 1914 and also of the five-year average from 1909 to 1913. One year ago standard oats were quoted at 41½¢ per bushel. Visible supply shows a million bushels decrease. Prices for the past week are:

|           | Standard. | No. 3  |
|-----------|-----------|--------|
|           |           | White. |
| Wednesday | 53        | 52½    |
| Thursday  | 54        | 53½    |
| Friday    | 55        | 54½    |
| Saturday  | 56        | 55½    |
| Monday    | 56½       | 56     |
| Tuesday   | 56½       | 56     |

Chicago.—July oats 48.2¢; Sept. 38¢; Dec. 39.5¢.

**Rye.**—With the new crop promising an acreage yield of a bushel above the five-year average, and scarcely any demand, values have been marked down liberally during the past week. Cash No. 2 is now quoted at \$1 per bushel, while August is 94¢ per bushel.

**Beans.**—The demand for beans is light and prices are off another 5¢ this last week. Detroit quotations: Cash \$2.80; Aug., \$2.90. Chicago trade quiet and steady. Pea beans, hand-picked choice, quoted at \$3.18@3.25; common \$3@3.15; red kidneys \$3.25@3.65.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.50; seconds \$6.20; straight \$6; spring patent \$7.10; rye flour \$6.50.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$28; corn and oat chop \$30 per ton.

**Hay.**—Market is higher. Carlots on the track at Detroit are: No. 1 timothy \$20.50@21; standard \$20@20.50; No. 2, \$18.50@19; light mixed \$20@20.50; No. 1 mixed \$18@18.50; No. 1 clover \$14@15.

New York.—Shipping grades quoted at \$20 per ton.

**Straw.**—Rye straw \$9@9.50; wheat and oat straw \$7@7.50 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Heavy offerings caused a decline of ¼¢; consumptive and storage demands are good. Extra creamery 26½¢; firsts 24¼¢; dairy 21¢; packing stock 19¢.

**Elgin.**—Market steady at prices ½¢ lower than last week. Quotations for the week 26½¢ per pound.

**Chicago.**—Market is quiet and favors buyers. Prices are lower. Supply large. Extra creamery 26½¢; extra firsts 25@25½¢; firsts 23½¢@24¢; seconds 22@23¢; packing stock 19@19½¢.

**Poultry.**—Market steady and quiet. Hens are higher; ducks lower. Live.—Broilers, No. 1, 23@24¢; No. 2, 20@21¢; hens 15@15½¢; ducks 15@16¢; geese 10@11¢.

**Chicago.**—Market steady and quiet. Fowls are ½¢ higher than last week but large supply will likely bring the price down. Springs are in good demand. Fowls, good weights 13¢; spg chickens 19¢; ducks 13¢; young ducks 14@15¢; geese 8@9¢; spring geese 14@15¢; guinea hens \$2.75@3 per dozen.

**Eggs.**—Moderate receipts and heavy consumptive demand have advanced price 1¢. Fresh stock sells at 18½¢ per dozen.

**Chicago.**—Market firm with prices slightly better for good stock. Demand is good. Miscellaneous lots, cases included 14@17¢; ordinary firsts 15½@16¢; firsts 16½@17¢.

**Veal.**—Quoted steady at 13@13½¢ for fancy, and 10@11¢ for common.

## FRUITS AND VEGETABLES.

**Strawberries.**—Steady and active, prices unchanged. Quoted at \$2.50@3 per bushel.

**Chicago.**—Market is quiet and supply small. Quoted at 90¢@1.15, according to quality.

**Raspberries.**—Are in active demand. Reds are quoted at \$5@5.25; blacks at \$3.25@3.40 per 24-qt. case.

**Chicago.**—Market for blacks is easy on account of liberal receipts. Reds are in active demand and fair supply. Quotations are: Blacks \$1.15@1.25 per 16-qt. case; reds, \$2@2.50 per 24-qt. case; small and soft down to \$1.25.

**Gooseberries.**—Are selling well at \$2@2.25 per bushel.

**Chicago.**—Large, sound berries are in good demand. Downings sell for \$2.15 per 16-qt. case; others 90¢@1.

**Blackberries.**—Active at \$3@3.25 per 24-qt. case.

**Chicago.**—Market quiet with supply and demand fair. Eldorados, 24-qt. cases, sell for \$2.25@2.50.

## WOOL.

**Boston.**—Market continues to show firmness with a tendency of prices upward. Manufacturers are buying liberally, while dealers who are in a position to hold their stocks appear not at all anxious to sell. Fleeces are in fair demand. Unwashed clothing is nominally quoted at 24@30¢; do combing 29@35¢; do delaines 28@29¢ for Michigan fleeces. The foreign market is showing an upward trend, which is encouraged by the predicted short crop of Australian wool.

## GRAND RAPIDS.

New home-grown potatoes brought 60@65¢ per bushel on the city market Monday morning. They are being offered quite liberally now and prices may continue low. The strawberry season will close this week, berries bringing \$2 per crate. Red raspberries and blackcaps are coming on fast now, with reds around \$2.25 and blackcaps \$2. Sour cherries are worth 75¢ per half bushel. Fresh eggs are bringing 16½@17¢; dairy butter 20@21¢. The mills are paying \$1.15 for wheat.

## DETROIT EASTERN MARKET.

The farmers sold out early Tuesday morning, buyers being present in large numbers and disposed to take products liberally. Prices, however, were only about steady. Cabbage is coming more freely and sells at 40@50¢ per bushel; a few old potatoes sold at 30¢; black raspberries of good quality \$3.50 per 24-qt. case; good strawberries \$3.50 per 24-qt. case; currants 10 per qt; onions three bunches for 25¢; celery 40¢ per large bunch. No eggs nor butter in sight. Loose hay is offered sparingly with sales ranging from \$21@23.50 per ton.

A basket picnic will be held by the Oakland County Horticultural Society at the Orchard Lake Hotel Grove, on July 17, at 11:00 a. m. Topics of fruit-growing interests will be given and state fair plans will be discussed. Everyone interested in horticultural work is invited to attend and become a member of the society.—R. J. Corvill, Sec'y.

## LIVE STOCK MARKETS.

### Buffalo.

July 12, 1915  
(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 215 cars; hogs 92 d. d.; sheep and lambs 20 d. d.; calves 1400 head.

With 215 cars of cattle on our market here today, 20,000 reported in Chicago and 10@20¢ lower, our market on the best dry-fed steers of good finish and choice quality was about 10¢ per cwt. lower than last Monday, but all of the plain and medium dry-fed cattle sold from 15@25¢ lower, and grassers of all descriptions sold from 25@50¢ lower than last week. Our advice to all shippers is to be very careful on these grassy slippery cattle; the butchers are very much dissatisfied with the kill of them and they are bound to buy them lower or not buy them at all, consequently we advise very careful buying in the country of anything below choice to prime quality.

We had a lower market on all weights of hogs today, although pig stuff did not suffer as much in price as strictly yorkers. Light mixed hogs were not more than a nickel lower, but strictly yorkers showed a 10@15¢ loss from Saturday's best time. Packers bought the handy weights at \$8.10, with heavies at \$7.75@8; yorkers \$8.10@8.15; pig stuff as high as \$8.25; roughs were extremely dull, best selling around \$6.50 with common and thin kinds from \$4@5; stags \$5@5.50. Market closed rather quiet with about everything sold.

The market was slow on lambs and active on sheep today with prices 25¢ lower than the close of last week; most of the choice lambs selling at \$10. Look for steady prices last of week with moderate receipts.

We quote: Lambs \$9.50@10; cull to fair \$6@9; yearlings \$7@8; bucks \$3@4.50; handy ewes \$6@6.25; heavy do \$5@5.50; wethers \$6.50@7.25; cull sheep \$3@4.50; veals, choice to extra \$10.75@11; fair to good \$7@10.50; heavy calves \$6@8.

### Chicago.

July 12, 1915.

Cattle. Hogs. Sheep.  
Receipts today..21,000 35,000 12,000  
Same day 1914..14,770 25,576 21,434  
Last week....42,357 108,597 64,367  
Same wk 1914..30,083 93,997 70,850

Shipments from here last week embraced 6,911 cattle, 25,586 hogs and 368 sheep, comparing with 12,895 cattle, 17,325 hogs and 3,747 sheep for the same week last year.

Hogs received last week averaged 238 lbs., comparing with 234 lbs. a week earlier, 240 lbs. a year ago and 243 lbs. two years ago.

Buyers were slow in entering the cattle market this morning, and at a late hour little was accomplished, the belief being that the choicer kinds would go at steady to 10¢ lower prices, cows especially were numerous and not wanted except at reduced prices. Hogs broke 5@10¢, the coarser lots of heavy packers weakening the most. Sales ranged at \$6.75@7.75, with prime weighty pigs salable up to \$7.50. Spring lambs were called fully 25¢ lower, with the best car lots of natives at \$9.25 and the best range lots worth about \$9.50.

Cattle underwent a boom in prices last week that resulted in the best class of cattle selling at \$10@10.40 on Wednesday, the high day. The top a week earlier stood at \$9.95, four weeks earlier \$9.50, a year earlier \$9.75, two years earlier \$9.15, three years ago \$9.75, four years ago \$7, and five years ago \$8.60. As is often the case, the market weakened and ruled sharply lower on Thursday, despite the usually small run of cattle. The week was not a favorable one for owners of butcher stock not of the better class, with grassy cattle strongly discriminated against. It was corn-fed cattle that underwent the great advance. The bulk of the steers offered on Wednesday, the high day of the week, went for \$8.90@10.25, while sales of the poorer class of grass steers were made at \$7@8. A common to fair class of warmed-up steers sold at \$8.10@8.75, while a medium class of steers brought \$8.80@9.25, good steers bringing \$9.30@9.95 and choice beefs \$10 and upward. The best prices were obtained for prime weighty cattle, while prime little yearling steers sold at \$10@10.40, with good yearlings offered at \$9.25 and over and sales all the way down to \$7.50@8.50 for the commoner lots. Butchering cows and heifers were active sellers when fat, ordinary to prime offerings going at \$5.20@9.60, the best cows selling to a limited extent at \$7.50@8.50. A sale was made of 24 heifers averaging 790 lbs., including seven steers at \$10.05. Cutters went at \$4.60@5.15, canners at \$3.25@4.55 and bulls at \$5.25@8. Calves sold anywhere from \$5@8.50 for heavy weights up to \$10.25@11.35 for desirable light vealers. An advance to \$11 for the best cattle is predicted by many good judges. Good cattle advanced 25@40¢ last week,

while grass cows and heifers were that much lower.

Hog prices last week had some good rallies, with a later reaction. General conditions seem to favor high prices for the remainder of the summer period, with the exception of lower grade packing sows which will very likely go lower. Recent receipts of hogs have averaged 234 lbs., comparing with 231 lbs. a week earlier, 241 lbs. a year ago and 242 lbs. two years ago. At times of late the Chicago packers have managed to hold prices down here by buying hogs in the west. At the week's close hogs sold at \$6.75@7.15 for coarse to good heavy packing lots and at \$7.20@7.80 for better offerings, with prime light shippings hogs at the top and the best heavy shipping hogs at \$7.55, while pigs brought \$6@7.50. The spread in prices between rough, heavy packing hogs and choice barrows was the widest yet seen.

Spring lambs comprised most of the receipts last week. While everything in the live mutton line brought extremely high prices, with lambs far higher than in past summers, fluctuations in values were large, packers raiding the market after lively upturns in prices for lambs and sheep. On Monday prime range spring lambs brought \$10, but on Saturday lambs sold on the basis of \$7@9.65, while clipped offerings went as follows: Yearlings \$6@8.25; wethers \$5.75@6.75; ewes \$2.50@6; bucks and stags \$4@4.75.

Horses were marketed much less freely than usual last week, but the supply proved sufficient for the lessened domestic and foreign demand, and prices were no more than steady. Army horses were salable at \$135@150 for riders and \$145@210 for gunners, while a few good commercial chunks brought \$210@240. Drafters weighing from 1550 to 1750 lbs. were valued at \$185@285, farm chunks at \$60@200 and drivers \$100@200. Waggoners and expressers sold at \$165@210.

## MICHIGAN CROP REPORT.

**Wheat.**—Average estimated yield of wheat in the state is 17.69, in the southern counties 17.66, in the central counties 18.24, in the northern counties 17.09, and in the upper peninsula 18.43 bushels per acre.

**Rye.**—The average estimated yield of rye in the state is 15.06, in the southern counties 14.88, in the central counties 15.03, in the northern counties 15.12 and in the upper peninsula 18.38 bushels per acre.

**Corn.**—The condition of corn in the state and northern counties is 71, in the southern and central counties 70 and in the upper peninsula 79. One year ago the condition of corn in the state was 92.

**Buckwheat.**—The acreage of buckwheat sown or to be sown as compared with last year is 91 in the state, 90 in the southern counties, 89 in the central counties, 92 in the northern counties and 101 in the upper peninsula.

**Beans.**—The acreage of beans planted or to be planted as compared with last year is 99 in the state, 94 in the southern counties, 103 in the central counties, 107 in the northern counties and 96 in the upper peninsula. The condition of beans compared with an average is 86 in the state, 85 in the southern counties, 87 in the central counties, 89 in the northern counties and 102 in the upper peninsula.

**Potatoes.**—The condition of potatoes in the state is 91, in the southern counties 92, in the central counties and upper peninsula 89, and in the northern counties 93.

**Sugar Beets.**—The condition of sugar beets is 93 in the state, 94 in the southern counties, 91 in the central counties, 92 in the northern counties and 87 in the upper peninsula.

**Clover.**—The condition of clover as compared with an average is 95 in the state, 96 in the southern counties and upper peninsula and 94 in the central and northern counties.

**Hay and Forage.**—The acreage of hay and forage that will be harvested as compared with last year is 93 in the state, 95 in the southern counties 90 in the central counties, 89 in the northern counties and 98 in the upper peninsula.

**Peas.**—The acreage of peas sown as compared with last year is 94 in the state, 95 in the southern and northern counties, 90 in the central counties and 103 in the upper peninsula.

**Fruit.**—Prospect for average crop of apples for the state is 50 per cent; of peaches 56 per cent; of pears 40 per cent; of plums 54 per cent; of grapes 49 per cent; of raspberries and blackberries 80 per cent.

**Peaches.**—The prospect for a crop of peaches in the counties included in the Michigan fruit belt is as follows: Allegan 61; Berrien 88; Ionia 75; Kent 91; Ottawa 83; Van Buren 82; Muskegon 58; Newaygo 100; Oceana 83; Benzie 54; Leelanau 50; Manistee 52; Mason 70; average for Michigan fruit belt 73; average for Michigan fruit belt, 1914, 42.



## THIS IS THE FIRST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

## DETROIT LIVE STOCK MARKETS.

## Thursday's Market.

July 8, 1915.

## Cattle.

Receipts 1418. The market at the local stock yards was active in all departments but receipts were far below those of a week ago and this was the cause of the advance. Especially in the cattle division. There is still no sign of the yards opening for stockers, feeders or milch cows and consumers of beef can make up their minds that they will find beef higher this winter than it has ever been before, plenty of light stockers are coming here every week that should never leave the farm and would not if the owner had feed, but the farmer that has an abundance of feed cannot buy anything to feed and the little stuff goes to the butcher.

The cattle trade here was active and dry-fed and good grass butchers were 15@20c higher than last week and all other grades were strong as follows:

Best dry-fed steers \$8.25@8.50; best handy weight butcher steers, grass \$7.25@7.75; mixed steers and heifers, grass \$7@7.50; handy light butchers \$6.50@7.25; light butchers \$6@6.75; best cows \$6@6.25; butcher cows \$5@5.50; common cows \$4@5; canners \$3@4; best heavy bulls \$5.50@6; bologna bulls \$5@5.50.

Reason & S. sold Garber 2 bulls av 1225 at \$5.75, 1 do wgh 1060 at \$6.35; to Bray 4 cows av 1100 at \$6; to Rattkowsky 2 do av 590 at \$5.50; to Thompson Bros. 6 butchers av 718 at \$6.80, 1 cow wgh 850 at \$4.75.

Wortheley sold Mason B. Co. 3 steers av 1017 at \$7.60, 1 bull wgh 1300 at \$6.

Haley & M. sold Bray 2 cows av 1135 at \$6.10, 1 do wgh 1150 at \$6.15; to Resnick 2 bulls av 1125 at \$5.50, 1 cow wgh 800 at \$4; to Kamman B. Co. 2 steers av 900 at \$7.40, 12 do av 930 at \$7.30; to Sullivan P. Co. 2 cows av 1120 at \$5.75, 10 butchers av 808 at \$7, 8 do av 740 at \$6.65, 4 do av 1077 at \$7.90, 3 do av 790 at \$6.85; to Parker, W. & Co. 7 do av 703 at \$6; to Feldman 6 cows av 960 at \$6.15; to Hammond, S. & Co. 20 steers av 1011 at \$8; to Thompson Bros. 1 cow wgh 1120 at \$5.50, 1 heifer wgh 650 at \$6.75, 3 steers av 1033 at \$7.25, 2 do av 1130 at \$6.40, 18 do av 993 at \$6.75; to Rattkowsky 4 butchers av 812 at \$5.15; to Garber 2 cows av 1300 at \$5.85.

## Veal Calves.

Receipts 623. The veal calf trade was not so active as on Wednesday but prices averaged about the same. The best brought \$10.50@11 and medium and common from \$7@10.

Haley & M. sold Parker, W. & Co. 10 av 178 at \$10.50.

Roe Com. Co. sold Rattkowsky 6 av 180 at \$10.50; to Sullivan P. Co. 7 av 180 at \$11, 1 wgh 200 at \$11, 9 av 160 at \$10.50, 3 av 180 at \$10.50.

Reason & S. sold Parker, W. & Co. 9 av 155 at \$10.75.

## Sheep and Lambs.

Receipts 1629. The sheep and lamb trade was steady with Wednesday or last week; a few extra fancy grades brought \$10.25@10.50, but bulk of sales was \$9.75@10 for lambs. Sheep from \$4.50@5.25. The close was steady. Best lambs \$9.75@10.25; fair lambs \$8@8.50; light to common lambs \$6.75@7.25; yearlings \$7.50@8.50; fair to good sheep \$4.75@5.25; culls and common \$3@4.

Bishop, B. & H. sold Parker, W. & Co. 15 yearlings av 75 at \$7.75, 4 sheep av 125 at \$5, 8 lambs av 58 at \$9, 9 do av 60 at \$9.75; to Thompson Bros. 8 sheep av 95 at \$4.25, 10 yearlings av 70 at \$7.50, 23 lambs av 68 at \$10, 22 do av 52 at \$9.50, 9 do av 65 at \$10; to Hammond, S. & Co. 16 sheep av 95 at \$4.50, 8 lambs av 70 at \$10.25; to Thompson Bros. 22 do av 50 at \$9.50, 44 do av 65 at \$10; to Parker, W. & Co. 112 do av 70 at \$10, 15 do av 45 at \$7.50; to Mich. B. Co. 10 sheep av 112 at \$4, 4 do av 155 at \$4.25, 4 yearlings av 125 at \$7.50, 6 sheep av 130 at \$4.50.

Roe Com. Co. sold Barlage 4 yearlings av 75 at \$7, 2 sheep av 90 at \$5, 40 lambs av 65 at \$10.50; to Mich. B. Co. 16 sheep av 130 at \$4.70, 3 do av 155 at \$4.75, 5 lambs av 60 at \$7.50, 43 do av 75 at \$10.25, 31 do av 80 at \$10.

Johnson sold Newton B. Co. 13 sheep av 120 at \$4.50, 45 lambs av 75 at \$10.

## Hogs.

Receipts 4525. In the hog department nothing was sold until late. Chicago opened and closed 10c lower and all grades here will bring \$7.80@7.85, or 10c lower than on Wednesday.

## Friday's Market.

July 9, 1915.

## Cattle.

Receipts this week 1842; last week 2280; market steady. Best dry-fed steers \$8.25@8.50; best handy weight butcher steers, grass \$7.50@8; mixed steers and heifers \$7@7.50; handy light butchers \$6.50@7.25; light butchers \$6@6.75; best cows \$6@6.25; butcher cows \$5@5.50; common cows \$4.25@5; canners \$3@4; best heavy bulls \$5.50@6; bologna bulls \$5@5.50.

## Veal Calves.

Receipts this week 863; last week 1051; market strong. Best \$11; others \$7@10.50.

## Sheep and Lambs.

Receipts this week 2075; last week 1883; market steady. Best lambs \$9.75@10; fair lambs \$8@8.50; light to common lambs \$6.75@7.25; yearlings \$7.50@8.50; fair to good sheep \$4.50@5; culls and common \$3@4.

## Hogs.

Receipts this week 6934; last week 9640; market 10@15c lower on all grades; \$7.65@7.70.

## LIVE STOCK NEWS.

The Brookwater offering of Durocs, which will be sold at Brookwater Farm, July 28, as announced on page 59 of this issue, will afford Michigan farmers and breeders another opportunity to buy foundation stock of the best of breeding at sale ring values. The quality of Prof. Mumford's Brookwater herd is attested by the fact that during the past year Durocs bred at Brookwater Farm have been sold into 19 states and Canada. The coming sale will doubtless add other states to this list, but the bulk of the offerings should be kept in Michigan to improve the herds of our own state and to serve as foundation stock for the establishment of other breeding centers. The offering includes 53 head, of which 36 are bred sows, mostly late summer of 1914 gilts that were well grown. Of these 18 are by the great herd boar, Brookwater Cherry King, first senior yearling boar and reserve senior champion at the 1914 Michigan State Fair, and 20 are bred to him. Three service boars of quality and a choice lot of spring pigs are included in the offering. Write for a catalog and be on hand at the sale.

The domestic consumption of fresh and cured hog meats is extremely large, being greatly stimulated by the unusually high prices asked in the retail butcher shops for beef and mutton, with lamb chops retailing for 40 cents a pound in Chicago. The foreign purchases, too, are extremely large, and in a recent week exports of cured hog meats from this country aggregated 13,967,900 lbs., comparing with 17,452,900 lbs. a week earlier and only 4,690,200 lbs. for the corresponding week last year. On the other hand, ourlard exports are showing all the time a large falling off, and in the week just referred to they aggregated only 4,559,000 lbs., comparing with 6,491,000 lbs. a week earlier and 9,982,000 lbs. a year ago. Produce is made rapidly, with large hog receipts at leading receiving points, and up to recent date western packers had slaughtered since the first of March 1,511,400 more hogs than for the corresponding period a year ago. Hogs continue to sell at higher prices than at corresponding dates in most former years.

## A RAZOR SNAP.

A new lot of Imported German Razors at 50 cents while the supply lasts, is now offered by the Michigan Farmer.

The razors are made of the best German steel, five-eighth inch blade, and black handle. We will not say just what these razors ordinarily retail at, as prices on razors vary with each dealer, but we have seen razors no better sold at \$1.25 and \$1.50.

Every man who shaves ought to have at least three razors as it is a proven fact that giving a razor a rest is beneficial to it, and here is your opportunity to get a supply at very little cost.

So, only while our present supply lasts the price is 50 cents each, postpaid, or a half-dozen at \$2.00, postpaid.

## A Strop Bargain, Too.

We also have a new lot of Presto All-in-One razor strops that dealers sold at \$1.00 each. These strops are made of finest horsehide leather and one side is treated with All-in-One solution which makes it possible to put a hair-splitting edge on the dullest razor. It combines the strop and hone in one.

The special price on the strop alone, while the supply lasts, will be 50 cents, postpaid, but if ordered together with one of the above razors the price of both will be only 75 cents postpaid, or \$1.15 with the Michigan Farmer one year; \$1.60 for three years and \$2.10 for five years.

This would make a nice present, worth double the cost.

## Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Indigestion.—I have two young cows which, so far as I can tell, are well, but a stringy sort of substance forms on inside of separator which leads me to suppose that something may be wrong. H. S., Augusta, Mich.—Give your cows 1 oz. of bicarbonate soda, 1 oz. powdered charcoal and 1 oz. of salt at a dose in feed night and morning.

Bursal Bunch.—My seven-year-old mare has bunch on side of fetlock joint and am told it is sidebone. What must I do to take it off? J. R., Yale, Mich.—Apply one part red iodide of mercury and six parts lard to bunch every week or 10 days and you will be able to gradually reduce it.

Grease Heel.—During the night the leg of my horse becomes sore from fetlock to knee and I have applied different remedies without success. I. Raynesville, Mich.—Give 2 drs. of acetate of potash at a dose in feed or water three times a day, also dissolve ¼ lb. acetate of lead, ¼ lb. sulphate of zinc, 1 oz. tannic acid in one gallon of water and apply to sore leg three times daily. He should be fed enough grass to keep bowels open.

Obstructed Nasal Passage.—I have a pig about four months old that breathes through his mouth as though his nasal passages were blocked. When in nest sleeping he breathes through nose, but when excited or exerted much he breathes through the mouth. His throat appears to be some swollen. W. N. A., Cadillac, Mich.—Apply one part tincture iodine and four parts camphorated oil to throat daily. It is possible that a surgical operation on nose may be necessary before he can breathe normally.

Wart on Shoulder.—My mare has what I call a wart on side of shoulder which trace rubs, causing it to bleed. A. N. D., Montague, Mich.—Cut wart out and apply one part tannic acid and three parts powdered alum to wound twice a day.

Sore Tendons—Swollen Glands—Corns.—I have a driving mare which when driven on hard road swells in back tendons and travels some sore. I also have a five-year-old horse that had distemper last summer; since then glands of throat swell. I would also like to know if corns can be cured. R. B., Minden City, Mich.—Clip hair off tendons and apply one part powdered cantharides and four parts lard twice a month and it will strengthen her weak tendons. Apply one part iodine and nine parts lard to swollen glands two or three times a week. Corns are often the result of leaving shoes on too long, or from a bruise of some kind, such as leaving the heels too high, or improper shoeing. A removal of the cause will operate as a remedy.

Colic—Indigestion.—My eight-year-old mare has light attack of colic two or three times during the summer and I would like to know how I can prevent it. C. R., Mt. Clemens, Mich.—Careful feeding and good care and daily exercise will usually ward off attacks of indigestion, that's all that you need to do to prevent your mare having indigestion and colic.

Irritation of Skin.—I have eight pigs about three months old that have been running on rape for about a month, and now the skin on head and ears is cracking and forming scabs. L. W., Amble, Mich.—Apply one part oxide of zinc, four parts vaseline to sore parts of body once a day, and give each pig a half teaspoonful of cooking soda at a dose in feed or water twice a day.

Cow Gives Bloody Milk.—I have a four-year-old cow that gives bloody milk from one teat. The milk from this quarter was free from blood in the evening; next morning mixed with blood. Miss E. D., Mt. Pleasant, Mich.—Dissolve ¼ lb. sugar of lead, 2 ozs. of sulphate of zinc in a gallon of water and apply to bruised quarter of udder two or three times a day.

Eczema.—My horses are troubled

with skin eruption, causing them to itch and rub against stall partition and bite themselves. These horses are fed timothy, alfalfa and when fed have some grain at each meal. Some of the best authorities claim that alfalfa can be fed freely with no ill effect; therefore, I am at a loss to know what brought this trouble on. My spring pigs run in alfalfa pasture, their ears and head and back are sore, especially the white ones. L. A. B., Highland, Mich.—Give your horses a dessertspoonful of Donovan's solution at a dose in feed two or three times a day and apply one part coal tar disinfectant and 30 or 40 parts water twice a day and it will not do them any harm to wet their whole body, leaving this solution on to dry by evaporation. A moderate amount of alfalfa fed to them should do no harm. Apply one part oxide of zinc and five or six parts vaseline to sore parts of pigs once a day.

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THE THORNBURGH MFG. CO. Dept. 8, Bowling Green, Ohio

**\$4 TO \$8 MORE PROFIT PER ACRE**



# Farm Commerce.

## Extending the Berry Market

How it is Possible to Send Perishable Fruit to Distant Consumers.

**I**F raspberries were carefully handled they could be satisfactorily shipped much farther than the distance which is now regarded as the limit for successful marketing.

The most common causes of decay in berries while in transit or after arrival on the market are mold fungi, usually gray mold or blue mold. Neither of these fungi is likely to injure firm, sound berries but the spread quickly where the fruit has been injured in handling or is over-ripe and soft. In this respect the successful shipping of raspberries presents the same problem as the successful shipping of oranges. Previous experiments in Florida have demonstrated that where oranges are carefully harvested, crops can be marketed with almost no appreciable loss and the same appears to hold true with raspberries.

### Some Significant Results.

In 1911 the government investigators made comparative tests of the keeping qualities of carefully handled raspberries and commercially handled raspberries. Several lots of each kind were held in an ice car for varying periods and then examined for the percentage of decay. Other lots were held a day after being withdrawn from the refrigerator car and then examined. The results are most significant.

After four days in the ice car it was found that the carefully handled berries showed only 0.4 per cent decay, while the commercially handled fruit had 4.6 per cent. After eight days in the car the difference was vastly greater. The carefully handled fruit showed only 2.2 per cent decay, but with the commercially handled this percentage had risen to 26.7, or more than one-fourth of the entire shipment. When the fruit was examined a day after it had been taken out of the ice car, the evidence was equally strong in favor of careful handling. Carefully handled fruit that had remained four days in the car was found a day after its withdrawal to show only one per cent of decay against 17.5 per cent in commercially handled berries. Carefully handled fruit left in the car eight days, and then held one day, showed only 8.1 per cent of decay as against 47.6 per cent in commercially handled fruit.

### Reduced the Loss by Nine-tenths.

The following year experiments were made with actual shipments instead of with the stationary refrigerator car, and the results confirmed previous conclusions. It was found for example, that there was less decay in the carefully handled berries at the end of eight days than in the commercially handled berries at the end of four. Carefully handled fruit that was four days in transit, and had then been held one day after withdrawal from the refrigerator car showed less than one per cent of decay, whereas commercially handled berries subjected to the same test showed nearly 10 per cent.

### Pick with Three Fingers.

The difference between the carefully handled and the commercially handled lots of berries consists chiefly in extra care in picking and in the scrupulous exclusion of any soft, over-ripe berries. Ordinarily the picking is done by unskilled labor, children being frequently employed in this way. It is, of course, extremely difficult to make them realize the necessity for care, but the comparative success of certain growers in keeping down their losses

shows that much improvement in this respect is possible. The most common injuries to the berries are due to their being broken and bruised while being removed from the bushes or being mashed in the hand while picking. If the berries are pulled with three fingers instead of two, and pulled off straight instead of sidewise, much loss can be avoided.

### Keep Out Over-ripe Berries.

Another cause for decay is the inclusion in shipments of over-ripe berries. Because of the danger or injury in sorting it is not possible to grade the berries after they have once been picked and placed in the cups. The pickers, therefore, must be instructed to pick only sound berries. If the patches are picked over once a day it is much easier to enforce this rule. If they are left unpicked two or three days there will be such a large proportion of over-ripe berries that some of them will inevitably find their way into the cups intended for long-distance shipments. A soft berry will not only

soon break down and decay itself but by offering an opportunity for mold to develop will contribute to the decay of the entire cup. This point, the government investigators say, can not be too strongly emphasized.

### Weather Conditions an Important Factor.

With the best of care, however, the weather must remain a very important factor in determining the success of shipments. During wet, rainy periods the berries become soft, very tender, and full of moisture. In this condition they break down readily and are not suitable for long shipments. During protracted periods of wet weather, therefore, picking becomes impracticable and the berries tend to become over-ripe. During 1911, for example, the weather was so sunny that a very large percentage of the berries could have been shipped fresh. In 1912, on the other hand, only half of the crop was shipped fresh and the remainder had to be canned.

Investigations were also made into the value of pre-cooling. The result brought out clearly the fact that pre-cooling is of great service and value to raspberries that are in maximum good condition. The pre-cooling, however, must be done promptly and thoroughly to be of greatest value. It can not, moreover, be depended upon to counteract the bad effects of careless handling. Unless the berries are properly handled and the pre-cooling prompt and complete there is little return from the extra expense.

and were confident that what others were doing at their front door they could do and they are making good.

There is no dodging the well-grounded fact that example is the strongest kind of an argument to lead men on. One may talk until his optics fail and hardly get so much as a square look from those to whom he is appealing, but let him merely point his finger and say "there it is," and his audience is at once all attention, ready with a hundred questions relating to the "hows," "whys" and "whens."

### A Good Teacher.

And, too, example seems to be the best teacher. When a farmer visits one of these co-operative organizations and sees how the work is carried on, talks with the management and the farmers who are delivering their products and discovers that many of the things he thought to be very complex are comparatively simple, he secures a far better working knowledge of the institution than could be obtained from the platform or the printed page. The speaker or writer might introduce him to these new things, but this visitation gets him actually acquainted. He knows something then that will not leave him.

Understanding the value of acting carefully and building firmly, one still feels that the advantages of these organizations might be extended more rapidly and still not endanger the future through failures. Having a knowledge of the benefit of example an effort should be made to see that many communities are inoculated with the idea that these co-operative associations could render a real economic service. It would be a proper and profitable motion for the Grange meeting, the gathering of the Farmers' Clubs, the social betterment organization, or other rural societies, to authorize the appointment of a committee to investigate co-operative associations that may be doing business within a reasonable distance. If two or three live members would spend two or three days where they could see and hear things first-hand they could and would give a report that would awaken the home society from its sleep.

So why not use this power of example to stir up the home community to a knowledge of new things?

## Crop and Market Notes.

### Michigan.

**Lapeer Co., July 7.**—Weather is cool for corn, which is small. Yield of hay on old meadows light, new meadows good. Spring seeding an extra good catch. Wheat fields are splendid. Oats and barley will be an average crop. Beans were planted late and therefore not very large yet. A large acreage of potatoes planted. Apple prospects are poor. Very few peaches and plums. Wool 20@30c; butter 20c; butter-fat 23c; spring pigs \$3 each.

**Livingston Co., July 6.**—Hay will be a light crop, but not much cutting done yet on account of wet weather. Wheat, rye and oats promise bumper crops. New seeding is looking good. Corn has not made very large growth on account of cold weather. Beans are looking fine but will be late. There will be a fair crop of apples, plums and peaches. Wool 30c; wheat \$1.20; beans \$2.60, hand-picked; oats 45c; corn 35c per basket; butter 20c; eggs 16c.

**Hillsdale Co., July 6.**—Farmers are in the midst of haying, having been hindered considerably by wet weather. The hay crop will average better than usual. The first cutting of alfalfa was good, but difficult to get, on account of continued rains. Wheat promises to be a good crop; oats are looking fine; corn is backward; cherries and raspberries are abundant. The peach and plum crops promise to be fairly good. Apples will be a good yield in well cared for orchards. Eggs 16c; butter 20c.

**Branch Co., July 3.**—Haying is just begun and promises good crop. Wheat and rye fair. Oats fine; beans up and most of cabbage planted. Potatoes are good. Corn is rather small. Cherries good crop with fair prospects for other fruits. Butter-fat 27c; corn 73c; oats 45c; potatoes 25@30c; butter 24c; eggs 16c. Have had plenty of rain for a few weeks, but had been rather cold; weather fine now.

### New York.

**Columbia Co., July 5.**—The timothy crop is almost entirely a failure; few

## The Power of Example

**T**HE instinct to copy is by no means dead in the American people. Their reputation for doing old things new ways is well earned and it cannot be denied that they have made many valuable contributions to the world in the way of inventions; nevertheless, they are prone to copy the same as older civilizations. And communities have advanced through this habit of doing what others have done, or in other words, of being moved through example to undertake the introduction of new institutions and methods.

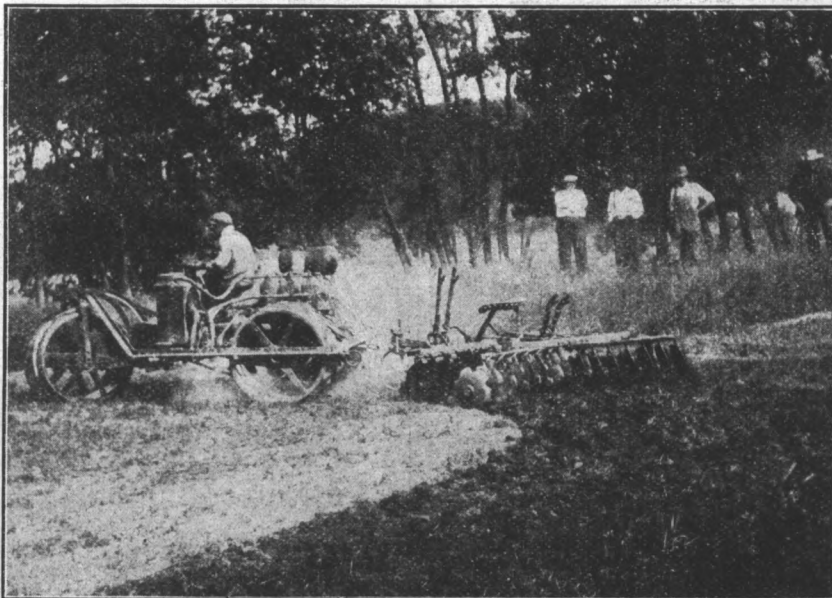
### A Van Buren County Example.

The successful work of the co-operative association at South Haven, Michigan, has been closely watched by other communities near by. The better prices received for fruit and the orderly manner in which the association is able to handle the business for which it was organized, have been impressed upon those living outside the reach of this particular association, but close enough to learn the ins and outs of the organization and management. As a result of these impressions other communities have concluded that they, too, should be served by similar associations, and so we see another successful organization doing

business at Hartford and still another (reorganized on the new plan) at Fennville. Other neighboring communities are seriously considering the matter of organizing and the success attending the work of the associations already operating will be a persistent incentive for these unorganized farmers to attempt the community plan of selling.

### Hillsdale's Method of Propagating Societies.

An even more impressive example of the influence of successful co-operation is that of the creamery at Jonesville, Hillsdale county. The readers of this paper have been informed of the development of the co-operative spirit in this community particular through the writings of Mr. Kaiser, so that they need not be retold of the steps that have led to the organization of a score of community "uplifters" in Hillsdale and Branch counties. But the fact is apparent to everyone acquainted with the growth of this work in that section of Michigan that the parent association at Jonesville is very largely responsible for the new order of things. It was from the success of that institution that the founders of the new organizations got their suggestions and inspiration. They saw



Some Farmers are Increasing their Profits by Reducing Cost of Production.



meadows worth cutting. Very little clover or alfalfa grown here. Corn is late but is now growing well. Rye is good and abundant. Rains have given oats a fine promise. Early potatoes, also beans, will be a good crop. There is a fair crop of apples, pears and plums but no peaches. Milk \$1.40 per cwt; butter 35¢; eggs 28¢.

#### Pennsylvania.

Lancaster Co., July 3.—Hay half a crop. Corn, potatoes and beans are good. Tobacco started nicely. Apple and pear trees seem affected with the blight. Peaches and plums look good. Milk \$1.85 per cwt; butter 35¢; eggs 20¢; cherries 8¢ per quart; corn 87¢; oats 65¢.

#### Ohio.

Columbiana Co., July 6.—Have been having very wet weather for the last two weeks. But little hay has been made thus far; the yield of clover is good, while timothy will be light. Wheat is ready to harvest, but the ground is too soft for the binder; the yield will be fair. Oats have grown an abundance of straw and are heading well. Corn is disappointing, but potatoes are looking good. Prospects are excellent for both early and late apples. Peaches are promising, but pears and plums will furnish a small yield. Wool sold around 30¢; milk 20¢ per gallon; butter-fat 24¢; eggs 20¢.

Fairfield Co., July 4.—The weather has furnished too much rain. On well drained land corn is doing well, elsewhere it is very poor. Wheat has been damaged by storms, rust and the fly. Ground is so wet that binders cannot run. Acreage of oats is small but condition is fine. Rye is good, also beans. Potatoes are very promising. There will be plenty of cherries, early and late peaches and plums. Pears are poor on account of blight. Wheat \$1.15; corn 80¢; oats 55¢; wool 28¢; milk 13¢@14¢ per gallon; butter-fat 23¢; eggs 15¢; chickens, young 18¢; hens 12¢.

#### Indiana.

Noble Co., July 7.—This has been a very cool, wet spring and early summer. All crops are backward. Wheat is harvested. Oats and grass will be good crops. Corn and potatoes need warm weather. Young alfalfa is doing fine. Prospects are good for apples, pears, plums, raspberries and blackberries. A fairly good hay crop is being cared for. But little stock is being marketed except hogs, which bring around \$7.50 per cwt. Butter 23¢; eggs 17¢; lard 12½¢.

#### Wisconsin.

Polk Co., July 6.—Hay is very heavy and cutting has begun. Small grains are looking fine, but corn is backward. Pastures are good; alfalfa seeding is looking fine. Hogs \$6.90; cattle \$6; chickens 10¢; butter 31¢; eggs 17¢.

Wausahara Co., July 5.—Clover hay is being cut and stand is good. Old meadows poor. Rye and oats are promising, but corn is small. Late planted potatoes are coming up nicely. Apple trees are loaded with fruit. Hogs \$6.75@7; eggs 15¢; wool 27¢.

Waukesha Co., July 7.—There is much hay down and the crop is good. Grain is above the average, excepting corn. Both potatoes and apples promise well. Milk is selling at \$1.35 per cwt., and collected by condensory.

#### Minnesota.

Stearns Co., July 5.—With the exception of corn, crops are in good condition. The expected crop is only six inches high now and is the important product of farmers here. Hay is doing fine but ground too wet for cutting. Although rye froze it will probably come along all right. Hogs are being marketed immaturity because farmers fear cholera.

#### NATIONAL CROP REPORT.

The composite condition of all the crops of the United States on July 1 was 2.3 per cent above their ten-year average condition on that date, as compared with a condition 1.6 per cent above average June 1, indicating a slight improvement in crop prospects during the past month. Final yields per acre of crops last year were about 2.3 per cent above average. This year, however, the total acreage in cultivated crops is slightly more than last year.

The growing condition of the various crops on July 1, expressed in percentage of their ten-year averages (not the normal) on July 1 was as follows: Peaches 130.3; oats 112.9; hemp 111.7; barley 111.0; spring wheat 110.8; millet 108.6; apples 107.8; clover 107.5; strawberries 107.2; blackberries 106.2; pasture 105.8; timothy 104.6; hay 104.3; potatoes 104.1; sorghum 103.8; alfalfa 103.6; tobacco 103.5; winter wheat 103.3; cabbages 103.2; onions 103.2; rice 103.1; hops 103.1; kafir 103.0; sweet potatoes 102.8; rye 102.3; sugar beets 102.3; field beans 102.1; broom corn 102.1; tomatoes 101.8; flax 101.5; pears 100.6; cotton 100.5; peanuts 100.0; watermelons 99.6; cantaloupes 99.1; oranges 99.0; grapes 98.3; corn 95.9; sugar cane 90.3.

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## Livestock Profits

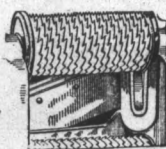
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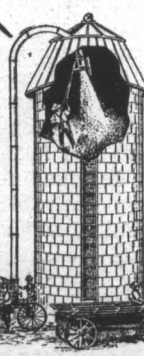
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## CHICKEN MITES.

Prof. A. H. Hunter states that the chicken mite, may be styled "the wolves of the insect parasites of fowls." Instead of feeding upon the body excretions, feathers, etc., of the fowl, as do the lice, the food of mites is blood. It is only when engorged with blood that they are red. Their natural color is a light gray. The mites hide in crevices and under objects in the henhouse during the daytime, while the chickens are outside, and lie in wait for their return. They are worse than lice and for this reason one should do everything in their power to destroy them. They remain upon the fowl only long enough to secure a meal.

The poultry raiser well knows how unpleasant it is to become covered with mites when entering a house to spray any liquid preparation, to say nothing about the hard work. This is no longer necessary as there is an effective and positive way of killing these mites by fumigation which is easy, and not work. These fumigators are sheets of paper, six by eighteen inches, saturated with material that is volatilized when slowly burned. Two fumigators will fumigate a ten by twelve foot henhouse. They are put up in packages of two fumigators for twenty-five cents, five for fifty cents, and twelve for one dollar, and are manufactured and guaranteed by F. A. Thompson & Company, 527 Trombley Avenue, Detroit, Mich.

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Eggs from fine Utility Matings that are bred to lay, \$1.50 per 15, \$4 per 50, \$7 per 100. From best exhibition pens \$10 per 15, \$25 per 50. Prompt delivery and good hatch guaranteed. G. Earl Hoover, R. 7, Matthews, Ind.

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**BARRED ROCKS.** Parks 200-Egg strain. A strain with Egg records to 271 eggs a year. \$1.50 per 15. Delivered by Parcel Post. Fred Astling, Constantine, Mich.

**BARRED ROCK** eggs from Barred Rocks that are barred to the skin, also eggs from S. S. Hamburgs, R. C. White Leghorns, White Runner Ducks, White Holland Turkeys. Circular free. Riverview Farm, R. 8, Vassar, Mich.

**Buff Rocks,** 3 out of 4 firsts Chicago, 1914. Eggs bal. of season \$1.50-15; \$6-100. S. C. Buff Leghorn eggs \$1-15; \$5-100. Pen of 12 Buff Leghorns \$10. 20 Buff Rock Hens, 75 cents to \$2.50, including Chicago and Minneapolis first prize winners. Bird Lawn Farm, Lawrence, Mich.

## Half Price from Now On

Eggs from some of the best Barred and White Rocks in Michigan. \$1.50 per 15. Heavy laying strains. Riverview Poultry Farm, Box 798, Union, City, Mich.

**L**ATE SEASON PRICES on R. C. and S. C. Rhode Island Red eggs from fine stock, \$1 per 15, delivered at your door by insured parcel post. JENNIE BUELL, Ann Arbor, Michigan.

**Pine Crest White Orpingtons**—bargains in stock—eggs half price through June. Belgian hares and Collie puppies. MRS. WILLIS BOUGH, Pine Crest Farm, Royal Oak, Mich.

**RINGLET BARRED ROCKS**—the winning and laying strain. Eggs \$1.50 per 15, from mated pens also M. B. Turkey eggs from choice birds, \$2.50 per 10. Charges prepaid by parcel post. PLAINVIEW STOCK FARM, Romeo, Michigan.

**RHODE ISLAND REDS and PLYMOUTH ROCKS.** Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 9½ lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 18 lbs. according to age \$3 to \$25, 10 eggs \$5. A. E. Cramp ton, Vassar, Mich.

**ROSE COMB BROWN LEGHORN EGGS** from Mad. Eq. winners, \$1.00 per setting, \$5.00 per 100. M. Pekin ducks \$1.00 per setting. CLAUDIA BETTS, Hillsdale, Michigan.

**S. C. White Leghorns,** ling hens for sale. Also young white Pekin breeding ducks and drakes. Write for prices. Sunnybrook Poultry Farm, R. 3, Hillsdale, Mich.

**S. C. W. Leghorns**—Strong day-old last hatch July 22-23. Choice hens, reasonable prices. EVERFRESH EGG FARM, Ionia, Michigan.

**SILVER Laced Golden and White Wyandotte Eggs** for hatching. Ten cents each or 30 for \$2.50. I pay parcel post charges. C. W. BROWNING, Portland, Michigan.

**White Leghorns Day-Old-Chicks.** Write for circular. We guarantee satisfaction to all our customers. MAPLE CITY POULTRY PLANT, Box C, Charlotte, Michigan.

**White Wyandotte Eggs**—50c for 15, \$4.00 for 100. My two best pens \$2.00 for 15, \$3.75 for 30. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

**WHITE WYANDOTTE EGGS HALF PRICE NOW** HOWARD GRANT, Marshall, Michigan.

**W**HITTAKER'S Red Chicks, both combs, \$10 and \$12 per 100. Hen \$12 per doz. The most popular Red in Michigan. Interlakes Farm, Box 39, Lawrence, Mich.

**White P. Rocks.** Pekin and white runner ducks, White guineas, eggs and day old ducks and chicks. H. V. HOSTETLER, St. Johns, Michigan.

**W**HITE Orpington Cockerels. S. C. Kellerstrass 8-wk. 4 or more, 75c each, single \$1. 8-wks. pens cheap. Yearling hens and cks. Eggs ½ price. M. E. Thompson, Redford, Mich.

## DOGS.

**Trained Running Fox Hounds**—30 Fox and Coon hound pups, Poodles, Send stamp. W. E. LECKY, Holmesville, Ohio.

**FOX, COON AND RABBIT HOUNDS** Broke to gun and field. Prices right. Fox and Coon hound pups \$5 each. Stamp for reply. H. C. LITTLE, Fredericksburg, Ohio.

## AGENTS WANTED

to represent a reliable concern canvassing among farmers in your own neighborhood or elsewhere. No experience necessary. Liberal pay, and supplies furnished free to right parties. Reference required. Address,

ADVERTISER, CARE THE MICHIGAN FARMER, Detroit, Michigan

## A Convenient Hen House

**P**EOPLE who raise chickens should have a comfortable house in which to shelter them. It need not be expensive, but in whatever style it may be built, two things are absolutely essential, and without which success can not be expected. The building must be wind-proof, and water-proof. The sides must be tight enough to keep out the wind, and the roof tight enough to keep out the rain and snow.

Our henhouse is 10x16 feet and is eight feet high to the plates, with a ridge roof. A ridge roof costs but a little more than a shed-roof, and looks much better. It is shingled with pine shingles, weather boarded with inch boards nailed to the sills and plates vertically, and the cracks battened. It has a latticed cupola on the roof for ventilation. The floor is made with inch boards planed, so as to be swept easier. The outside door is in the gable end opposite the prevailing wind which at our place comes from the northwest. There is a 12-light glass window to the left of the door, and another in the opposite gable. There are two apartments—one for the feeding and nesting room, and the other for the roost-room, with a door between. The perches are all at the same height from the floor to prevent quarreling over the highest seats in the synagogue. There is a hen ladder leading to the perches so they can travel up instead of flying, and making a great dust. On the southeast side the roof projects two and a half feet beyond the plate, in order to cover the rows of nest boxes which are on the outside. A row of nest boxes extends clear across the side (16 feet) and the boxes are separated from each other by partitions. The nest boxes are covered with hinged lids—one for each box. Eggs do not freeze in these boxes any quicker than in the house. The advantage of this arrangement is that the eggs can be gathered from the outside without disturbing the hen that may be laying in the nest box, or preparing to go on a nest. Hens love privacy, and this arrangement by which each one is hidden from the other gives them the privacy they like. Having plenty of secluded nests they are not so apt to lay together three or four in the same nest, and then fight for its possession when they want to sit.

## Hens Like Privacy.

By sliding a stopper over the inside opening, a sitting hen can be protected against intruders that want to lay. The sitting hen can be given air by fastening the box lid up a little, and in a few days the intruders will give up trying to molest her, and the slide can be removed so that the hen can come off when she wants to. On the inside of the house there is a shelf for the hens to walk on, and an opening through the outside boarding for entrance to the nest boxes.

The perches are not nailed fast, and can be taken down and scrubbed with hot lime water to kill the lice. Twice a year the whole inside of the house is scrubbed with the hot lime water with some disinfectant added.

Authorities are not agreed in regard to the amount of floor space necessary for each fowl. My opinion is that four feet is none too much. Our house is designed for 40 or 50 fowls. If it was desirable to keep 80 or 100, I would build an addition at the north gable, exactly like the present building. Our hens are seldom confined. In stormy weather they stay under shelter of their own accord. They are allowed free range. We have a picket fence around the garden that keeps them out, and they never visit the grain fields. They are healthier, and happier, and lay better by spending the day in fresh air, and having abundant exercise. Besides this, they eat

a good deal of grass, and pick up worms, and bugs, thereby getting half their living in the summer on healthier food than when in confinement. Pennsylvania. J. W. INGHAM.

## POINTS ON BUILDING POULTRY HOUSES.

The poultry-house should be built during the warm months for the reason that the hot summer weather will quickly dissipate any moisture the lumber contains.

The best location for a poultry-house is one having a southern exposure, with higher ground to the north and west, to protect the house and runs from cold winds. If a southern exposure cannot be had, an eastern one is the next best choice.

The soil under, and in the immediate vicinity of the poultry-house should be sandy, or of a mixture of sand and gravel. Heavy soil drains poorly and soon becomes foul and unsafe. If the soil retains moisture, a few loads of sand mixed with the top soil will improve it.

An economy in building material is effected by building a house as nearly square as possible, though, of course, in building large houses this is not possible. The house should not be so wide but that the sun's rays can penetrate the farthestmost side some time during the day.

The house should be just high enough for the attendant to work in in comfort. A high house not only calls for a waste of building material, but is a cold house.

The porches, nests, and all inside fixtures, should be made movable. If these are built stationary, strict cleanliness and sanitation is impossible, for the reason that lice and vermin will infest the cracks and crevices and the spraying material will not be able to reach all of them.

The poultry-house floor, whether of concrete, wood or earth, should be raised at least a foot above the soil on the outside of the house. If this is not done, the house will likely be damp, and dampness is fatal to poultry. If a dirt floor is desired, the house should rest on a solid brick or concrete foundation that goes ten inches or a foot under the ground. Unless this is done rats will likely work under the building and infest the house.

If a concrete floor is desired, the ce-

by leaving a portion of this side open and covering the openings with muslin.

Indiana.

T. Z. RICHEY.

## PROVIDE SHADE FOR POULTRY.

Failure to provide shade for poultry during the summer months not only results in a large number of deaths, but the flocks are less productive. The importance of summer shade cannot be over-estimated. Poultry of all kinds require shade. Ducks and geese very quickly succumb if they are unable to get protection from the sun's rays. It is easy to provide plenty of shade. The following ways of furnishing shade for poultry are recommended: Portable houses can be set up on blocks so that the birds may run underneath; orchards, sunflower patches, corn fields, etc., can be so arranged that the young stock or mature hens may run in them. Corn fields make excellent summer range for young stock. They furnish plenty of shade and other conditions for rapid economical growth are ideal. A little planning on the part of the farmer will make poultry keeping more profitable. By providing shade the losses are reduced, the flock is more productive and the young stock will make more economical growth.

Missouri.

H. L. KEMPSTER.

## AN UNCOMMON CHICK DISEASE.

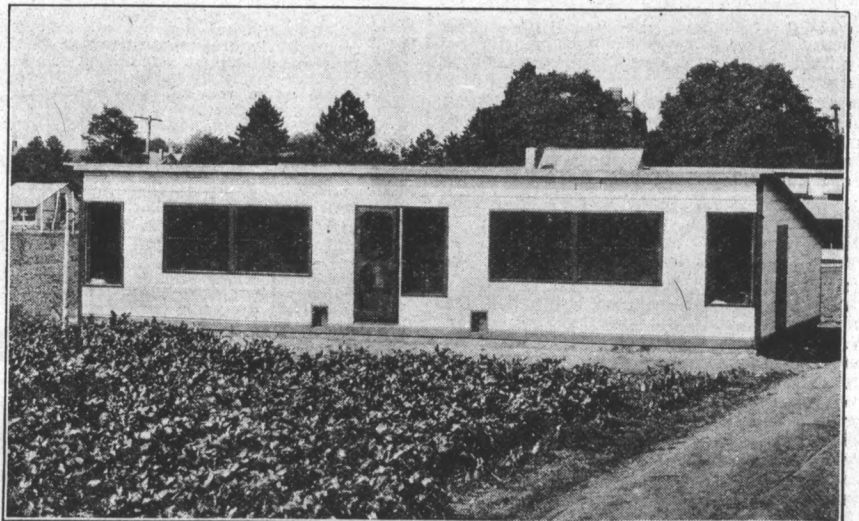
I would like to know what to do for my little chicks; they seem to get bunches in back of their ears and die. I have lost quite a few that way. Lenawee Co. W. S.

The disease your chicks are troubled with is an uncommon one and has the unpronounceable name of "Emphysema."

In this disease the skin puffs out in the sides of the neck near its juncture with the body. The size of the puff varies somewhat; sometimes it is the size of a hickory nut, and in a few cases it has been reported that the puffing covered nearly the entire body and the skin of the chick became so inflated that locomotion becomes difficult.

The trouble generally occurs with chicks which have been confined in close quarters, and is often associated with some lung trouble. It is supposed to be due to the rupture of some of the air sacs, the air thus escaping into the tissues beneath the skin.

The treatment suggested is to puncture the skin with a needle and to give two grains of nitrate of iron to



The Open-front Poultry House is Gaining in Popularity.

ment mixture should be laid on a bed of coal cinders. The cinders will absorb the moisture that works up through the soil. Concrete floors are cold and hard and for this reason should be covered with an inch or two of sand or finely-pulverized garden soil.

The poultry-house should be built draught-proof. The north, east and west sides should be absolutely tight. Ventilation should come from the south side and is best accomplished

each wine glass of drinking water. While the above treatment may be of value, it is generally recommended that no effort be made to treat the chicks, for even if they are cured of the trouble, they rarely develop satisfactorily.

In experiments at New Jersey Experiment Station the wet mash produced faster gains in ducks than the dry mash, but during the first two weeks the gain was offset by a higher mortality.



## BREEDERS' DIRECTORY.

## CATTLE.

## ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900.  
TROYAN-ETICAS and BLACKBIRDS only. A few young bulls and cows for sale. Also breeders of Percheron, Hackney and Saddle Horses.  
WOODCOTE STOCK FARM, Ionia, Mich.

**AYRSHIRES**—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels, Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

THE VILLAGE FARM,  
Grass Lake, Michigan,  
GUERNSEY CATTLE.

MILO D. CAMPBELL CHAS. J. ANGEVINE

**BEACH FARM  
GUERNSEYS**

Combine the blood of the following great producing sires and dams:—

|                        |                    |
|------------------------|--------------------|
| Masher Sequel          | 57 A. R. Daughters |
| Galexy's Sequel        | 37 A. R. "         |
| Glenwood Boy of Haddon | 26 A. R. "         |
| May Rose King          | 21 A. R. "         |
| Dairymaid of Pinehurst | 910 lbs. fat       |
| Dolly Bloom            | 836 "              |
| Imp. Ichen Daisy       | 714 "              |
| Selma of Pinehurst     | 762 "              |
| Stanford's Princess    | 725 "              |

Bulls for sale only.

**A Dairy Show Every Day.**

CAMPBELL & ANGEVINE, Coldwater, Mich.

**A GUERNSEY BARGAIN.** Two bred heifers. Two mature cows (one fresh). One bull ready for service. A. R. breeding. G. A. WIGENT, Watervliet, Mich.

**REGISTERED GUERNSEY BULL CALVES** for sale cheap at Windermere Farm, Watervliet, Mich. May Rose breeding. Address, J. K. BLANCHFORD, Auditorium Tower, Chicago, Ill.

**For Sale—Reg. Guernsey Cattle and BERKSHIRE SWINE** either sex. JOHN EBELS, R. 10, Holland, Michigan.

**GUERNSEYS—REGISTERED BULL CALVES** Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S., Mich.

**GUERNSEYS**—Write for prices and particulars. 2 bulls 1 year old. Several bull calves, all from A. R. cows and cows on test. Geo. N. Crawford, Holton, Mich.

**GUERNSEY BULLS FOR SALE**, ready for service from A. R. Dams. If you want the right kind write for price and breeding. BYERS & BARNES BROS., Coldwater, Michigan.

**S**ON of Traverse Johanna Buckeye Dekol, born Feb. 14, also grade cows and 2 carstockers—going out of business—at Marks, J. R. HOOD, R. 2, Tawas City.

**HEREFORDS;** calves for sale. Big fellows. ALLEN BROS., Paw Paw, Michigan.

**Do You Want A Bull?**  
Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 65% fat daughter of Pontiac Aggie Korndyke and her more than 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

**Espanore Farm,**  
LANSING, MICHIGAN.

Offers for sale the bull calf Espanore Dichter Fobes, born April 19, 1915. Sired by one of the great bulls of the country and out of a cow with a good A. R. O. record and a sister to a 35.9 lb. cow. Price for quick sale \$100.

CHASE S. OSBORN, } Owners.  
ADAM E. FERGUSON, }

**1 4-YEAR-OLD BULL**

by a 31-lb. son of Pontiac Korndyke, and out of 27-lb. dam. 2 two-year-old and three yearling bulls. The above bulls have breeding and individuality to spare. Also a few richly bred bull calves. These will be priced right. This is a chance to get a valuable bull for little money. Get busy, as this ad. will appear but twice.

L. E. CONNELL, Fayette, Ohio.

**The Two Greatest Bulls**

KING OF THE PONTIACS  
DE KOL 2d's BUTTER BOY 3rd

I have young bulls from cows having high official records and Granddaughters of above bulls. Stock extra good. Prices reasonable.

**BIGELOW'S HOLSTEIN FARMS,**  
BREEDSVILLE, MICH.

**HOLSTEIN FRIESIANS**

Herd sire Maplecrest Korndyke Hengerveld, the only sire of any breed having a dam and grand dam that each made more than 1200 lbs. of butter in a year, and he was sired by the only bull of any breed that sired three cows each making better than 1200 lbs. butter in a year, one but four years old. Maplecrest Korndyke Hengerveld is in a class by himself.

A few fine young bulls sired by him from A. R. O. cows for sale; also a few choice females in calf to him for sale.

D. D. AITKEN, FLINT, MICH.

**REGISTERED Holsteins**—Herd headed by Albma Bonte Butter Boy. His dam has A. R. O. records as follows: at 2 yrs. milk 430; butter 18.85; 4 yrs. milk 604.5; butter 27.03; at 6 yrs. milk 620; butter 28.55 lbs. W. B. READER, Howell, Mich.

**\$100** Get 5 mo. 1/4 white grandson of Friend Hengerveld De Kol & Maplecrest Pontiac Flora Hartog, 30 lbs. butter 7 days, 1283 lbs. in 1 yr. M. L. McLAULIN, Redford, Mich.

**JULY 28 | MUMFORD'S DUROC SALE | JULY 28**  
**Brookwater Farm, Ann Arbor, Mich.**  
**50 Head, Including Bred Sows and Gilts. Herd Boars and Spring Pigs**

This offering is fully up to the high standard established in our former sales. The offering is bred to or sired by prize winning boars at the Michigan State Fair. This will be an unusual opportunity to buy choice Durocs. You cannot afford to miss it. Send for our catalog and plan to spend July 28 profitably at

**JULY 28 | BROOKWATER FARM, | JULY 28**  
R. F. D. 7, ANN ARBOR, MICHIGAN

**FOR SALE—REGISTERED HOLSTEIN BULL** born Feb. 26, 1915. Mostly white, Dam has A. R. O. record, also Chester White Pigs. CHARLES I. COOK, Box 438, Fowlerville, Michigan.

**REQ. HOLSTEIN BULL CALVES** good A. R. O. breeding, and plenty of 30-lb. blood in their pedigrees. Dewey C. Pierson, Hadley, Mich.

**REGISTERED HOLSTEIN BULL**, 4 months old. Very large straight handsome fellow. Just one of the nicest individuals you ever saw, and he is bred some too. \$50 delivered. Write for photo and pedigree. HOBART W. FAY, Mason, Michigan.

**TWO** well-bred Holstein bulls, 8 and 16 mos. old, from A. R. O. dams, \$50 each. Also splendid brown gelding, 14 mos. old. Mrs. Fred Orndal, Howell, Michigan.

**High Class HOLSTEINS** My head by Smithdale Alcatraz Pontiac, whose dam is the famous Alcatraz Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred, Farm 1/4 mile from court house. SETH B. HUBERT, Howell, Mich.

**MAPLECREST De Kol Hengerveld**, an own brother to a World's Champion heads our herd. Choice Bull Calves for sale, or will exchange for registered heifers or cows. HILLCREST FARM, Kalamazoo, Mich.

**FOR SALE Registered Holstein Bulls** ready for service, and bull calves, also females. FREEMAN J. FISBECK, Howell, Michigan.

**HOLSTEIN BULL CALVES**—Don't buy until you write to a World's Champion heads our herd. No better breeding in Michigan. Long Beach Farm, Augusta, Kalamazoo Co., Mich.

**HOLSTEIN CATTLE** and Duroc Jersey Swine. Choice pigs of both sex now ready to ship. Prices reasonable. E. R. CORNELL, Howell, Michigan.

**\$40.00 DELIVERED** Handsome Holstein bull calf, half black. Registered and all papers. A. R. O. Sire and Dam. ROUGEMONT FARMS, Detroit, Michigan.

**MICHIGAN HOME AND TRAINING SCHOOL** LAPEER, MICHIGAN Breeder of High Grade Holstein Cattle. Lists and prices upon application.

**HOLSTEIN CATTLE and O. I. C. SWINE** ELMER E. SMITH, Redford, Michigan.

**NIXON FARMS**  
Brooklyn, Mich.

Have Some Registered Jerseys For Sale.

**Maple Lane Register of Merit Jersey Herd.** Tuberculin tested. Majest's Wonder No. 9717 heads the herd. Bull calves for sale, also a two-year-old bull that is right. For prices and description write or come. ALVIN BALDEN, Capac, St. Clair Co., Michigan.

**THE WILDWOOD JERSEY HERD** Registered Jersey Cattle of Quality. Tuberculin tested. Majest's Wonder No. 9717 heads the herd. Bull calves for sale, also a two-year-old bull that is right. For prices and description write or come. ALVIN BALDEN, Capac, St. Clair Co., Michigan.

**Lillie Farmstead Jersey Cattle.** Bull calves from R. L. of M. Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich.

**J Jerseys.** Bulls ready for service, extra quality sired by Jacoba's Fairy Emanon, No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

**JERSEYS—THE REGISTER OF MERIT KIND.** BROOKWATER FARM, R. No. 7, Ann Arbor, Mich.

**Jersey Bulls for Sale** from high-producing dams, with testing Assoc. records, also on semi-official test. C. B. Welner, R. 6, Allegan, Mich.

**FISHERTON FARM JERSEYS**—Some fine grandsons of the famous Jersey King. From Register of Merit dams. FISHERTON FARM, Pontiac, Michigan.

**FOR SALE—A JERSEY BULL** eligible to registry, nineteen months old. Financial King blood. E. R. Fitch, Watervliet, Mich.

**For Sale Registered Jersey Bull.** Toronas Lad, No. 9739; 4 yrs. old, from N. O. Coleman's herd, Shelbyville, Kentucky. C. Mortensen, Juhl Jersey Farm, Sandusky, Mich.

**BIDWELL SHORTHORNS**

For "Beef and Milk" Registered Bulls, Cows and heifers Scotch-topped roans, reds and whites for sale. Farm at L. S. & M. S. Depot, also D. T. & I. R. Y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

**Shorthorns For Sale,** farm 1/4 mile east of Davis, crossing on A. A. R. R. W. B. McQUILLAN, Chilson, Liv. Co., Michigan.

**MILKING SHORTHORNS**—Young bulls sired by a Grand May & Otis bull for sale. DAVIDSON & HALL, Tecumseh, Michigan.

**Shorthorn Cattle of both Sex for Sale** W. W. KNAPP, Howell, Michigan.

**Shorthorns**—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum, Secy. Cent. Mich. Shorthorn Breeders' Assn., McBride, Mich.

**Dairy Bred Shorthorns** of best Bates Strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

**HOGS.**

**Durocs & Victorias**—Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

**REGISTERED BERKSHIRE SOWS** to farrow soon at \$20 each. B. B. REAVEY, Akron, Michigan.

**FOR SALE**—Berkshire hogs, both sexes and different ages. Bred gilts for fall farrowing. Poll Angus Bull Calf, not registered. Price right. Chase's Stock Farm, R. 1, Marlette, Mich.

**Royalton Bred Berkshires**—Boar pigs ready to ship weeks age with registry papers. Write for pedigree and prices. D. F. VALENTINE, Supt., Temperance, Mich.

**HAMPSHIRE Swine**—Breeding stock of all ages from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 9, Decatur, Ind.

**WEST WINDS HAMPSHIRE SWINE.** Booking orders for sow pigs immediate shipment. No males to offer. E. P. Hammond, owner, N. A. Wiser, manager, Pontiac, Mich.

**HAMPSHIRE SWINE,** the kind that wears the belt. Not a pig left for sale but a few pigs. S. C. MORT, Elsie, Michigan.

**WOULD** like to hear from those desiring to start a herd of thoroughbred Chester. Prices attractive. F. W. ALEXANDER, Vassar, Michigan.

**Big Type, O. I. C's and Chester White Swine.**

400 fall pigs either sex, special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig, all our stock is good enough that I will ship O. I. C. D. and reg. free in the O. I. C. or Chester White Assn. We won't, more prizes than all other breeders put together, at Ill., and Wis. State Fairs. Write for Show record.

**ROLLING VIEW STOCK FARM** Cass City, Michigan.

**O. I. C. PIGS** of March and April farrow and Red Polled Bulls. Write JOHN BERNER & SON, R. 4, Grand Ledge, Mich.

**JEWETT'S REGISTERED O. I. C.'s** Blue Ribbon. Growthy type. Photos. J. Carl Jewett, Mason, Mich.

**O. I. C's**—Sows bred to farrow last of June and July. Prices reasonable. G. P. ANDREWS, Danville, Michigan.

**O. I. C.**—Gilts bred for Aug. and Sept. farrow. Will take orders for March and April pigs. H. W. MANN, Danville, Michigan.

**O. I. C's**—Spring pigs, pairs and trios, not akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Mich.

**O. I. C.'s—STRICTLY BIG TYPE** Gilts bred for Sept. farrow and March pigs now ready to ship. Extra good ones at prices that will move them. Pairs not akin. I will be pleased to ship them O. I. C. D. and record them free in purchaser's name. NEWMAN'S STOCK FARM R. No. 1, Marlette, Mich.

**O. I. C. SWINE**—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept.? If you are, write me, I have them. A. J. GORDEN, R. No. 2, Dorr, Michigan.

**O. I. C's**—Two good boars 12 months old, good last fall pigs, either sex, and this spring boars. 1/4 mile west of depot. OTTO B. SCHULZE, Nashville, Michigan.

**O. I. C's**—Service boars, gilts, sows, spring pigs—none better. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

**O. I. C. Pigs, 8 to 10 Weeks Old \$10.** Pairs not akin \$18. Registered free. C. J. Thompson, Rockford, Mich.

**O. I. C.** Choice Sept. pigs, either sex. Will take orders for March, April and May pigs, not akin. ALVIN V. HATT, Grass Lake, Mich.

**Way Brothers Stock Farm.** The home of the big bone O. I. C. Hogs. Stock for sale. Registered free. J. R. Way, Pomper, Mich.

**DUROC JERSEYS**—A few fall boars and 12 bred gilts for sale. CAREY U. EDMONDS, Hastings, Michigan.

**FOR SALE**—Fancy bred gilts, fall males, spring pigs, of the large, smooth kind. Price to sell. JOHN McNICOLL, Station A, R. 4, Bay City, Mich.

**Canitol Herd Duroc Jersey Swine.** Established 1888. Spring pigs for sale, satisfaction guaranteed. Express prepaid. J. H. Banghart, East Lansing, Mich.

**BIG BONE DUROCS.** My herd is not the largest but the stock is good. M. A. BRAY, Okemos, (Ingham Co.), Michigan.

**DUROC JERSEYS**—Spring pigs either sex. Gilts bred for Sept. farrow to a son of Volunteer Grand Champion at Intern'l Stock Show Chicago. F. J. Drott, R. 1, Monroe, Mich.

**DUROC Jersey bred gilts,** bred for Aug. and Sept. farrow from leading blood lines; also a few good boars. Write for circular and prices. W. C. Taylor, Milan, Mich.

**Duroc Jersey**—March pigs either sex, sired by a son of Volunteer Champion of 3 State Fairs and Chicago Show in 1912. E. H. Morris, Monroe, Mich.

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

**IONIA GIRL**

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

**MY OH MY!**  
**What an Opportunity.**

Starting May 1st, we are going to give to the farmers and breeders an opportunity to get started right in the breeding industry. We are going to give you a chance to get hold of foundation stock that will give you a nucleus for one of the finest and best herds in your community. We are going to show you as we have others, that you will have greater success with our big type

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## RELATION OF CHEMISTRY TO AGRICULTURE.

No. 3.

BY FLOYD W. ROBISON.

## The Tripod of Agriculture.

We have become more or less familiar through the researches of chemistry in general with the elements called upon in agriculture. Out of something over seventy elements in nature comparatively few of them have been found to be essential in the growing of crops. Of these few a still smaller number, three or four, chemical research has shown to be exceedingly vital to the growing of crops. Three of these, nitrogen, phosphoric acid and potash, have been found to be of such extreme importance that they have been named "the tripod of agriculture." Modern research has shown that the vital relationship of these three agents has been somewhat overestimated and yet they are the ones which seem to exercise the greatest influence for good or ill in a soil; at least, experimental data shows that crops respond and soils are enervated most extensively by a liberal application in the form of manures of materials containing in available form some one or all of these three administrative agents.

## Uniformity in Concentration is the Desired End of Manuring.

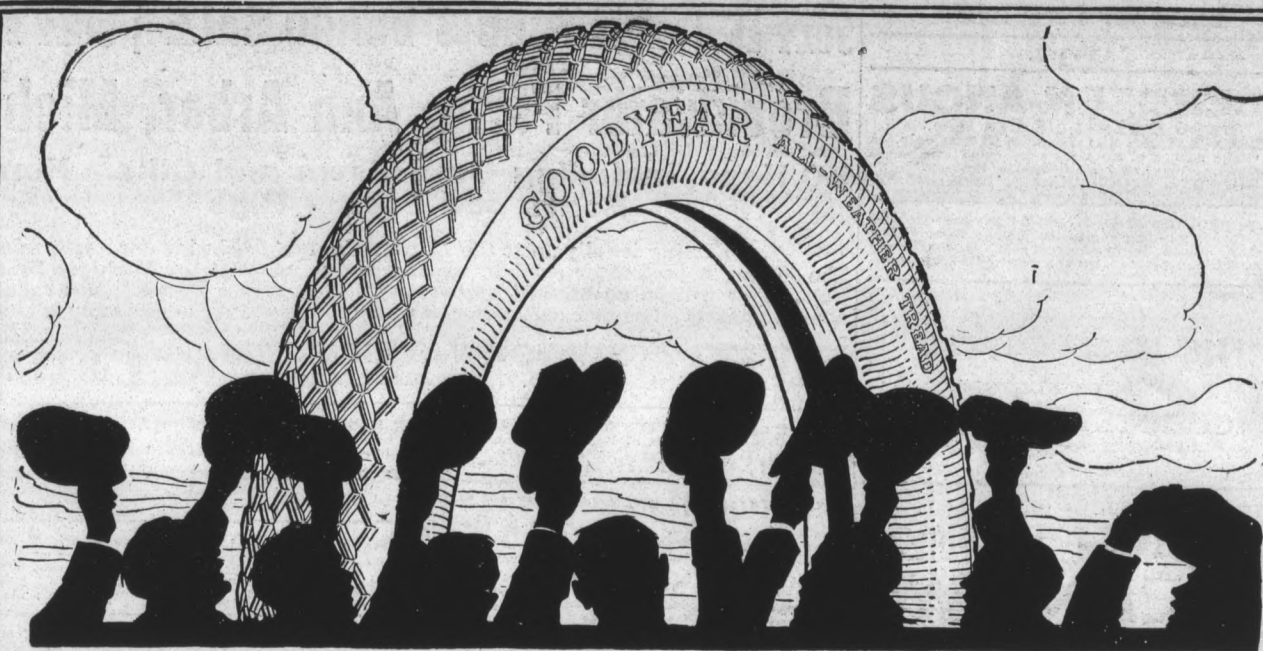
Some experimentists have attempted to show from analytical data that there was really sufficient of these three ingredients in the soil to last not only beyond the bounds of an ordinary man's life but as well throughout such an extensive period as would warrant giving little concern to its replenishment by any one generation. Offset against this data we know what effect on the production of a maximum crop exceedingly small applications in available form of these three elements makes, and it is this information which has led chemists to appreciate that it is not so much the total amount of nutrient salts in the soil that is essential to intensive agriculture as the maintaining of a more or less constant concentration of these salts in the soil water.

## In the Liberal Application of Manures Lies Maximum Crop Production.

The difference, in actual amounts of these three constituents in a soil that is exceedingly productive and in one which is considered practically non-productive, is very slight. But it is through this exceedingly slight difference that profitable agriculture is sustained and the science of the application of manures and fertilizers does not consist in the equipping of a soil which is entirely deficient in administrative agents but rather in the liberal application of manures to preserve this delicate balance which is so essential to profitable agriculture.

## Lime a Potentially Essential Agent.

Lime likewise has been discussed pro and con by various experimenters for many years. Some have maintained that it was exceedingly valuable and should be added in all types of fertilizers. Others have maintained that lime was not an essential ingredient to be added with manures. Much of the difference between the findings of these two ideas has been caused undoubtedly by a lack of appreciation of the type of soil on which lime should be used. One soil may respond to the application of lime and one immediately adjacent to it may seemingly be but slightly benefited. It is this individuality in soils which makes complex a general diagnosis, in fact makes such a diagnosis impossible; but it is also this same miscellaneous character of soils which has made scientific investigation of such extreme importance. We know now something of the type of soils which are benefited by an application of lime and on a soil which is benefited and which exhibits its benefit in increased crop production it is folly to assume or to attempt to argue that such a condition is not desirable.



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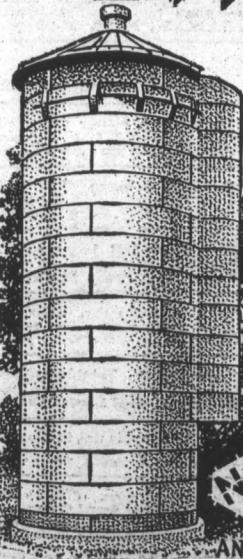
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