

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

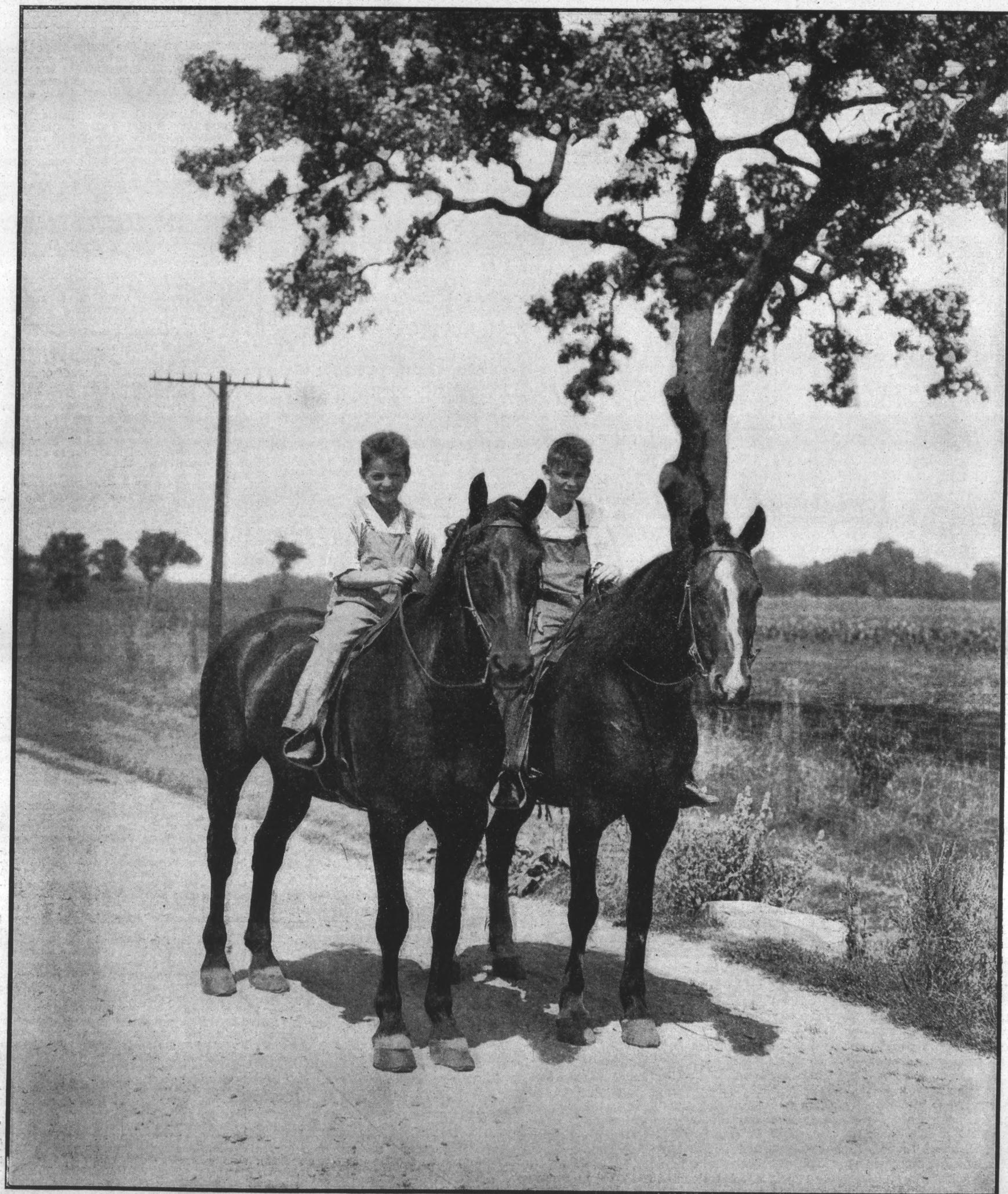
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DETROIT, OCTOBER 2, 1915

CURRENT COMMENT.

The Anthracnose and bacterial bean blight Problem. are two fungous diseases of beans which have given Michigan bean growers much trouble in recent years. The problem of avoiding serious losses from the effects of these diseases has been considerably increased this year because of the prevalence of weather conditions which favored the growth of fungi. With a more general prevalence of these diseases, an increased pick in this year's bean crop is certain.

The problem is further complicated by a new ruling on the part of federal officials who are charged with the enforcement of the national pure food law, a ruling having been made against the inter-state shipment or sale of beans affected with anthracnose. From information at hand it appears that no specific definition has been laid down as to beans which will be condemned by federal inspectors under this ruling. Owing to the importance of such a move on the eve of the marketing of Michigan's bean crop, which comprises more than 70 per cent of the total white bean product of the country, steps are now being taken by the organization of bean growers, co-operating with the bean jobbers' association and the bean canners, to get a definite standard of purity or freedom from anthracnose, upon compliance with which beans will pass inspection for shipment, sale or canning purposes. It was determined at a meeting of representatives of the interests above mentioned to constitute the governor of the state and the state dairy and food commissioner a special committee to take this matter up with the department at Washington with a view of getting this phase of the anthracnose problem solved in a manner which will avoid complications or losses in the marketing and handling of this year's Michigan bean crop.

Action in this important matter is the first official move of the newly organized Michigan Bean Growers' Association, and illustrates the benefits of organization among any class of producers which enables them to deal with unexpected problems in a far more satisfactory manner than individual growers could deal with them if no such organization were in existence. There is no doubt that, under the circumstances, this difficulty will be ironed out in a manner which will give adequate protection to consumers without injustice to either producers or handlers of beans. In any event, the adoption of a fixed standard will tend to eliminate any injustice which would arise under an indefinite and

haphazard method of inspection and condemnation of infected beans. The essential point is that it is impossible even by the most painstaking of hand picking to remove all of the beans affected with anthracnose from any sample.

It has not been demonstrated and, so far as we know, is not claimed that beans affected with anthracnose are deleterious to health when used as food. The argument of appearance may be conceded. From the standpoint of the consumer, the making of a rigid standard of inspection would be a greater hardship than to the grower in a season like the present, provided the standard is one with which the grower can comply, since the elimination of practically all affected beans from the marketing of an unusually short crop will tend to further raise values, which all concerned agree will in any event be high during the current marketing year.

Michigan's two big fairs have added a worthy chapter to Michigan's agricultural history. From an agricultural point of view both the State Fair at Detroit and the West Michigan Fair at Grand Rapids were of greater interest than any similar events in recent years, if not in the history of the two organizations under whose auspices these expositions were held.

From the descriptions which have been previously published, including the live stock awards which are concluded in this issue, the scope of the State Fair has been fairly well described to Michigan Farmer readers who were unable to attend. The West Michigan Fair which was held in Grand Rapids last week, was a much stronger show than that of last year. The live stock show was good in nearly all departments; the horse show was excellent, the cattle show was good, being particularly strong in dairy cattle, while the hog show was fairly representative of Michigan's pure-bred hog industry, and there was a fair showing of sheep, although this show was not as large as those in the other departments. The poultry show was good, while the show of fruit and agricultural products was excellent, the later date at which this fair was held, as well as its location in Michigan's fruit belt, together with the liberal special prizes offered for individual exhibits bringing out a most excellent show in these lines. The farm machinery show was larger than usual, extending well over into the new territory recently added to the fair grounds. The weather was ideal, which is very essential for the success of a one week fair, and the attendance was all that the management could desire.

The success of this fair is a matter for congratulation to the management and the people of western Michigan, as the success of the State Fair was for the state agricultural society and the people of the entire state. Reports from the larger district and county fairs which have occurred and are this week being held in many sections of the state, indicate that like interest is being taken in these smaller fairs, although here, of course, the social element enters, as it does not in the larger fairs. Altogether the interest which is being taken in Michigan agricultural fairs by the farmers of the state promises well for the progressive future of the state's agriculture.

Gravel and Dirt Roads. The improvement of the country roads of the state has been more marked during the past year than during any year since the enactment of the new highway law. A very considerable mileage of county road has been constructed and not a little township road has been built in accordance with the specifications of the state highway department laid down as a requisite for

state reward. Most of this road is of noticeably superior construction to that built in previous years, showing that the experience gained in the building of this type of road has been of cumulative value in the betterment of our highways.

One criticism which might fairly be made is that gravel roads built in previous years have, in some cases, been neglected to the detriment of the roadway. Just a little labor spent in maintenance in the way of filling up little holes which have in spots formed in the road bed, and the repairing of road banks where small washouts have occurred would add very materially to the life and service of these roads. This would appear to be one of the needed lessons which the road officials of all counties and townships have not yet thoroughly learned.

Considerable improvement has also been made in the common dirt roads in many sections of the state, although work on many of them has been delayed until too late in the season to be of the greatest permanent value. The progress in the betterment of the country highways in which a larger number of farmers are interested than in the trunk lines is, however, encouraging, particularly when it is considered that the past season has been one of the worst in many years from the standpoint of road maintenance.

Educational Influence of Fairs. In watching the crowds at the big agricultural fairs which have recently occurred in this state, even the casual observer could not but be impressed with the interest which the farmers from all sections of the state exhibited in new developments along any line pertaining to their own business, particularly as related to farm equipment.

Whether one saw them in the machinery exhibit thoughtfully inspecting the new implements which they had opportunity of looking over carefully for the first time, in the open field where the tractor demonstrations were being conducted and where the comparative points of excellence of the various types of tractors were being carefully noted, in the transportation exhibits where automobiles and auto trucks were being looked over with a view to determining the adaptability of the various makes to their special needs, in the live stock department or in the fruit or agricultural products exhibit it was everywhere the same, whether singly or in groups the closest attention was being paid to the study of details.

The educational value of close study of this kind can scarcely be overestimated. Literature relating to these various types of farm equipment will be more intelligently studied and the various points of excellence of each will be more carefully compared than could possibly be the case without the opportunity offered at an exhibit of this kind for a direct comparison of both the equipment as a whole and the details of its construction, or the type and quality of the live stock or agricultural exhibits seen. It is for this reason that so much stress has been placed upon the importance of a general attendance of agricultural fairs by the farmers of Michigan.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The general trend of military events after several weeks of successive victories, has apparently turned against the Teutonic allies. The Russians have developed a counter-offensive movement which has thrown back the Germans at several points along the northern half of the battle front, while in Galicia the Slavs continue to add victories to those of the past two weeks. The fighting to the north, however, has been violent and the outcome is yet uncertain, as the Germans are making a desperate effort to add to their remarkable list of victories the capture of Riga. The most spectacular revers-

es, however, have occurred in the west, where the Anglo-French armies have co-operated in a general offensive movement and captured twenty miles of trenches from the Germans, driving the latter back from one-third to two and one-half miles. Up till Monday 20,000 Germans had been captured and the battle still continued. The field operations were aided by the British warships and French and Belgian batteries bombarding the German positions on the Belgian coast between Zeebrugge and Nieuport. The Austrians have also been repulsed by Italian troops. The situation at the Dardanelles has not changed materially. Political affairs in the Balkan states however, are at fever heat since Bulgaria, Roumania and Greece are active mobilizing their armies preparatory to a movement of Teutonic troops to assist the Turks. It is presumed that Bulgaria will co-operate, or at least not hinder the Teutons, while the other nations will naturally aid Italy and the Anglo-French allied forces in that they fear Bulgaria may through the acquisition of territory become the ruling power in the Balkan regions.

Verification of the massacre of Armenians by the Turks have reached this country. It is estimated that 50,000 Armenians have either been murdered or forced to desert their country.

In a skirmish between Haitian rebels and United States marines in Haiti 40 native soldiers were killed and 10 Americans wounded. The rebels have refused to disarm and the Americans are marching on Haut du Cap.

The monarchical movement appears from dispatches, to be widening in China, and there is evidence that because of the inadequacy of the republic to meet the needs of a civilization so accustomed to monarchical rule, that the old style of government will in time be resorted to.

In a note published last week Germany concedes to the United States all the proposals made by this country in the dispute connected with the sinking of the steamship William P. Frye by a German submarine.

National.

Business conditions appear to be expanding favorably in this country. Stocks are changing hands on an advancing market at an unusually liberal volume. Nearly all lines of business show healthy growth, building is increasing, collections are good, while manufacturers are generally busy and the iron and steel markets are trending upward with the demand increasing.

A 300-mile highway connecting Toledo, Detroit and Mackinaw is the object of a movement recently started by automobile manufacturers, other interested concerns and private individuals. The road will join at Mackinaw with the west-Michigan pike, which in turn connects at Chicago with the Dixie highway to New Orleans.

Eighty passengers of a Southern Pacific Mexican train were captured and burned by Yaqui Indians near Torres in the state of Sonora, Mexico, last Friday. The Indians are reported to be deserters from one of the Mexican factional armies.

Secretary of the Navy Daniels has named his invention board of which Thomas Edison is chairman. In all 22 scientists and inventors have been called to assist the United States navy in its technical problems of development.

The Belgian Relief Commission has collected and disbursed \$50,000,000 during the first eight months of its existence. This is the greatest relief movement of history. The American response has been so liberal that clothing and feeding the unfortunate people has been practically complete.

Thousands of G. A. R. men are arriving in Washington for their forty-ninth annual reunion. About 30,000 veterans it is estimated, are to participate in the celebration.

An agreement has virtually been reached by the Anglo-French financial commission and eastern American bankers on the details of the proposed half-billion dollar credit loan to Great Britain and France. Four members of the foreign commission are now to confer with western bankers over the tentative terms.

A cloudburst just north of Galena, Ill., Sunday flooded the municipality from two to ten feet as the water swept through the streets. Thousands of dollars of damage has resulted and the business section of the city has been temporarily demoralized.

Fire destroyed 75 houses at Hampton Beach, N. H., last week resulting in a loss of \$200,000.

A dynamite explosion in a subway under Seventh avenue, New York city, caused a cave-in that carried down a surface trolley car which was passing at the moment of the explosion. Seven persons were killed and nearly 100 injured.

The Essentials of Tree Repair

By ELBERT PEETS

TREE repair, or tree surgery, as it is often called, is the science of preventing and repairing injuries to the physical framework of trees—wounds, cracks and holes which weaken trees and interfere with their natural growth. The work is carried on by preventing the formation of such holes, by artificially restoring with bolts or wires, the strength which is lost on account of cavities, splits, or incorrect growth of limbs, and by filling or otherwise treating holes so as to stop them from spreading and further weakening the tree. Each of these matters will be taken up later.

But first we must find out what weakens and injures the trees and causes the holes. All farmers nowadays are familiar with the fungous

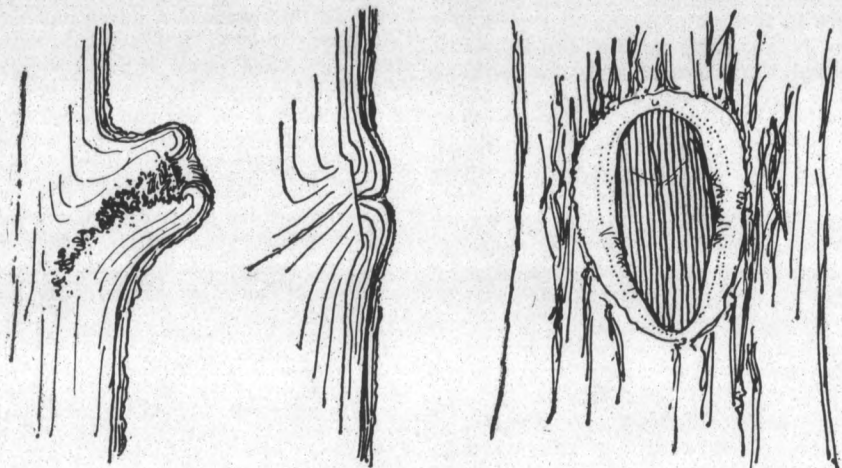
not been well cared for usually lose one or more of their lower limbs and through the dead stubs thus left decay gets into the trunk and hollows it out. The thing to do is to permit only a limited number of limbs to get large and to see that each of them gets plenty of light so it will not be shaded out. Weak crotches are another source of danger. Everyone has noticed how often silver maples have great wounds in their sides. These are often caused by the silver maple's habit of sending up two or more main limbs or trunks, forming a very weak crotch. If the tree is permitted to form only one trunk it can offer a much stronger resistance to an ice storm. Limbs which rub against each other should also be avoided, because

(about a dollar a gallon) are much more permanent than ordinary paint. I have found it a good thing to apply a thin disinfectant such as carbolineum (which must not be applied to the bark) or stock lime-sulphur solution at the time the cut is made. Then I paint it with a heavy asphalt pruning paint or coal-tar two or three months later, when the cut had dried out and checked. The paint must be flowed over the cut and not merely used to tint it. When you are spraying with lime-sulphur or Bordeaux see that every cut or wound is sprayed. Look at all large cuts occasionally and renew the covering if any wood is exposed.

A callous sometimes gets bark-bound and its growth can be quickened by cutting a few shallow slits in its bark, paralleled to the edges of the callous, especially along the inner lip, near the old cut surface.

The second form of prevention is the prevention of wounds through which fungi may gain entrance to the wood. A great many wounds, especially in the orchard and along the street, are caused by carelessness or neglect. Horses gnaw the trees, causing ragged, ugly wounds. Wagons and tools are driven too close to the trees, damaging the bark of the trunk or roots. Workmen climb them in spring, when the bark is loose, with heavy shoes on, crushing patches of bark in the crotches. Always use light shoes, preferably rubber ones, when climbing trees. Avoid steel spurs which do great injury. Do not nail fence-wire to a tree, it is neither good for the fence nor good for the tree. In cultivating the orchard use short single-trees, or wrap the end towards the trees with cloth. Protect young fruit trees from mice and rabbits by the use of tar paper or wire netting. Protect good trees in the pasture or around the barn lot with strong tree guards. In an orchard where the trees are never wounded, there will be fewer rotten, hollow trees, and fewer unprofitable vacancies.

The third way to prevent decay is to attend promptly to the wounds which, in spite of every care, occasionally occur. To become skillful in



A—Vertical Section, Pruned Wrong. Stub was Left and Rot has Entered. B—Pruned Right and Calloused Over. C—Young Callous. Dotted Lines Show Cuts to Hasten Growth of Callous.

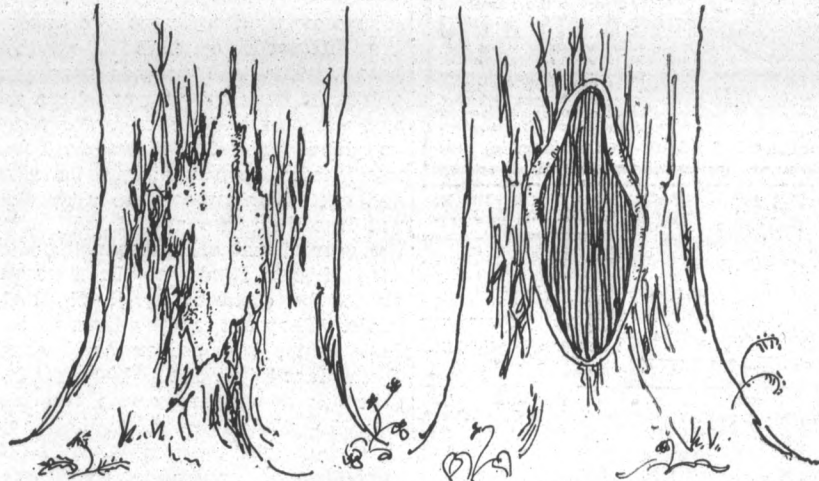
diseases which cause decay of fruits, as the brown rot of apples, or of leaves, as the leaf blight. These injuries are done by low forms of plants, called fungi. Other kinds of fungi cause the decay of dead or living wood. If a log is left in the woods it is soon attacked by these fungi, and if part of the wood of a living tree is exposed, the spores of fungi are soon brought to it by the wind and start decay which may, perhaps after many years, so hollow out and weaken the trunk that the tree is starved to death by the cutting off of food from the roots or is broken apart by storms. Once these fungi start work they can only be stopped by cutting them out completely, like a cancer in the human body. Eight-tenths of the work of tree repair consists of preventing the entrance or stopping the growth of and repairing the damage done by fungi. Another tenth consists of operations against boring insects (about which I shall have space to say very little) and the rest is work caused by such natural forces as lightning and high winds.

In tree repair, one ounce of prevention is worth several tons of cure. Farmers and fruit growers, especially, should practice prevention, for they cannot often afford the time and money consumed in the treatment of a large cavity which might easily have been prevented by making a cut right instead of wrong, or by daubing a bit of paint on an accidental wound. In discussing prevention I shall speak first of the value of correct pruning, then of the prevention of mechanical injuries, and finally about the treatment of bark wounds.

Prevention by pruning takes two forms: cutting out the right limbs, and cutting them in the right way. All orchardists now realize the importance of so training the young tree and forming its framework that when it grows up there will not be too many large limbs, and so that the limbs will not crowd each other and form weak crotches. Old apple trees which have

the exposed wood permits the entrance of fungi. All weak branches should be shortened or removed, before the wind breaks them off and tears away the bark of the trunk.

When a limb has to be cut off the cut should be done in such a way as to hasten the natural healing of the wounds. Wounds are healed by the growth of a callous, which spreads over them from the sides. That callous starts quicker if the cut is a smooth one, not ragged and torn, and



Ragged Wound and Same a Few Years After Treatment. Wound Painted with Tar. Callous Started.

grows faster if it is close to the limb or trunk, up and down which the building material (sap) is circulating. So make a smooth cut and make it flush with the trunk. Don't leave a stub. But even if the cut is made right, decay may get in before the callous covers it, so an artificial covering must be put on, especially if the cut is a large one or the tree is growing very slowly. Good white-lead paint and coal-tar (the genuine article, produced from soft coal in a gas works), are the commonest applications for wounds, the tar being much the cheaper. But neither of them is permanent and they must be renewed every second or third year. There are a number of pruning paints on the market which, although rather expensive

the treatment of wounds you must study the way the bark of the tree lives and grows and the way fungi get their start. The living, growing part of the tree is a thin soft layer (called the cambium, around the edges of the wound, and that callous will slowly roll across the wound and cover it up. Unless, of course, decay starts and the wood is eaten away. The callous cannot bridge a hole, but will roll helplessly into it.

The basic principles of wound treatment are three: Save as much of the cambium as you can; do what you can to hasten the healing of the wound; and protect the exposed wood from insects and fungus spores until healing is complete.

(Continued next week.)

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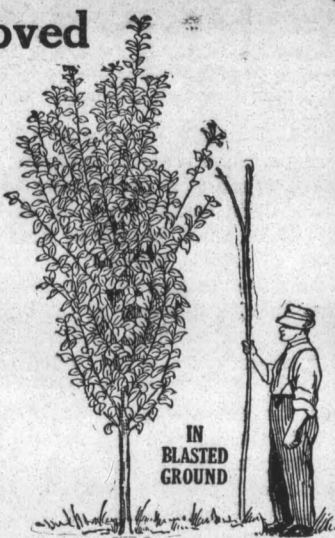
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Points In Fence Building

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In building a woven wire fence it is very important that the posts be set as firmly in the ground as possible. On my farm the end posts of the fences are about twelve inches in diameter and set four and one-half feet in the ground. I have found that the bigger the post and the deeper it is set the cheaper it is in the long run. These posts are well anchored with a block of wood two by six by 24 inches at the foot of the post. Small stones are well tamped into the hole around each post. In my next setting of end posts I am going to put plenty of cement in the hole around the posts as this gives much better results than any other material. The post will be protected from decay and it is sure to be firm. The usual practice of mortising the end and second posts for the brace is not a good one as the mortise both weakens and provides a place to hold moisture and start decay. The surface of the posts should be merely smoothed off and then the brace firmly spiked on. I like No. 9 wire to use for the wire brace, firmly spiking it to the posts and passing once around both top and bottom and then twist until a taut cable is secured.

The second post need not be as large as the first, or end post, but it should be larger than the other intermediate posts and set rather deep also. My method of bracing is a good one, although there are a number of other good ways and whatever method is chosen let the work be done well as this is one of the most important features in erecting a satisfactory wire fence.

In woven wire fences the work of the intermediate posts is not very heavy. The line post is merely required to bear the weight of the wire and withstand any strain which may be placed upon it. However, I want my intermediate posts to be firmly set, each being placed to a depth of not less than two and a half feet in the ground and each measuring about six inches in diameter. Customs vary as to the distance apart of placing posts. They are usually from 20 to 40 feet apart, but personally I prefer them placed just one rod apart. If the fence is a temporary one the posts may be placed much farther apart than this and they may not be set very deep in the ground, but in building a fence that is to remain, setting the posts about one rod apart and deeply in the ground is much the better plan for it will be strong and stand up well, provided the wire is properly put on.

Set Posts in the Fall.

I very much prefer to set the posts in the fall or early winter, letting them freeze in the ground, then next spring while the ground is still frozen go out on a sunny day and put on the woven wire and every post will be as firm as it is possible to make them. The stretchers can be hooked on anywhere without bracing, and the fence drawn as tight as desired without loosening the posts. The wire can be stretched very much tighter and in one-fourth the time it would take if the posts were set in the spring in

loose earth. One winter I set nearly a mile of posts and put wire on the next spring. I did not, however, set enough and had to set about 40 more posts. It took me as long to get that 40 rods of fence up tight as it did to make the mile where the posts were set in the winter, and then I did not have as good a job with all my painstaking. In putting up a woven wire fence my plan is to begin at the opposite end of the fence from which I wish to use the stretchers and unroll the fence a short distance, then bring the end of the wires around the post and fasten with the loops, then finish unrolling the fence with the bottom wire towards the post. I use a pair of double stretchers, or fence jacks, as we call them. When ready to stretch the fence one man uses the stretchers while another works along the line, seeing that everything is all right. I never do this work in a hurry but give the wire time to get all the extra slack tightened out. It always pays to make the fence tight when putting it up, and if it is the right kind of a fence it will always be tight, provided the posts do not loosen. After fastening the wire around the post where the stretchers are, I staple the fence to the line posts with galvanized staples, being careful not to drive them up tight, as I want the strain to be left on the end posts.

Illinois.

W. M. HARDY.

FIELD MEETINGS IN KENT.

A series of field demonstration meetings is being held in Kent county, in charge of J. Hackley Skinner, county agriculturist, and they are proving very successful. A recent meeting was held on the fruit farm of Robert D. Graham, of the state board of agriculture, located two miles west of Grand Rapids, which was well attended. Oscar W. Braman, president of the Grand Rapids Fruit Growers' Association, presided and the speakers included Eben Mumford, of East Lansing, director of county agents in the state, Profs. Shoesmith and McCool, of the M. A. C., C. Hunsberger, of Grand Rapids, and Prof. E. J. Fermier, of the agricultural and mechanical engineering school at College Station, Texas.

Mr. Mumford urged the benefits of the group system of co-operation and spoke of the perils of individualism in agriculture. "We will not get far," he said, "until we have many meetings like this one. There is stimulus in the group. We must learn to work together, to pool our experiences and to work unitedly in disposing of our products. We must advertise and use broad methods."

"The field meetings are important," said Prof. Shoesmith. "Many of our problems cannot be studied indoors. The college is trying to be a factor in these meetings and invites co-operation in the use of tested grains."

Prof. McCool spoke of soil tests recently made in Kent county, showing lack of lime, nitrogen and phosphorus. The sandy types of soil analyzed seemed to have enough potash.

Prof. Fermier is an Indiana man, a graduate of Purdue and brought pleasant greetings to his Michigan friends from the Texas school. The last speaker was Gerald Fitzgerald, a former Grand Rapids lawyer, now in charge of the Morrill orchards in Texas. Through co-operation the growers in his section met with marked success in handling their tomato crop this season.

The large peach orchards of Mr. Graham, alfalfa and bean fields, were inspected and very beneficial results were noted in tile drainage, with fine crops growing where there was only willow brush and cat tails two years ago.

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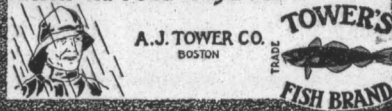
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LIME VS. FERTILIZER.

I wish to get information on the use of hydrated lime which I can buy in carlots at a nominal price. I would have a four mile haul. My land is heavy clay muck, called black ash land. I have upwards of 170 acres in crop, about 60 of which is in meadow. I have about 40 head of stock at an average but can not produce enough manure to do this much ground justice. How much of this lime per acre applied with a lime sower would produce beneficial results? The price of the lime is about one-fourth that of high-grade fertilizer. Could fertilizer be applied to the land with a lime sower with enough better results to warrant the difference in the price? Could either be applied on the frozen ground or on the snow? I renew the meadow after the third crop.

Wayne Co.

H. S.

The proper use of lime is for the correction of an acid soil. So long as our soils grow the clovers readily, there is little occasion for liming them. Lime is not a fertilizer in any sense of the word, although it may act as a liberator of available plant food already in the soil to some extent. As a top-dressing for meadows, a complete commercial fertilizer would be more practical and beneficial, but where meadows are re-seeded after the third crop as noted in this inquiry, it is a better plan to apply either lime or fertilizer when the ground is being fitted for re-seeding. While fertilizer can be used as a top-dressing for meadows with fair success, either lime or fertilizer will give better results if thoroughly incorporated with the soil when the seed bed is being prepared. If there is no difficulty in getting clover seedlings, there would be little necessity of liming this soil. It would be profitable, however, to experiment in a small way to determine whether liming is beneficial, using hydrated lime at the rate of about one ton per acre. A liberal dressing of fertilizer when the meadows are re-seeded would without question be a profitable investment.

LIME AS FILLER IN FERTILIZER.

There is a brand of fertilizer being sold in this vicinity that is claimed to contain a lime filler; is that a good way to buy lime?

Washtenaw Co.

J. W. T.

Ground limestone is sometimes used as a filler in fertilizer, also moulders' sand, Fuller's earth, muck, etc., whichever is the most convenient and the cheapest for the manufacturers. Muck adds a little organic matter and is therefore of some value to the land. But ground limestone is always of some value, nearly all soils are benefited by it, and it cannot possibly do any harm, even though the land does not at the time need lime. All soils will eventually need lime, hence where an artificial filler is necessary I would prefer that it be ground limestone to anything else.

The farmer pays nothing for this artificial filler. The price of the fertilizer is based on the per cent of nitrogen, phosphorous and potash it contains and not on the filler. For instance, take a 2:8:2 fertilizer. The manufacturers guarantee two per cent or 40 pounds of nitrogen, eight per cent, or 160 pounds of phosphoric acid and two per cent, or 40 pounds of potash in one ton. If the natural filler of the ingredients used does not make one ton, then he uses an artificial filler, but he does not charge for this, so what lime you get in a fertilizer costs you nothing, and if the land is sour it will help correct this acidity.

COLON C. LILLIE.

SAWDUST AS A FERTILIZER.

Kindly advise regarding the value of sawdust as a fertilizer.

Oakland Co.

A. F.

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Wastes In Stable Manure

THE great question that is attracting the attention of the agriculturists and practical economists is maintaining the fertility of the soil. It is a matter which has been given a good deal of consideration by a few apprehensive and thoughtful ones who have the prosperity and future welfare of the people of the country in mind; and while the truths uttered ought to have aroused attention among the masses, we must admit that the ones who treat the matter indifferently are in the majority.

There are those who prefer to purchase plant foods in the shape of commercial fertilizers, hoping to use the soil as a receptacle of the elements necessary for the production of a crop without building it up in nature's way. Such schemes have, and always will, prove failures in time, for several reasons. It is only when we comply with nature's way of supplying vegetable matter of the right kind, and allow it to pass through the processes of decay, we can furnish the required conditions for the production of maximum farm crops. Excrement from farm animals which have been consuming the right kind of feeds, applied and mixed with the soil furnishes the vegetable matter, and plant food, necessary for the growth of crops in the very best possible manner yet discovered. Such is the evidence furnished by nations which have supported a large population for several thousands of years. While we may look upon China as a nation slow to become modernized, as we look at matters, we might do well to study and imitate, to a considerable extent, their methods of saving and utilizing the excrement of animals.

Our Enormous Wastes of Manures.

One of the lecturers at the Round-up Institute at the M. A. C. in the present year, made the statement that there is a general loss in handling barnyard manures in this country of over 50 per cent of its original value. This may not seem so appalling at first thought, but when we consider that during the four winter months the value of the farmyard manures reaches, in the United States, the huge sum of \$1,063,000,000. Let us figure that the four months is but one-third of the year, and that the process of production is going on the whole year, there must be produced during the year three times the amount mentioned, which would reach \$3,189,000,000. During the whole year there are losses by washing, leaching, fermentation, decay and evaporation of fully 50 per cent, the total loss annually must reach \$1,594,500,000. When we study those figures, is it not time to consider the avenues of waste, and, if possible, adopt means that will prevent the enormous wastes on the farms in our own state?

Washing and Leaching.

Farmers have been so accustomed to throw the manure from the stable in a pile in the barnyard, and leave it until it is convenient to haul it to the fields, that they do not give the matter of loss by washing and leaching any consideration. Usually but little of the value of the solids of the manure is lost in the stable, but great losses occur after it is thrown in a pile. The manure in the stable, saturated by the urine contains more than 50 per cent water. The moisture in the manure holds in solution the greater part of the plant foods which the manure contains. When the rains fall upon the manure and the water from the melted snow soaks into it, the leaching process carries away much of the soluble plant foods and it is lost beyond recovery, for it is either carried away in the water as it flows in the surface to the streams, or sinks into the ground where, for all practical purposes, it is wasted. If

one would watch a manure pile during a season like the present rainy one, they could easily see how it wastes away; one-half the bulk has disappeared, and probably more than half the value has been carried away.

The Cornell University Experiment Station has made some investigations along these lines. They found that horse manure exposed in a pile six months during six spring and summer months lost 65 per cent of its value, and that cow manure exposed the same time lost 32 per cent. Undoubtedly the horse manure lost much by fermentation.

Loss of Liquids.

As most plank stable floors are constructed the liquids which are not absorbed by bedding are lost. It has been the custom to so construct stable floors, whether plank or earth, in a way to effectually get rid of the urine; it has been looked upon as a nuisance and a hindrance in maintaining cleanliness in the stable. When we calculate that the urine contains about one-half the value in nitrogen and potash, we can see what enormous wastes are sustained by not devising means by which the urine can be retained and carried along to the fields with the solids, where it can be immediately utilized by the growing crops, leaving the plant foods in the solids to become available later.

While attending farmers' institutes in one of our northern counties, a wealthy gentleman invited me to visit his place as he wished me to see his newly constructed dairy barn and stable. One of the first things he showed me was his plan to get rid of what he called the filth. He had a gutter so constructed that the urine would all run to one corner of the stable, and he had a tile drain laid to carry it to a creek near by. I told him that he had planned to get rid of about one-half the value of the fertilizing value of his manure. At first he seemed incredulous, but after I had explained that the urine contains the wastes and wornout material of the animals' bodies, and they were in a soluble form, ready to be taken up at once by the growing plants he seemed to see the truth of the matter. He said, "That looks reasonable, and I will stop up my tile in the corner of the barn and use absorbents in the gutter in order to take up the urine and carry it to the fields." It is needless to say that the owner of the barn was afterwards emphatic in his praises of farmers' institutes.

Fermentation and Heating.

There seems to be but a few who fully realize the enormous losses sustained by fermentation and heating, while some classes of manures are in piles. As steam arises from the piles ammonia escapes and the loss is rapid and complete.

The manure from farm animals is of two classes: one called cold manures, and the other the warm manures. The manure voided by cattle and hogs is what is called cold manures, and that voided by horses, sheep and poultry is called warm manures. The warm manures, if piled only a little, heat readily and losses begin. The cold class of manures do not heat very quickly, except when mixed with lighter materials, like some light kind of bedding, when it will also heat, and losses will begin.

Sheep manure, though the richest in plant foods, heats quickly and becomes what we call "fire fanged." The heating often occurs in the stable when the sheep are being housed and the flockmaster or owner is unconscious of any losses. When the manure is taken out of the stable or shed, if there are any light, moldy places, it is evidence that the heating process has been going on and that part of the value has been burned out. That part of the manure which has

been through the heating process has lost much of its original value.

If plans by which the washing and leaching, and fermentation and heating, and wasting of liquids, can be avoided, it is safe to estimate that the manures produced and used on the farms would carry within them to the fields at least twice the value that is contained within them as they are ordinarily handled. Such plans would mean the saving of millions of dollars in intrinsic value to the farmers of both farm and crop values. It would mean better and richer farms, better crops, more prosperous farmers, and better general conditions among the residents in the country.

Wayne Co.

N. A. CLAPP.

LIVE STOCK NEWS.

Corn belt men who are after breeding ewes find very little western stock available as ranchers are holding back most of their yearling ewes for their own use next season. High prices are prevailing at this time and only last week some made a new record at Kansas City of \$7.65, averaging 99 lbs. The desire to get back into the sheep and lamb business is strong with most farmers because of the remarkably high prices scored in 1915. It will take several years before prices will be forced down to an unprofitable basis but the man who waits until everybody else is back in the "game" will find that his chance of profit is materially reduced.

Illinois State Veterinarian O. E. Dyson has abandoned his idea of establishing a quarantine division at the various stock yards of the state for cholera infected hogs and those exposed to the disease, eliminating a severe loss to the hog growers which would have resulted had his plan been carried out. His tentative plan met with severe opposition among the live stock men of the state and they are pleased that he has given up the idea. Had he been successful in accomplishing his end the hog raisers of other states would have undoubtedly been forced to market offerings under the same conditions in time to come. The abandonment of the plan indirectly helps the hog raisers of the entire country.

Sheep and lambs have sold remarkably well, with a few exceptions, thus far this year and corn belt sheep growers will long remember 1915 as one of the big profits. The receipts have been far below normal and the prices earlier in the year soared to heretofore unheard of levels and even now lambs are bringing record prices for this time of the year. There is no doubt that many will return to the raising of ovine stock next spring and it is predicted that prices will be profitable although even the most bullish do not anticipate a repetition of the phenomenal prices of April and May of this year.

The second week of September witnessed the largest run of range cattle at Chicago for the season to date and a new top of \$9.10 was recorded for prime heavy Montana steers. This price will undoubtedly be surpassed in weeks to come as quality of western stock will be better than usual, due to good pastures and plenty of feed, and the crop will be short of normal volume. During 1914 some reached \$10, the record for western rangers exclusive of Canadians which sold up to \$10.25 in 1912. Best range cattle made \$8.65 in 1913 while none sold higher than \$7.90 in 1911.

Heavy hogs are not selling very well although some had anticipated a better call for this class by the first week in September. Weighty animals have been marketed freely all season and many are of the opinion that farmers are nearly out of them. With a let-up in receipts of heavy hogs the prime ones will certainly advance in price as light weights are becoming more numerous every week. Quality of the light lots is poorer than a short time ago and there is a spread of 25@50c between prime ones and the grassy kinds. Pigs have become more numerous but demand holds out fairly well as offerings are remarkably healthy.

Cattle trade has been comparatively erratic for several weeks but the demand for prime heavy bullocks is gradually improving and in weeks ahead traders anticipate that this class will sell remarkably well. Only a small proportion of the receipts in late weeks consisted of heavy steers and buyers are taking every one to be had and still are compelled to go short. Last fall and early this spring weighty steers were relatively poor sellers and now there are few left in the country the packers are paying good prices for them.

Observations In Dairying

SOME interesting facts about the dairy business in the writer's locality, have been gleaned through observation and inquiry. These facts which are general in nature, show a gradual increase in interest along this line among farmers. Some side lights thrown on the question, may also prove of interest to readers of this paper.

An observation of the dairy business in this section, covering the last three or four years, reveals beyond a doubt, a steady increase in interest in this line of farm work. The boom in the price of good milch cows which attended the initial steps in the movement, has never quite subsided. Good cows are always in demand, at record-breaking prices. Steadily the number of cows in a given neighborhood has increased, till in some instances, the herds have been doubled or even trebled. From keeping three or four cows, farmers have augmented the number to eight or ten or a dozen.

The Change in a Community's Agriculture.

Hand in hand with this growth in dairying, has gone a falling off in the number of sheep fed. For many years this section has been one of the sheep feeding centers of Michigan. Western lambs by the thousands have been shipped here, each year, and re-shipped after months of feeding, to eastern markets. In time past, this has been a wonderfully profitable and popular business, but uncertainties of late years, coupled with a growing tendency to keep more cows, has worked a change. Sheep feeders are still with us, feeding their thousands of sheep each year, but in general the industry is confined to a few experienced feeders. In the main, the small farmers have fallen away, and are now keeping cows instead. Fifteen years ago everybody fed sheep; today it is one farmer in eight or ten.

Out of this increase in dairying has grown a steady increase in a kindred industry—hog raising. The modern cream separator which has without a doubt, been a prominent factor in stimulating interest in the industry of dairying, has also been a factor in the porker side of the business. In former years the waste product sent back to the farm from the creamery, was held of little value either for calves or hogs. Now all is changed. The milk from the separator, fed warm to the calves and hogs, is considered excellent food. It is literally true that some farmers who never owned a creditable-looking bunch of hogs, are now successful hog raisers, simply because they possess a few more cows and a cream separator.

The Development of the Marketing End.

In looking over the ground to get an insight into the various phases of the innovation mentioned, some surprising facts are revealed concerning the marketing of milk and cream. Farmers living withing practicable hauling distance of a local co-operative creamery patronize almost to a man, this concern. But outside this territory a diversity of opinion may be found in regard to marketing. From a single neighborhood, a cheese factory, a condensary and two creameries claim patronage. In the opinion of the farmers, all these concerns yield profitable returns. The difference of opinion arises in regard to the relative merits of the several available markets. In general, farmers seem to like best to sell where they can retain the separated milk. Without this, the hog-raising part of the scheme falls to the ground. The fact that cash returns are slightly higher from a concern which does not permit the retaining of the milk, has weight, of course, with some.

New Interest in Home Butter Making.

In a running sketch of the various phases of dairying here, the minority

dairyman who makes butter at home, ought not to be omitted. Few and far between, as a rule, are these farmers who make butter. Good dairy butter is at a premium most of the year. Signs may be seen of a reawakened interest in home butter making. Whether or not this tendency will become strongly marked, remains for time to reveal. The unsupplied demand for good dairy butter is the most powerful factor in renewing interest in this phase of the industry.

As the writer has before stated in these columns, the silo has undoubtedly been an important factor in awakening the farmer to the possibilities of dairying. With amazing rapidity, these structures have risen and form a conspicuous part of the landscape. Like the cream separator, the silo has played no small part in bringing about the innovation mentioned in this article. Twenty years ago the majority of the farmers in this section fought shy of dairying except on a diminutive scale. They considered cows a sort of necessary evil. It is true, too, that even today a farmer may occasionally be found who will tell you there is no money in keeping cows. But the testimony of the majority disproves these statements of isolated individuals. Cows are held to be valuable and profitable property, these days, and a herd of good milkers is a very satisfactory and comforting spectacle to most farmers. The increased interest is marked and wide-spread, and is as permanent as any phase of diversified farming.

Hillsdale Co. J. A. KAISER.

USING SALT IN SILO.

Is it advisable to salt silage when it is put in the silo, and if so how much? Should it be used wet or dry? Allegan Co. E. E. D.

I never used salt on the corn when filling the silo, and I never heard of it being used. It would do no harm and I cannot see how it would do any good. Sometimes we use salt on badly cured hay. It does some good because it helps to prevent fermentation by destroying some of the bacteria. Fermentation can go so far in a hay mow that the hay is greatly injured, and in some cases its food value is largely destroyed, and as combustion (spontaneous combustion), will take place.

But in a silo the case is different. So much moisture is present, or should be, that fermentation is checked. The corn packs down so closely that all air is excluded, and without oxygen, fermentation ceases. So there is no use for salt in silo, except on top.

THE NEXT NATIONAL DAIRY SHOW.

The directors and officers of the National Dairy Show have, with a singleness of purpose, been moving in every known direction to secure sufficiently positive advice regarding the absolute wiping out of foot-and-mouth disease from our country, to determine their action as to this year's show, and, as the time for definite announcement concerning the 1915 show cannot further be delayed, and despite the fact that the Show Association has made much preparation to go ahead with its annual show, in the interest of the general industry—above all, in the interest of the dairy cow, it has been decided that "Safety First" directs that greatest caution guide our movements. Therefore the directors reluctantly are compelled to advise the interested public of the suspension of the 1915 show, and at the same time pledge a "Greater National Dairy Show October 26 to November 4, 1916." All branches of the dairy industry have promised their united and unstinted support for a world record show in 1916—a show that will worthily represent the leading feature of American agriculture—dairying. Everything that is to be undertaken to advance the industry throughout the year of 1915 will have the support of the National Dairy Show officials; and the plans for the 1916 show will be perfected at once.

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Practical Science.

PRESERVATION OF FOOD.

BY FLOYD W. ROBINSON.

There are several methods common for the preservation of otherwise perishable articles of food. The ones most commonly in use are: first, preservation by means of heat; second, preservation by means of cold; third, the preservation by means of dessication, evaporation and drying; fourth, preservation by the use of chemicals. Of these different processes in vogue the one which has commanded the greatest attention recently is preservation by means of heat as upon some phase of this type of preservation the modern canning industry depends for its success.

The use of heat for preserving has been known for a long time. It was practiced before the days of civilization, although its greatest application and its most refined application has resulted in the last comparatively few years.

Spoilage Caused by Micro-organisms.

It has become quite commonly known that the changes in food which produce spoilage are brought about in large measure through the activity of certain micro-organisms. In other words, decay, and spoilage generally, is quite commonly recognized as a micro-biological change, or a change having to do with the growth and activity of micro-organisms, yeasts, molds, bacteria, etc. The decay and spoilage of food being caused in this way, naturally the weapons used to fight the advance of micro-biological life in food products have been weapons utilized through a knowledge of the conditions favoring the most active growth of these small organisms. As in the preservation of milk, perhaps the one greatest preventative is the observing of a rigid degree of cleanliness. Probably spoilage in canned fruits and canned vegetables is more generally laid to the cause of uncleanness in the preparation of food than any other factor except perhaps the lack of sufficient sterilization the two being inseparable.

Condition of Raw Material.

Together with the factors of cleanliness must, of course, be taken into consideration the wholesomeness or soundness of the raw materials. This phase is very noticeable in the preparation of such food materials as tomato catsup for the canning of the finished article depends upon, to a very marked degree, soundness and wholesomeness of the tomatoes used. It is a well known principle that no process of food preservation can improve materially the condition of a spoiled raw material. Therefore, prevention of spoilage previous to canning is one of the very great desiderata which make for wholesome canned food products. In tomatoes particularly, due to the inroads made by plant diseases as well as the ordinary types of decay, the question of the preparation of the food previous to canning is exceedingly important. Of course, it is possible by resorting to one of the different types of preservation to prepare the product which, even though in a somewhat advanced condition of spoilage yet will keep indefinitely. Such a process of preservation, however, does not make the product wholesome and the mere fact that a product is well preserved does not in any case furnish a guaranty of wholesomeness.

How to Detect Unsoundness in the Laboratory.

Fortunately we have some very satisfactory methods of detecting the class of material which has been used in the manufacture of tomato catsup as well as the degree of care and

cleanliness observed in its manufacture. Tomato catsup is a very peculiar product and while it owes its inherent properties no doubt to the tomatoes contained in the product at the same time rarely do the tomato catsups taste like the tomato pulp from which they are manufactured. The processes of sweetening and spicing in the preparation of tomato pulp into the tomato catsup change quite materially its flavor. So much is this true, and so pronounced is the flavor usually of the finished product that much spoilage and decay and much uncleanness in the method of preparation may be disguised so that the consumer does not readily recognize the character of the inferiority present. Furthermore, the process of heating has destroyed the micro-biological flora present and the usual cultural methods for their identification are no longer applicable. Laboratory investigators must therefore content themselves with the examination of the inert micro-biological factors present. The catsup is therefore examined for the number of bacteria present which bacteria are counted directly because they are entirely inactive. The yeasts and spores are another indication of the condition of the product. These two factors taken with the comparative number of molds in the product, furnish a pretty fairly clear idea of the condition of the product.

Kind of Canning Receptacle.

There are many other factors that influence the successful canning of food products. Aside from the wholesomeness of the raw material itself and the cleanliness of the environment, the condition of the receptacle into which the food product is put is of very great importance. For home canning it is doubtful if anything will take the place of glass although tin cans are coming more generally into use. But glass provides many satisfactory conditions. The canner can see the condition of the finished product, its color and the glass itself may be more satisfactorily cleaned than some opaque substances like a tin can. Furthermore the vegetables and fruits canned have a much less solvent action on glass than on any other material commonly used for canning. Tin cans must be heavily coated with tin to prevent the fruit acids coming in contact with the other metal in the can and therefore contaminating the product with the lead or some other constituent of the metal.

The Lacquered Can.

There are some cans on the market at the present time in which the entire inside is heavily lacquered with lacquer, which successfully resists the action of the fruit juices. These cans have marked a very distinct advance in the canning industry and have now been used quite extensively by some of the houses putting out the higher grade articles of canned food. The greatest objection to the use of glass for canning commercially has been the great amount of breakage and the exceedingly high cost of transportation due to the weight of the receptacle. Some of the very highest grades of canned foods, however, on the market, are put up in glass containers and there are now available types of glass cans which quite successfully withstand the heat used in canning and which easily provide a perfect seal after canning.

Temperature a Highly Important Factor.

Probably the most important factor in canning foods is to secure a sufficiently high temperature to destroy all of the micro-biological life present. (Continued on page 292).

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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.

BELLE had returned from the Farm Girls' Institute and Lena was calling on her.

The day was warm and as they sat chatting on the screened porch the south wind scattered the rose leaves on the lawn, and, stirring the tendrils of the wistaria, passed on through the window, carrying their words to where Aunt Ellen was writing a letter.

After discussing bread making, the care of milk and butter, poultry raising, kitchen and flower gardens, and touching lightly on history and English, the conversation switched off on to that other theme always dear to girls' hearts—the other girls.

"How did you like your room-mate this year?" asked Lena.

"Oh, fine! Such a treasure. The

A New Version By AUNT QUILLA

dearest thing at the Hall. Everybody said so and I had special reasons for agreeing with them."

"I remember your writing me that you didn't like Fan very well though I never knew why. I shall never know her so you will be doing no injury to tell me now."

"Well," replied Belle, "Fan was invariably in trouble and needing help. Always forgetting her yeast or sponge or incubators, tearing her gowns, losing her pencils, or spilling ink. She seemed to expect everybody to help her out, especially myself, and didn't

seem particularly appreciative of the favor either. A happy-go-lucky sort of creature, amiable enough, but slack-twisted and irresponsible and forever saying with the most aggravating unconcern, 'A friend in need is a friend indeed,' you know."

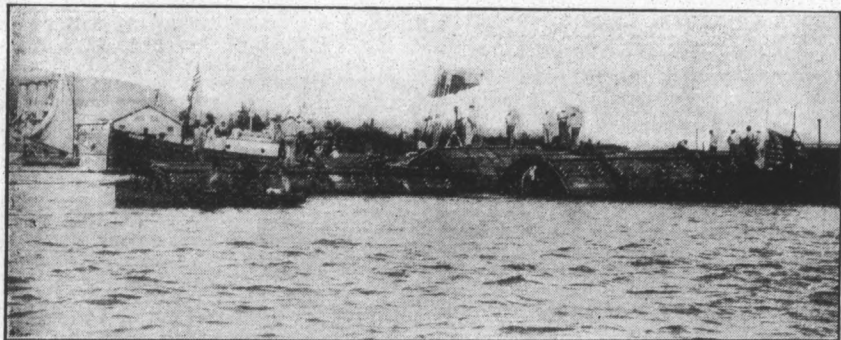
"But it was different this year. Mollie never needed anything. She adjusted her own neckwear, buttoned her own shoes, tied her own hair ribbons, spelled her own words, and looked after her own ears. It was my job to see that Fan's were clean for she declared that she couldn't for the

life of her see her own auricles.

"Best of all, Moll was never in need of money. If others were short she came to the rescue and shouldered the expense for the next spread. Yes, Moll was a jewel and never got on to our nerves with Fan's stock quotation: 'A friend in need is a friend indeed.'"

Here there was a lull in the conversation. The south wind stirred the roses again, and loitering in the wistaria passed on through the window where it seemed to take a turn, and coming back against brought these words: "You seem to be measuring friendship by the new standard. Someone has lately changed the old one and it now reads: 'A friend indeed is one never in need.'"

WORLD EVENTS IN PICTURES



Equipment Used to Raise U. S. Submarine F-4 in Honolulu Harbor.



Bedsteads Made of Date Palms for Soldiers Wounded at Dardanelles.



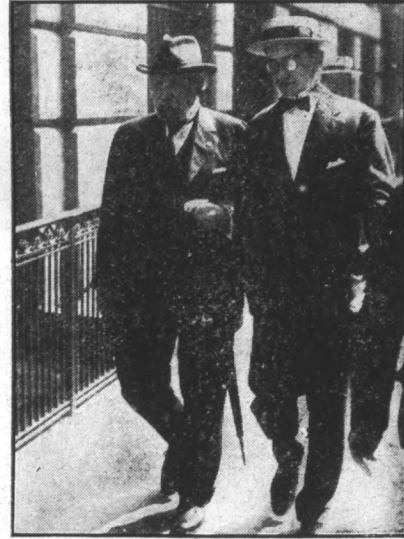
Austrian Shell that Failed to Explode in Italian Camp.



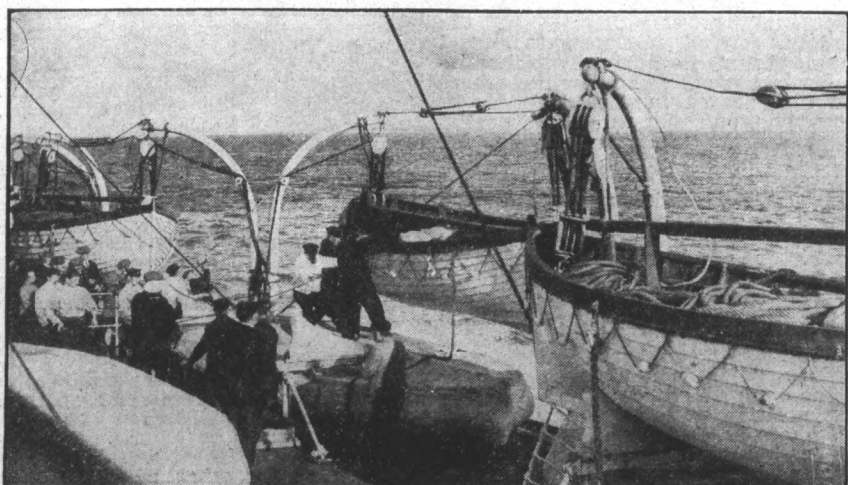
Crown Prince of Italy Spends Birthday at Front.



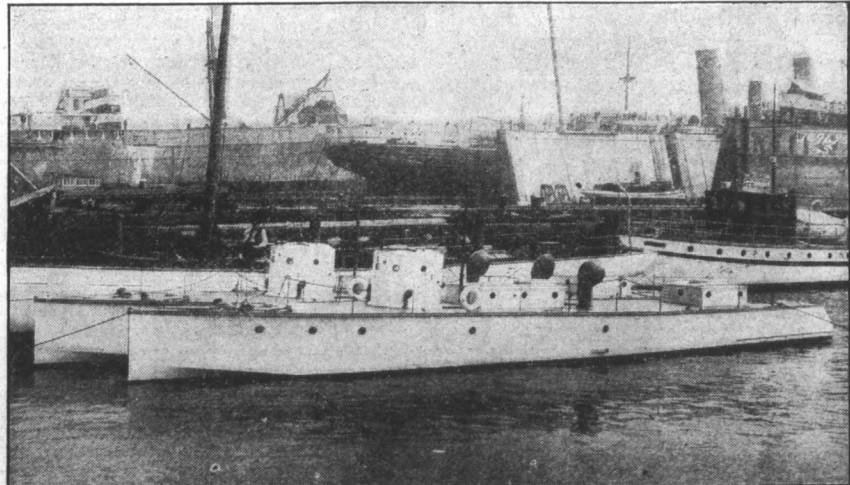
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THE RED MIST.

By RANDALL PARRISH.

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CHAPTER XXXI.—(Concluded).

I slipped down the steps, and lowered my body silently to the damp floor. An instant I peered into the dark hole, satisfied that I could make the passage, and then extinguished the light. The conduit was stone-lined, and I knew, from the crisp freshness of the air, that the distance to be traversed was short. I entered the hole head first, dragging and pushing with hands and feet, eager to get quickly into the open. My body so blocked the opening that I felt stifled, nor could I perceive any gleam of light ahead yet the passage was not really a difficult one, and almost before I realized the possibility, my head and shoulders emerged into the outer air and I hung suspended over a rock ledge, staring blindly down into the unknown depths of a ravine. The ledge itself was barely wide enough to afford foothold, yet I succeeded in creeping out upon it, and then in standing upright. The shoulder of the hill was sufficiently steep and high to shut out all view of the log walls of the church, while below was a black void, out from which arose the faint splashing of distant water. But the church itself must have been lit up by this time, for a reddish glow of light tipped the bank above, and bridged the dark ravine. The rock ledge extended to the right, a fairly smooth path, and I followed it cautiously, finding no other available passage. It led gradually downward, until it seemed to merge into a beaten track, running directly south through a tangle of underbrush not far above the stream. The way was intensely black, yet not difficult to follow by the sense of touch, while the incessant roar of the nearby water blotted out all sound from above. Once I heard the crack of guns, but they sounded at a distance, and, looking up, I could perceive the red reflection on the trees lining the bank far above. But for these I was plunged in a black solitude, through which I must grope my way, each step liable to plunge me into uncertain peril. A hundred yards, two hundred, and the trail swerved more to the right, and began to mount upward, zig-zagging among the trees. Slowly, cautiously, my head arose above the crest, and the moon, just peering out from behind the edge of a cloud, gave me glimpse along the level plateau.

CHAPTER XXXII.

With Nature's Weapon.

TO the right of where I lay was the outline of the church, the windows alight, several blazing torches, bobbing about within, revealing passing figures, although the distance was too great to permit any sound of voices reaching my ears. The rear door, however, stood wide open, and a considerable body of men were grouped there. Straight across from me, a squad of horsemen were moving northward, and a single rider was spurring rapidly between them and the church. The grove of trees where I was to meet Nichols and Norreen was to the left. It was dark and silent, a shapeless shadow, and the forest growth of the ravine extended far enough over the crest to hide my approach. Satisfied that no searching parties were nearby I advanced swiftly along the edge of this fringe of trees, yet taking every precaution. 'Twas well I did, for suddenly the horseman swerved, and rode straight toward me through the moonlight. I sank down into the brush, revolver in hand, and waited. Once he stopped, and called out something; then came on along the edge of the wood, walking his horse slowly. The rider was not a soldier, but beyond that fact, evidenced by lack of uniform, I could make no guess as to his identity, although I believed him one of Cowan's guerrillas. A gun, poised and ready, forked out beside his horse's neck, and he leaned forward in the saddle, peering into the shadows. A few feet beyond me, he suddenly reined in his horse, and called again:

"That you, Lieutenant?"

A single figure seemed to emerge from among the trees—a mere shadow, formless and silent.

"Yes; who are you?"

"Kelly—Dean told me you were here; the fellow has got away, and the girl with him."

"How do you know?"

"We've looked over every dead body—the wounded and prisoners, and searched every inch of the church—they're not thar, sir."

"But where could they have gone?"

They were there; he was anyhow, for I heard his voice. Did you talk with any of those living?"

"Thar ain't many ter talk ter. The Reb lieutenant is a goin' ter pull thro', I reckon, but he's hurt too bad ter talk. Enyhow Fox wouldn't give me no chance fer ter git nigh him. I asked a sojer, a young feller, an' he sed Wyatt and the girl was both in thar; he seed 'em together just afore we charged. But I'll be hanged if they're thar now."

Raymond muttered something, a smothered oath no doubt, then burst forth:

"Well, great scot, man! They are both flesh and blood. If neither are there then they must have found a way of escape. We had every side of the church guarded so a mouse could not get through in this moonlight—I saw to that myself."

"There were no guards on the east." "Because there was no room to post any. The church walls are on the very edge of the ravine here but the blocks had been smoothly set, and no guards were needed there."

"Wal," insisted the other, half angrily. "I didn't think so neither, no mor'n Anse did; but I reckon that's whar we made a mistake. Them two's skeddaddled, an' thar warn't no chance fer 'em anywhar else. Thet's plain 'nough, ain't it? I don't know nuthin' 'bout whut's thar, but I never ain't been 'long thet edge, but if them two ever got out inter thar ravine they're thar yet, fer thar's no way leading out 'cept along thar trail yonder."

"What trail? Where?"

"Back thar, 'bout a hundred feet, I reckon—an ol' hog trail thet leads down ter the crick. Thar couldn't nobody cum up it without yer seein' 'em from here."

"And so you think they're down there yet?"

"Sure; less they got wings they couldn't a come up no other way."

The lieutenant strode forward, and grasped the rein of the horse. I could see him clearly now, the moonlight on his upturned face.

"Then we've got them, all right," he asserted, a new confidence in his voice. "You know the way down, don't you, Kelly?"

"Why, yes; I hid out thar fer six weeks onct. They call it the Devil's Glen, an' I reckon tain't a bad name neither."

"All right, then; I've got three men here who'll go with you. That will be enough. I'll stay up here, so if the fellow slips by I'll nab him. Jones—all of you come here. Come, Kelly, there's a hundred dollars in this for you."

"Well, it's worth it, fer somebody's liable ter get shot." He rolled out of the saddle, but with evident reluctance. "I reckon I'll let one o' them sojers go ahead. Yer must want thet Reb powerful bad, Lieutenant?"

"I do," grimly, "dead or alive."

Three other figures joined them; they were on foot, but I could see the guns in their hands, and the gleam of buttons in the moonlight. Raymond spoke swiftly, pointing with one hand, but his voice was lowered so the words did not reach me. No doubt he was briefly explaining the plan, and giving orders. Kelly added a gruff sentence, and then the whole five tramped past me, the lieutenant leading the horse, and Kelly coming so close to where I lay I could have touched him with an extended hand. Scarcely venturing to breathe I watched their passage along the edge of the bluff, until they halted at the point where I had come up the trail. They remained grouped there for a moment, talking earnestly; then the shadow formed disintegrated, and Raymond and the horse alone remained distinguishable. I knew the others had disappeared in the blackness of the ravine, and that they were destined to search its depths in vain, for what little trail I might have left in my crawl upward could never be deciphered in that darkness. I waited motionless for what I believed to be ten minutes, anxious that the fellows get far enough down to be safely beyond earshot. At first I could hear them slipping and stumbling along the steep, stony path, but these sounds grew fainter and finally ceased. The lieutenant led the horse back a few yards, and fastened his rein securely to the limb of a tree; then took his own position within the brush shadow, where he could watch the head of the trail. From where I crouched I could no longer see the fellow.

I had no thought of going on, and leaving him there on guard. Not only

did I feel an overwhelming desire to punish the man for his treachery and insolence, but I wished to gain possession of the horse. Such an opportunity as this was the gift of God, and I was only too eager to accept it. The wide plain in front of us was deserted, the cavalry troop having disappeared. The glare of torches had disappeared from within the church, which was now a mere shapeless shadow in the moonlight. My vision did not extend to the road in front, but there were sounds indicating that the Federal forces were either going into camp, or preparing to resume their march. Satisfied that my own way was clear, I crawled out to the edge of the line of brush; and arose silently to my feet. To reach Raymond I would have to pass where the horse was tied, and to approach on hands and knees would be liable to frighten the animal. Trusting that the lieutenant's whole attention would be devoted to the trail, and that he would anticipate no approach from behind, I walked straight forward, and laid hand on the horse's head. He smelt of me curiously, but made no noise, and, looking across his back, I could dimly perceive the man a few paces beyond. He stood erect, his back toward me, perfectly motionless, his entire consciousness concentrated on his guard. I stole forward step by step, noiselessly. I was actually within reach of him, before some sense told him of my near presence, and he wheeled about only to find a leveled revolver staring him in the eyes.

"We meet again," I said coldly, "and it seems to be my luck to hold the cards."

"You! I thought—"

"I know what you thought, for I was within ten feet of you when you talked with Kelly. Put up your hands, Raymond! Yes, of course, but don't attempt any play—I only need an excuse to hurt you."

He glared at me savagely, yet his hands went up, although I could see him glance backward over one shoulder into the darkness of the ravine.

"You might make the jump," I said, drawing a revolver from his belt, "but to my best judgment there is a hundred foot sheer drop right here, and it would damage you some to take it. See," and I tossed the weapon over the edge, and we heard the sound as it struck on the rocks below. "I guess you'll not try that trick. And so you want me so badly you offer a reward, dead or alive? Isn't it rather my wife you want?"

"I don't believe she is your wife." "Not after she gave you her word! That is hardly complimentary to the lady, Lieutenant. However, I haven't any reason to be jealous of you—Norreen knows you too well by this time; you proved yourself a treacherous cur in Lewisburg. Now turn around!"

There was no other weapon in his belt, and it never occurred to me that he might possess another secreted in his jacket; nor did I realize the desperate hatred of me which gave him reckless courage. What to do with the fellow obsessed my mind; I possessed nothing to securely bind him with; I could not leave him free, nor had I any desire to take him along with me. He settled the problem himself. Suddenly, his arms above his head, his eyes on mine, he kicked viciously, the heavy shoe striking my wrist, sending the revolver spinning into the grass a dozen feet away. With almost the same movement he was tugging at his jacket pocket. I saw the gleam of steel, and gripped his fingers just in time; my other hand, number by the blow dealt me, was, for the instant, useless, yet I struck him with my elbow full in the face. I had no grip that would hold, yet it tangled the revolver in the folds of cloth so he could not draw, and, with a snarl of baffled rage, he tore his fingers loose, and clutched at my throat with both hands. Back and forth we swayed on the very edge of the ravine, kept from plunging down into the black depths by the intervening fringes of trees, savagely contending for the mastery. That he was a trained athlete, I knew in a moment, yet this gave me little fear—for this was to be a fight, no wrestling game. Strong, quick, agile as the man was, I never doubted I was his match, and, as I felt the strength come back into my numbed hand, and realized that I could clinch it again, I felt coldly confident. Once, twice, I drove my knuckles into his exposed face, compelling him to loosen grip, and throw up his hands in protection. And then I had him; not that he was devoid of skill as a boxer—sooth he possessed the tricks of defense unknown to me—but his was the professional knowledge of the West Point gym, while I had graduated from the rough school of the camp; where he had trained for points, for fancy milling, I had fought to win against desperate opponents. The difference told, for I beat him down, caring nothing for what blows reached me, so that I smashed in through his

(Continued on page 292).

A Victory for System

By DON FRANCISCO.

Here is the Story of America's Best Organized and Most Successfully Conducted Farmers' Marketing Organization.



Mr. Powell Directs the Activities of the Great Organization.

THE citrus industry of California represents an investment of about \$200,000,000. There are 208,000 acres of oranges, lemons and grapefruit in the state, and it costs about \$1,000 an acre to bring the groves into bearing. In a normal year 50,000 carloads, or 20,000,000 boxes, of fruit are shipped, more than 90 per cent of which is produced in a comparatively small area around Los Angeles in southern California. The growers are an unusual class of men, many of them being progressive farmers from the east, lawyers, merchants, doctors, and business men who have moved to the west to engage in horticulture.

The California orange acreage is the greatest in the world, exceeding that of Spain by over 50,000 acres. The total California citrus acreage is only exceeded by that of Italy, which boasts of 282,000 acres, or 74,000 acres in excess of the Pacific coast state.

There has been a very rapid increase in the shipment of citrus fruits in the last few years. The increase in the number of carloads of oranges and lemons shipped in five-year periods is as follows: From 1895 to 1900, 225 per cent; 1900 to 1905, 71.5 per cent; 1905 to 1910, 10.9 per cent, and 48.5 per cent from 1910 to 1914. At present one-seventh of the normal crop of 50,000 cars is lemons. Of the oranges approximately 63 per cent are the seedless Washington navels, 20 per cent the valencias, or summer oranges, and 10 per cent miscellaneous varieties. The valencia shipments increased 60 per cent in 1914 and will increase rapidly in the near future. The fact that lemons are picked every thirty days during the entire year and that oranges of one variety or another are constantly being matured makes the citrus industry a continuous year-around business, lending itself particularly well to systematic organized business methods.

Why Growers Organized.

Twenty years ago the growers produced about five thousand cars of oranges. They were sold as most farm crops are sold now—that is, to local buyers or to representatives of distant firms, or consigned on commission to markets from 1,500 to 3,000 miles away. The only returns in this latter case were frequently freight and selling charges. The buyers would purchase only when there was a chance to make money, thus making the business largely speculative. At other times the grower would assume the risk of distribution or would have to sell at a sacrifice. In some instances the local buyers divided the territory and did not compete with each other, or they fixed a maximum price to be paid for the fruit. Under either of these systems of suppressed competition the grower became helpless. With five thousand carloads of fruit to market annually the growers were be-

moaning the fact that over-production stared them in the face.

Gradually the growers began to believe that by organizing they might stabilize the distribution of their crop and increase the demand. They had already begun to form local associations and had built packing houses and selected managers to handle the business, the object being to bring together the fruit of the individual growers, standardize the grades and prepare the product for sale.

The Lowest Marketing Cost.

At first they continued to sell to local buyers or representatives of distant buyers, but before long they found it necessary to federate their local organizations and develop a system which would insure a uniform distribution of their fruit (which must necessarily be accomplished quickly) to the jobbers of the country. The outcome was that many of the local organizations federated and formed what is now known as the California Fruit Growers' Exchange. At the present time this organization has a membership of seven thousand growers and represents 62 per cent of the industry. It is made up of seventeen district exchanges, composed of 150 local associations of from forty to two hundred members each, and acts as a clearing house in distributing and selling citrus fruit on a cash basis. In a period of ten years the California Fruit Growers' Exchange has returned \$150,000,000 to the growers in California, and through uncollected bills, failure of jobbers, losses in mishandling of funds or in the mails, and in all other ways, has lost less than one-two-hundredths of one per cent of the money returned to California, or less than \$7,000. The total cost of the Exchange system, including the agents, the central exchange, advertising, collection of claims, and all expenses of

States and Canada throughout the world; with the supplies of Exchange fruit on track or rolling to each market; the condition of the fruit; the details regarding the sale of each car; the weather conditions; the supplies of other fruits that compete with citrus fruits, the responsibility of the trade, and with every factor which leads to an intelligent daily distribution of the fruit. This telegraphic information is placed in the hands of the Exchange shippers daily, a market news service having been developed more effectively by the Exchange than by any other American agricultural industry. The daily bulletin includes all telegrams passing between the agents and the shippers regarding each car; a catalog of the details of Exchange cars leaving California; several special reports from private sale and auction markets; and at the end of each week and month summaries of the different business operations of the system.

Capable Manager.

The growers have recognized the necessity of employing a competent manager. Mr. G. Harold Powell, who serves in that capacity, today draws the largest salary and handles the greatest number of cars of fruit of any manager of any co-operative fruit growers' association in the United States. While with the United States Department of Agriculture and again in the services of the Citrus Protective League of California, Mr. Powell made exhaustive investigations of the production of citrus fruits in Italy and Spain. It was Mr. Powell who impressed upon the citrus growers of California the necessity for handling their fruit "like eggs," and it was he and his associates in the Department of Agriculture who so skillfully worked out the causes of decay. Today Mr. Powell is acknowledged the lead-



Careful Harvesting is Important Part of the Western Fruit Growers' Marketing Program.

every kind is approximately two and one-half per cent on the gross crop prices. So far as is known this is the lowest marketing cost of any agricultural crop in the world.

An Efficient News Service.

The Exchange placed its own agents in the leading cities of the United States and Canada and through them now sell the vast crop to 2,500 fruit jobbers who in turn sell it to 300,000 or more retail dealers, either direct or through traveling salesmen. One-third of the crop is sold in the largest cities at public auction, either to the wholesale or retail dealers. Through the central exchange, the growers are placed in daily touch with trade conditions in every market in the United

States and Canada throughout the world; with the supplies of Exchange fruit on track or rolling to each market; the condition of the fruit; the details regarding the sale of each car; the weather conditions; the supplies of other fruits that compete with citrus fruits, the responsibility of the trade, and with every factor which leads to an intelligent daily distribution of the fruit.

To the writer Mr. Powell explained the organization of the Exchange as follows:

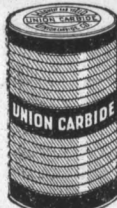
"The Exchange is built on three foundation stones: the associations of growers, through which the fruit is prepared for shipment; the district exchanges, which act as clearing houses for the associations of a community, and the California Fruit Growers' Exchange, which provides agents, through which the district exchanges, in co-operation with the associations, distribute and market the fruit of the grower, and which handles all the general business problems affecting the distribution of the crop. All the or-



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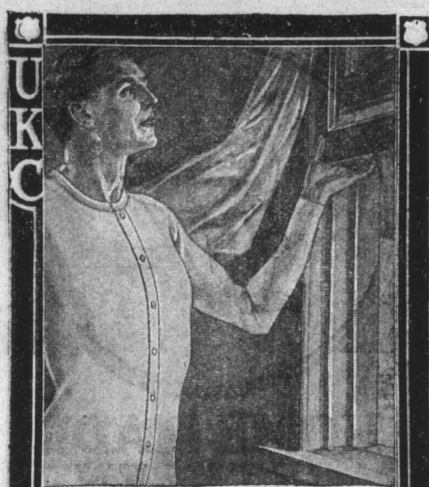
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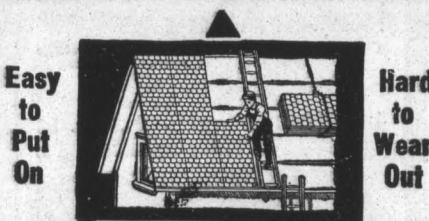
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ganizations operate at cost and each distributes the entire net proceeds to the growers after the operating expenses are deducted. The proceeds of sales are deposited by the Exchange agent in a national bank and check immediately drawn in favor of the shipper. The deposits draw interest until return of the check, which earnings serve to reduce the cost of operation.

"There are 150 local associations of growers, or individual shippers in the Exchange, representing about 62 per cent of the citrus industry. The association assembles the fruit in the packing house and there grades, packs and prepares it for shipment. The leading associations pick the fruit for the members and some prune and fumigate the trees. Usually the fruit of the growers is mingled in common pools, extending over a few weeks, or occasionally throughout a season. The grower receives his share of the proceeds of a pool pro-rated on the number of pounds of each size and grade, which he delivers to the packing house. Each association has its own brands for each grade of fruit. The association brand must appear on the box and the name of the association must also appear on the fruit wrapper. The fruit of the higher grades of all Exchange shippers is packed under the copyrighted trade name of the Exchange which supplements the brand of the association.

"A leading factor in the success of the exchange system is the character of the fruit and the efficiency with which it is handled in preparing it for sale. A community may become prosperous, or the average grower can be kept in financial distress by the character of the local organization. The merchandising of oranges or lemons rests fundamentally on good fruit, well graded, well packed, and of good keeping quality. It rests next on systematic distribution and efficient exchange service. Improper handling leads to decay and often causes the growers of a community a loss equal to one-third or more of the cost of production, and as much as the jobber's cost of distribution.

"There are seventeen district exchanges composed of the local associations. The district exchange is a non-profit organization, operating at cost. It acts as a clearing house in marketing the fruit in co-operation with the associations through the facilities provided by the California Fruit Growers' Exchange and acts as a medium through which the business affairs between the Exchange and the local associations are handled.

Work Extended to the Retailer.

"The district exchange usually represents the associations in marketing the fruit; it co-operates with them in bringing about better handling, better packing and a desirable, merchantable product. The district exchange informs itself through the California Fruit Growers' Exchange and in other ways of all phases of the citrus marketing business, places the information before the associations, receives the returns for the fruit direct from the agents and pays the proceeds to the associations after deducting the cost of operation.

"The California Fruit Growers' Exchange furnishes facilities for the distribution and marketing of the fruit by the district exchanges. It places its own exclusive bonded agents in the principal markets of the United States and Canada. These agents, in addition to the duties already outlined, co-operate with the jobbers and with their traveling salesmen in developing a wider distribution; they encourage the sale of the fruit to the retailer at a reasonable margin of profit. The Exchange agents co-operate with the retail dealers in developing attractive displays to attract the consumer. They encourage the jobbers and retailers to advertise locally and they are working in other ways

with leading jobbers and retailers to develop better methods of selling. In its systematic co-operation with the jobber and retailer, the Exchange has gone further than any other agricultural industry. Its work along these lines will be developed extensively in the future to the mutual interest of every factor concerned."

Every horticultural industry of importance on the Pacific Coast has been forced to develop its own distributing system. When the grower turns his crop over to buyers, it is distributed by them without accurate knowledge of supply and demand in each market and without an organization to develop new markets and a wider distribution. And whenever the risk of distribution is unusual the individual buyer cannot risk his capital. He therefore leaves the field or acts as a commission merchant, leaving the grower to assume all of the risks of distribution.

The California citrus fruit growers have led all other agricultural industries in eliminating the superfluous speculative middlemen and in developing a distributing system which is under their control. The Exchange system of distribution has met with the universal approval of experts. It is copied by organizations in California and elsewhere. To be as near like the Exchange system as possible is the leading argumentative asset of every important independent association that seeks to build up a larger membership in the citrus industry. The system has met with the almost universal approval of the trade.

The growers and shippers, through their associations and district exchanges, regulate and control their shipments. They determine the conditions under which the fruit should be sold outside of auction markets, ship when and in any amount they please, determine to what markets the fruit shall be consigned and where it shall be sold and outside of the auction markets, designate the price they are willing to accept. The central exchange has no power, nor could it legally under the federal statutes, fix the price at which the fruit shall be sold in California or in the markets of the country, nor to arbitrarily handle the diversions or destinations whereby prices are fixed, trade restrained, territories divided, output limited, or unfair methods of any kind practiced. Every car of fruit which the Exchange member handles through the facilities furnished by the Exchanges, sells on its own merits at a price which the shipper and the buyer mutually agree upon.

PRESERVATION OF FOOD.

(Continued from page 290).

The temperature and the time vary materially according to the product canned. Fruits as a rule require about the least heating of any product; vegetables require the most. If the heating is insufficient, in the course of time the organisms which have not been destroyed set up fermentative processes which in tin cans cause the cans to bulge and promote spoilage. The products requiring the greatest degree of heat and the most prolonged heating are such products as beans, corn, peas, asparagus, and the like. Tomatoes and fruits, such as cherries, strawberries, raspberries, etc., are rendered sterile with comparative ease. Generally speaking, the products which contain substantial quantities of organic acids are much more easily canned and preserved than certain types of vegetables which have very little acid materials present. After processing the cans they should then be kept at as low a temperature as is possible to maintain, and keep uniform, short of freezing, of course. Micro-organisms change more readily at body temperature and are inhibited in their activity by low temperatures so that other things being

equal, the lower the temperature, the more complete and perfect the preservation in case all of the organisms have not been destroyed.

THE RED MIST.

(Continued from page 288).

guard, and landed. Again and again I fainted with my right, and drove my left straight to the exposed jaws. I gave him no time to cry out, to even catch a full breath. There was no sound to be heard a hundred feet away. I became a machine, grimly determined, a desire to punish throbbing in my veins. He fought cat-like and foul, but I only laughed, and angered him. I drove him out into the open where I could see better. I was fighting now, with no thought of protecting myself, only of hurting him. I tried for a knock-out but he blocked me, clinging desperately to my arm. I tore loose once more, flinging him aside bewildered and breathless.

"Now, Raymond," I said, "that trick doesn't work a second time. Stand up to it, you coward! You wanted a fight, and you are going to have one. What! the gun again? I guess not."

He had jerked it out before I reached him, but my hand closed over his—the hammer fell, digging into the flesh of my thumb, and the pain maddened me; he staggered back from the impetus of my body, and I tore loose, the iron still imbedded in my flesh, and struck him. The pearl handle crashed to the side of his head, tearing my hand in jagged wound, but he went over, dropping to the grass as if dead. He gave no moan, no sound; for an instant his limbs twitched, and then he lay there, curled into a ball. I stared down at him, panting, scarcely realizing just what had occurred. An instant before he had been fighting like a tiger cat, now he was a motionless, grotesque shadow. Blood streamed from my lacerated hand, and I bound up the wound in a neckerchief stripped from around my throat, hardly conscious of the pain, my breath steadying, my muscles growing tense. Then I bent down, and straightened the man out, upturning his face to the moon. He was not dead—there was a beat to his pulse; but the gash on his head was an ugly one; he would have a scar there while he lived. He lay like a dead man, his face ghastly, his thin lips drawn back from his teeth, and seemingly breathless. But for that faint, barely perceptible throb of the pulse, I would have thought him killed.

And now what? Kelly, and his followers, would not be gone long exploring the depths of the ravine—an hour at most would take them over every inch of it. We must have more of a start than that. There were troops yonder. Fox would never worry over the disappearance of Raymond, but Moran might; and he was in command. There was a squad of horsemen out there now, beyond the corner of the church, and riding southward—they might be in search of the missing lieutenant and his three troopers. I dare not leave the fellow where he was to recover consciousness, and give an alarm, or be discovered by others. There were two things possible to do—to roll the body into the ravine, or bear it with me. The first would be murder; the second a tax upon my physical strength which I might not withstand. Yet there was no other way, but to try the experiment.

I tossed the discard revolver into the bushes, and struggled with the limp body until I was able to rise to my feet with the unconscious man dangling across my shoulder. He was of good girth and weight, but I succeeded in staggering the few yards necessary with the burden, and then hoisted him across the saddle, head and heels dangling. The horse snorted and circled to get away, frightened at his unusual burden, but I soothed the animal, and finally he sniffed at the man's legs, and stood still.

CHAPTER XXXIII.

The Trail to Covington.

AS I gripped the horse's rein, and turned him slowly around I heard a single shot fired in the gorge below, the sound echoing among the rocks, and a spark of fire gleamed through the darkness. It was far enough away to give me little concern, yet the report must have been heard by the cavalry squad now well out in the open, for they wheeled their horses and rode straight toward the ravine. Their course would bring them higher up, just to the rear of the church, yet, with suspicions once aroused, 'twas likely they would patrol the banks, seeking for some passage below. Confident the distance between us was sufficient to hide my movements so long as I kept well back in the shadow of the trees, I led the horse forward, advancing as rap-

idly as I dared to travel, using one hand to steady Raymond's body swaying across the saddle. It must have been a quarter of a mile, or more, to where the forest spread out from the bank into the dark tangle of trees, extending half across the ridge. The winding of the ravine took me out of sight of the body of horsemen above, yet I knew they had galloped to the edge of the gorge, and were calling to whoever was below. I could hear the shouts, without catching the words, and even imagined I could distinguish a faint cry in return. By slipping the lieutenant's belt over the saddle horn, thus preventing his limp body from sliding off, I urged the animal to a sharp trot.

What was before us in those dark woods was all conjecture—but I possessed infinite confidence in Noreen. The very silence, coupled with the fact that no sign of the two fugitives had been met with along the way, convinced me that they had safely attained the rendezvous, and were now there, anxiously awaiting my arrival. The time had not been long, and the girl would never consent to proceed alone with Nichols, until she had lost every hope of my joining her. He might not remain willingly in such close proximity to danger, but I could count on her to keep the fellow there until the last possible moment. We went down into a shallow gully, and then climbed the opposite bank, having to force a passage through thick shrub, I pressing the branches aside to prevent their scratching Raymond's face. He gave utterance to a groan, and I lifted his head, supporting it on my shoulder as we topped the rise. The horse shied, and I caught a glimpse of a shadow flitting across an open space.

"Noreen!"
"Is it really you? I could not tell—the horse; the something across the saddle."

She came forward with a swift spring, not satisfied until her hand actually touched me.

"Oh, I am so glad—you are not even hurt?"

"Not seriously; battered up a bit—Nichols?"

"Yes, he is here; there beside the tree. Tell me what has happened! What have you here? Why, it is a man," she shrank back, "a—a dead man."

"No, not dead," I hastened to explain, unbuckling the belt, and lowering the still limp body to the ground. "Here, parson, don't let the horse stray. We cannot waste many minutes here; there are cavalymen scouting the edge of the ravine yonder, and they may come as far as this. That is why I brought the fellow along—to keep him from being found. Do you recognize the face, Noreen?"

It was dark and shadowy where we were and she was compelled to bend low to distinguish the features. Her lips gave a startled, half-suppressed cry:

"Why, it is Lieutenant Raymond! You—your fought together? How did he come here?"

"I think he suspected we might manage to escape from the church. He was more anxious to capture me than he was to fight evidently, for I caught no glimpse of his face during the melee. But he, and three troopers, were hidden at the edge of the woods watching where the trail comes up from the ravine."

"Yes," breathlessly, "we saw them come across, just after the torches began to flare up inside the church. Then later another man rode along there."

"That was Kelly; he brought word that we had got away. I was within ten feet of them when they met. The lieutenant swore at the news, and sent the four men down the trail to search—he offered one hundred dollars for me, dead or alive."

She arose to her feet, but the darkness prevented my seeing the expression on her face.

"He did! this man?" she exclaimed, the horror of the thought visible in the tone. "Why, what is it to him? I do not understand why he should exhibit such bitterness—he was determined to convict you from the first. There was no feud between you, was there?"

"Only Noreen Harwood," I answered, speaking softly. "But—look! the cavalry squad just passed across that open space; they are riding this way. Raymond will revive presently, and some of his men will find him here; Kelly will search as soon as he discovers the man is missing. Nichols, fasten the belt tighter about his arms—yes, buckle it behind; a notch tighter. You know the trail?"

"I've been over it enough," rather sullenly. "Is Anse Cowan dead?"

"Yes; but that doesn't affect you at present. You are going to guide us to Covington. Hold the horse. Now Noreen."

She gave me her hand, and I helped

her into the saddle. A horse neighed in the distance, but my fingers closed on the nostrils of the animal beside me in time to prevent response. Nichols stood motionless, a tall, shapeless figure, gazing back over the tops of the bushes. I drew my revolver, and touched him with it sharply on the arm.

"Go on," I said quietly, yet with a threat in my voice. "Attempt to run, or play any trick, and I drop you in your tracks."

He turned without a word, and silently pushed a passage through the shrub into the more open woods, and I followed, grasping the horse's rein. A hundred yards further along we came into a beaten track, and began to mount upward along a rocky ridge, where the moon gave me good view. It was a scene of silent desolation. I took one glance backward, but trees shut off all glimpse of the church, and the plateau. I thought I heard a voice or two, calling afar off, perhaps the cavalymen again signaling Kelly in the ravine, but we had little to fear from them. Our trail could never be followed before morning, and dawn would be three hours away. I slipped my weapon back into my belt, confident Nichols would make no attempt to desert. He was slouching forward, muttering something to himself as he walked, and never even turned his head to glance behind. I stole a look upward at the lady in the saddle, but did not venture to address her. She sat erect, her face slightly averted, both hands on the pommel. Twice I glanced upward, seeking the encouragement of her eyes, but her thoughts appeared to be elsewhere, and I plodded on, my heart grown heavy. Beyond doubt she realized now what the end was to be. In the rush and excitement of the past few days, her natural desire to save me from the death of a spy, she had found no time for thought, for consideration. She had merely obeyed the swift impulse of the moment. But now, riding this dark mountain trail, all immediate peril left behind, she was facing the future—and regret. Her father's death, her sudden abandonment of home and friends, her disloyalty to the cause with which her sympathies were enlisted, her forced marriage, came fresh to her memory like haunting phantoms. Once, I thought, she lifted a hand, and dashed a tear from her eye; and her head sank lower, as though she would hide her face. She was evidently ashamed, regretful, unhappy; if ever she had cared for me, even in ordinary friendship, that feeling had changed into dislike—probably into actual hatred. I seemed to feel the change; to comprehend the growing horror with which she confronted the future. I wanted to tell her that I understood; that I sympathized; that I would never consent to stand between her and happiness. Plan after plan flashed through my mind—she should be free; she should go to her own friends, and never see me again. I would arrange to drop out of her life as suddenly as I had come into it. But the impetuous words died unuttered on my lips. Steadily we pushed on through the darkness, no word exchanged between us, slipping and sliding along the rocky trail, following Nichols down into a black valley, and then up again to a steep, narrow ridge. All about us was the night, and the silence.

Then the dawn broke, the black gloom fading into gray, the clouds of fog in the deep valley below us rising slowly until the rays of the rising sun lifted them to the mountain tops, red-dening the mist into grotesque beauty, and revealing the green glades beneath. It was a wild, desolate scene, and we paused on the edge of what seemed a sheer precipice. Even Nichols stopped, and looked down, pointing to the ridge of rock along which the barely perceptible trail ran.

"You'll hav ter pick yer way mighty careful 'long thar," he said slowly. "Tain't jist safe fer a hoss, nohow, but I reckon he'll pick his own way all right. Thar's a cabin 'round behind that bend whar we mout git a bite ter eat."

"Who lives there?"
"A fellow named Larrabee; but I reckon thar won't be nobody hom' but the ol' woman—Bill's conscripted."

"Go on down," I said after a moment, "and we'll follow slowly. How far away is Covington?"

"Bout twenty mile—in the next valley beyond them hills."

He disappeared around a sharp ledge, and Noreen and I were alone—alone, it seemed to me, in all the world. I dare not even look at her, as I helped her out of the saddle. Tired from the long hours of riding along the rough trail, she staggered slightly on her feet, and her hands clasped my arm. Our eyes met, and in the depths of hers was the mist of tears.

"Tom," she said earnestly, her voice faltering, "I cannot stand this any longer. I—I must know—what—what I am to you?"

"To me!" I echoed, the blood leaping in my veins. "Do you not know? Can you feel the slightest doubt?"

"Doubt! it is all doubt. You have spoken no word to guide me. You married me to save me from Anse Cowan. You permitted me to come with you because I would consent to nothing else. I do not even know that it is your choice that I go on beside you into the valley."

"Noreen," and I had her hands in mine. "It is my choice that you go with me all the way through life—dear girl, I love you."

The long lashes hid her eyes, but her cheeks were crimson; then I looked down into the blue depths, through the tear mist, and read my answer.

THE END.

AUTUMN.

BY ANNETTE C. VAN DINEN.

When the summer days are over,
And fields are no longer green,
When the flowers that bloomed have
withered,

Nature paints a glorious scene;
It is known to us as autumn,
Fairest season of the year,
And the once green, fragrant wood-
land

Gleams like gold 'neath skies so
clear.

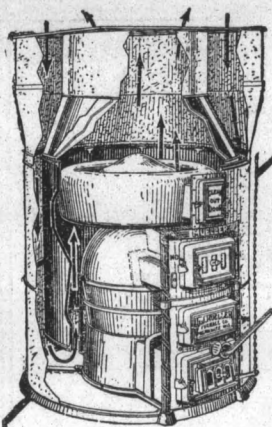
All the bright and fairest colors
Tinge the leaves with brilliant dye,
And the sight looks like a rainbow
Newly fallen from the sky,
High and low they gaily flutter,
Falling in heaps on the ground;
And behold, the glorious picture
Thrills our souls with joy profound!

One by one our bird friends leave us
For homes in a warmer clime,
Their farewell songs seem to echo,
"Hark ye, 'tis but for a time!"
Let us then enjoy earth's splendor,
Ere the days grow cold and drear,
For we know that blushing autumn
Is the gem of all the year.

The streamlet so softly murmurs
Songs of the gladness on its way;
The wind whistles round the corner,
Scat'ring the leaves as in play,
But ere long the wind howls louder,
Its great voice the woodlands daunt,
And Dame Nature unto winter
Vainly says, avaunt—avaunt!



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Woman and Her Needs

At Home and Elsewhere

Loyalty Teaches Silence

HERE'S an old, old book which seems to be going sadly out of fashion, but which, nevertheless, contains some very profound philosophy, if you don't want to call it by another and less popular name. Among its sayings is one which, if observed, would go far towards lessening divorces.

"A house divided against itself cannot stand."

It's a motto which every mother should give her daughter when she marries, a motto which she should reiterate when the bride comes back home with her first tearful tale of a matrimonial squall. Every son should have the saying to heart when he takes a bride, and, as the head of the house, should insist upon its rigid observance, teaching it both by precept and example. No matter what the dissensions within, the family which is to stand, must present a solid front to the world, an unmoved exterior which gives no chance for curious outsiders to interfere.

It is a great temptation for the girl who has been used to babbling everything to her family, to keep on talking about her troubles after she is married. Women, the majority, are so constituted that they must have sympathy, and most of them are looking for it when they don't need it, pitying themselves when they really haven't anything to be sorry for themselves about. For some reason the American girl when she marries seems to think she is going to be transported to a region where there is neither work nor worry, and when she comes to and finds out that matrimony is a partnership where the team must pull together if they are to make a success of it, she thinks she has been abused. When she finds out that she must keep right on working just as hard, or a bit harder, and that responsibilities have multiplied instead of having eliminated themselves altogether, she thinks life has played her a dirty trick. Her husband, being the latest addition to her life, must of a necessity be the medium through which comes the abuse and she blames him for all her troubles. That in itself would be bad enough, but it needn't wreck things entirely if she'd just confine her thoughts to herself, or at best, only reprove the guilty cause of her woes. But when she starts telling her mother, her dearest friend, and after them all the neighbors who will listen, then verily, the house is divided against itself, and there isn't a ghost of a show for any sort of happiness for either party.

As usual, you see, the woman is blamed first. But in this case women are not the only sinners. Many a man is guilty of criticising his wife to everyone who will listen, though if he but knew it he only excites contempt for himself and pity for his helpmate. For, while almost everyone will excuse a complaining woman, just because she is a woman, there are few who can respect the man who talks about his wife.

When you add to the father and mother children or step-children who air the soiled family linen you have about the last word in disloyalty. Yet such families exist, families where the father complains of the wife's extravagance, the wife accuses the husband of stinginess and the children complain about both. Conversations,

which might be entertaining and helpful, because each member of the family is brilliant and talented, are utterly spoiled by the petty personalities which creep in.

Personalities are bound to creep into every conversation, because we all like to talk about ourselves. But can't we remember there is a distinction between telling an interesting bit of family news and telling a bit of malicious family gossip? If each member could realize that the family is a unit, and that whatever reflects on one reflects on all, perhaps the habit of telling tales would be stopped. No one is interested in another's troubles except to gratify morbid curiosity, and the tale you tell in secret is bound to be told on the housetops. Isn't it better, then, not to talk? It is a curious fact that the thing we refuse to talk about or to think about ceases to exist, while the thing we tell grows in the retelling beyond all recognition, in fact, grows so big in many cases that it topples over the house which was divided against itself.

DEBORAH.

WINTER BLOOMING BULBS.

BY L. H. COBB.

Do not permit the windows of your home to be bare of flowers all winter when fall bulbs are so easily grown and are so inexpensive. We always have our nickel for the picture show, and most everything else we desire, if the desire is strong enough, so we should not hesitate to fill our windows with flowers. Place the order with the bulbman early and you will get your order filled from the first selection from the imports, but if it goes in late you will get second choice and stand a chance to have several sorts come missing, for there are always shortages of some kinds.

A list of a half dozen of the most popular and satisfactory bulbs for the window would include the calla, freesia, Chinese sacred lily, paper white narcissus, Von Sion narcissus and the Dutch hyacinth. Probably the paper whites and the Chinese sacred lilies are the most popular bulbs for winter flowers, the paper whites being used extensively by florists for forcing, and the Chinese sacred lilies being grown in dishes of water, with only pebbles or shells to hold them in place. Paper whites and hyacinths can be grown in water also, but they are usually grown in soil, for the flowers last longer and are of better substance. If you want a large plant with tropic foliage and fine flowers also, the calla will fill the bill. A two-inch bulb in an eight-inch pot will give you a plant that will practically fill a window. Most of the bulbs will have a season of bloom covering but a few weeks, but the calla starts in shortly after growth begins in the fall and keeps it up until nearly the first of June. They will then rest awhile and by September will be ready to begin again. During their resting period they want to become perfectly dormant, as do all the bulbs. Freesias should be planted as soon as possible for they are better if they get to grow awhile outside before it is cold enough so they must be taken into the window. The plants will be sturdier and the stems stiffer when thus grown. All of these bulbs can be put in the window at once, though the paper whites and the sac-

red lilies will be some better for a week or two in a dark place to root. The last two of the six named, the Von Sion narcissus and the hyacinth, both require being potted and set away for several weeks in a dark cool place to root. They can be left there as long as desired and brought to the light gradually.

Besides these bulbs there are several others that will bloom in the house in winter. Jonquils, Spanish iris, lilies, several other varieties of narcissus, and even tulips. The iris, tulips, and Poeticus narcissus are not readily forced, and must be allowed to take their own time, seldom blooming until well toward spring.

All bulbs should have a fairly good soil, loose and porous, and should be given plenty of water, though they should not be kept wet except the calla, and it cannot get too much water after it has started growth.

In potting up the bulbs give good drainage and cover the bulbs just so the tips show above the soil. It does not hurt them to be covered entirely, but it is better to have most of the soil beneath them for their roots to penetrate. All the bulbs mentioned, after the six, must have the dark place to root in, and be left there the same as the hyacinths and Von Sion narcissus.

Keep all bulbs except the calla in as cool a room as you can, where they will not freeze, for they will blast their flowers in a room that is dry and warm. The calla cannot do well in a cold room, and it likes a good watering with warm water every morning. I keep my plant setting in a crock and fill this crock up every morning with water as hot as I can bear my hand in.

The bulbs of the paper white narcissus and the sacred lily are valueless when once forced, but the other bulbs are all good for use afterwards. The callas and freesias are all right for use again in the house, and the hardy bulbs can be planted outside the next fall and will bloom for years, though they will not be very satisfactory in the window again.

HOME QUERIES.

I would like to tell Mrs. L. E. K. how I finished my kitchen floor. Stretch burlap as smooth as you can. Treat it to a coat of paste, like for wall paper, let dry, then give it two coats of paint. Better still, if you use the common grain sacks.

Could someone give pattern of crocheted lace known as pineapple? Have been a reader of the Michigan Farmer for years and enjoy the home department very much. Have gathered a great many helpful hints from its pages.

LETTER BOX.

Rule for Making Whey.

Dear Deborah:—May I make a little suggestion in connection with your "Baby Food" article of July 17? Our physician ordered whey for our baby and told me to follow the directions on the rennet bottle for preparing it. I did so and baby lost a half pound that week.

Then the doctor wanted to know if he told me to heat the whey to almost the boiling point to kill the rennet. He had not. Then I used the following formula and baby began to gain slowly: I used the whey about a month then gradually changed to a milk and baby food preparation until in six

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Farm Commerce.

Bean Prices Up to Growers

Secretary McBride of the Growers Association Explains in the Letter Printed Below, How the Farmers Can Get Good Prices for Beans and Eliminate the Speculative Feature.

NO magician seems able to conjure up a single reason why the growers of beans who have suffered excessive losses from the unusual weather conditions of this summer and fall, should not participate in the good prices that consumers are bound to pay for beans this winter and next spring. If the growers give speculators a chance to buy the beans at a low figure these same speculators will get the advantage that the growers now have and they will not hesitate to lay hold of every opportunity to extract from the consumer his very last cent. How the growers can keep the situation in their own hands is set forth in the following timely letter to the bean growers of Michigan from Secretary James N. McBride, of the Michigan Bean Growers' Association:

Mr. McBride's Letter.

To the Bean Growers of Michigan:

The convention at Flint represented the principal bean growing sections of the state. The unanimous opinion of crop conditions was that with even the most favorable weather the remainder of the season that not to exceed one-third of a normal crop was possible, measured in saleable stock. Frost in the northern portion of the state and with the continued wet weather anthracnose and blight have made the most disastrous season in the state's history of bean growing. There is no appreciable stock of beans of last year's crop. Nor will there be any of the staple foods cheap, as were potatoes last year. By no means can the actual cost of the 1915 bean crop be realized by the masses of growers. The problem, then, is to minimize the season's losses and maintain a price that will move the crop as needed for consumption.

The convention of growers adopted the following minimum price scale: October beans \$3; November \$3.10; December \$3.20; January \$3.30, and after that a five cents per month advance during the marketing season.

The object of this monthly advance is to accomplish the purposes of preventing dumping beans on the market faster than the trade can handle and also provide a reasonable incentive for the grower to "carry" his crop and be compensated for shrinkage, interest and carrying charges. To the buyer the market will be an advancing one to cover the items just named. Bean buying will be a merchandising business rather than a speculative one.

This plan was presented to the Bean Jobbers' Association at Ann Arbor and the general plan of co-operative action in marketing was endorsed by that body.

The actual prices were not agreed to nor opposed. For legal reasons as well as the uncertainty of crop conditions the remainder of the season the answer was made that price naming was this year wholly up to the farmer.

Conservative marketing would maintain prices while crowding beans on the market would demoralize prices. All the figures of crop costs, food values and general market prices of foodstuffs this year would make bean values above the minimum prices named.

The dangers to price maintenance based on the above conditions comes from the possibilities of marketing the crop too fast and also if "futures" have been sold on the basis of a normal crop. Growers will be advised

that beans are too high for consumption. To this the answer is that there were \$3 beans last year on double the crop, and also that the Belgian Relief Commission figured \$3 beans as the cheapest food that could be bought last year. As a business proposition consult your banker on price maintenance and financing the crop in your hands, as well as after selling. The interest on one bushel of beans at \$3 per bushel is less than two cents per month. This, with some shrinkage, still allows a safe margin for conservative marketing. On the other hand, do not overstay the market. This method of marketing the bean crop has the approval of the United States Division of Markets, and in the language of an extensive bean buyer, "it is up to the farmers to make the market price for beans."

JAS. N. McBRIDE,

Sec. Michigan Bean Growers' Assn.

City Markets

A NUMBER of western Michigan cities, including Battle Creek, Kalamazoo, Muskegon, Ludington and Manistee, will establish municipal markets. G. V. Branch, of the federal bureau of markets, Washington, has visited each one of the cities named and will assist in getting the work under way. The federal bureau was created in May, 1913, as a branch of the Department of Agriculture and just now a survey is being made of



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municipal markets in cities of over 10,000 people. Reports are already in from more than 100 cities and while no model markets have been found many of them are reported to be successful. Mr. Branch says that location and management are two of the most important essentials. As to location he points to the case of Madison, Wisconsin, where a fine market was built at cost of \$55,000, and located a mile from the center of the city. It was a failure and stands there idle. As to management, he advises renting the stalls to farmers at a price just high enough to cover the expenses of operation and the interest on bonds, besides laying aside something for the floating debt. In other words, a city market should not be a money maker, neither should it be run at a loss.

The municipal market that is well run does not conflict with the retail grocer. There is room for both. The city retail market should give those who want to pay cash and carry their purchases home a saving for their trouble. But there are still many people who insist on credit, the delivery system, orders by telephone, and the usual store accommodations.

Local conditions must be studied. In an inland city like Battle Creek the retail end is perhaps stronger than it would be in Muskegon, or other ports, with boat lines across the lake to the big markets. Selling at wholesale in the morning and at retail later on has been suggested for the Battle Creek market. Kalamazoo has been investigating markets at Grand Rapids and Detroit, and a committee of which L. H. Stoddard is chairman, recommends a market for fruit and vegetables from six to nine a. m., and for hay, wood and grain the rest of the day; a competent market master, one of whose duties shall be to register names of farmers applying for farm workers, as a means of bringing the man and the farm job together, the master collecting a fee of 15 cents from each farmer registering.

Muskegon is aroused on the city market question, due largely to the efforts of J. O. Fraleigh, a leading farmer of Casnovia, who insists that a large per cent of the fruit and produce of Muskegon county now goes to Grand Rapids. He says: "We want a wholesale market in Muskegon and an opportunity to meet Chicago buyers there and sell our produce to them on a competitive basis. Farmers would prefer to haul to Muskegon, because they can get into the Chicago market 24 hours earlier than they can by hauling to Grand Rapids. That means less cost for refrigeration, and better condition of fruit when it gets to destination. Muskegon boat connections give the city a big advantage. At present a farmer either ships by consignment and doesn't know until a week afterwards whether or no he has dumped his produce on an overloaded market, or he must peddle from store to store or house to house. The man who grows good stuff doesn't

PRODUCTION OF FALL AND WINTER POTATOES.

To indicate the probable relative supply of fall and winter potatoes as compared with other seasons, the Agricultural Department at Washington issued the following figures September 8, covering most of the leading states that produce this class of stock. The figures are given in thousands of bushels—000 omitted:

	Condition.		Forecast 1915.		Final estimates.	
	Sept. 1.	10 yr. Aver.	Sept. 1.	Aug. 1.	1914.	5-yr. Aver. 1909-13.
Maine	73	85	20,900	25,900	33,800	26,077
New York	69	76	30,800	38,100	53,215	36,288
Pennsylvania	85	74	28,100	27,900	28,140	22,653
Ohio	88	72	16,300	16,100	14,250	16,193
Illinois	93	67	13,700	12,900	7,440	9,921
Michigan	70	76	34,500	43,500	44,044	35,273
Wisconsin	81	79	33,800	38,600	37,696	31,625
Minnesota	84	79	31,900	33,300	30,780	25,885
Iowa	91	72	16,800	16,900	12,642	13,227
Nebraska	95	71	12,000	11,700	9,440	7,231
Colorado	88	80	9,800	8,900	8,760	8,161
California	87	88	10,200	10,700	10,350	9,375
Total for above			258,000	284,500	290,557	241,909

want to peddle. He wants a place where he can go, show what he has got, and have the buyer come to him." Kent Co. ALMOND GRIFFEN.

CABBAGE CROP LARGE.

The Department of Agriculture in its September crop report placed the condition of the 1915 crop of cabbage at 92 as compared with 78.4 for the corresponding month of 1914 and 87.4 for the same month of 1913. By states the estimate is as follows:

	Sept. 1, 1915.	Sept. 1, 1914.	Sept. 1, 1913.
Maine	86	91	82
New Hamp... ..	80	92	78
Vermont	90	90	85
Massachusetts ..	81	93	75
Rhode Is.	95	96	80
Connecticut ..	96	95	78
New York	95	85	68
New Jersey... ..	92	90	82
Penn.	94	88	78
Delaware	84	86	80
Maryland	92	76	76
Virginia	92	63	79
W. Virginia... ..	97	78	83
N. Carolina ..	90	69	79
S. Carolina ..	77	66	76
Georgia	78	70	75
Florida	90	82	92
Ohio	97	77	75
Indiana	96	62	60
Illinois	96	49	50
Michigan	91	89	83
N. Dakota	83	80	83
S. Dakota	95	78	73
Nebraska	95	68	50
Kansas	91	57	23
Kentucky	92	64	56
Tennessee	85	70	63
Alabama	80	72	78
Mississippi ..	75	65	76
Louisiana	77	68	71
Texas	75	65	75
Oklahoma	89	47	35
Arkansas	84	58	65
Montana	96	86	90
Wyoming	94	85	92
Colorado	90	92	86
New Mex.	83	92	76
Arizona	85	90	92
Utah	91	95	91
Nevada	90	94	91
Idaho	94	83	91
Wash.	84	83	87
Oregon	93	75	93
California ..	94	91	86
Wisconsin	95	86	89
Minn.	90	80	88
Iowa	95	68	67
Missouri	91	45	28
U. S.	92	78.4	87.4

1915 ONION CROP.

The September government crop report placed the condition of onions at 75.5 as compared with 81.9 for the corresponding month of 1914. Following are the estimates of the different states:

	Sept. 1, 1915.	Sept. 1, 1914.
Maine	80	89
New Hampshire ..	70	90
Vermont	85	93
Massachusetts ..	80	96
Rhode Island	86	90
Connecticut	88	91
New York	56	89
New Jersey	95	84
Pennsylvania	95	86
Delaware	94	87
Maryland	93	82
Virginia	91	70
West Virginia ..	95	76
North Carolina ..	90	78
South Carolina ..	82	70
Georgia	84	78
Ohio	26	80
Indiana	64	74
Illinois	91	61
Michigan	86	90
North Dakota	87	83
South Dakota	96	80
Nebraska	94	76
Kansas	87	78
Kentucky	95	76
Tennessee	91	78
Alabama	84	78
Mississippi	82	77
Louisiana	84	81
Texas	87	79
Oklahoma	91	75
Arkansas	91	76
Montana	95	86
Wyoming	97	93
Colorado	90	92
New Mexico	88	93
Arizona	88	91
Utah	95	96
Nevada	96	96
Idaho	95	86
Washington	92	88
Oregon	96	88
California	96	93
Wisconsin	95	88
Minnesota	90	86
Iowa	93	78
Missouri	90	64
United States	75.5	81.9

A SOUND FIRST MORTGAGE INVESTMENT

We offer for immediate sale (\$500,000) the first portion of (total issue)

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\$1000 6%

\$1,500,000

6% \$500
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Seed Merchants, The Largest Concern of Its Kind in the United States. Established 1855.

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- 1—**Location**—Corner 35th Street and California Avenue on Drainage Canal, in the new Southwest manufacturing district, Chicago, which is steadily increasing in value.
- 2—**Ownership of Land**—Over 70 acres, of which over 60 acres are owned by the company.
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These Bonds are approved and recommended for investment by Greenebaum Sons Bank and Trust Company, capital and surplus \$1,850,000, founded 1855. Securities sold by this old established State Bank have successfully stood every test for three generations. Legal investment for Banks and Insurance Companies. Purchased by the most conservative individual investors.

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Have you a FUR COAT or ROBE that needs a NEW LINING, FASTENERS, or the FUR repaired? THE BLISSFIELD ROBE & TANNING CO., will gladly pay the CHARGES if sent to them, and by return mail will give you a low estimate on putting your FUR GOODS in condition as good as new. If the price is not satisfactory, goods are returned FREE OF CHARGE.

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THE OCTOBER SALE

120 REGISTERED HOLSTEINS 120

Sales Pavillion, Howell, Michigan

Thursday, October 14, 1915

Choice individuals of the best of breeding tuberculin-tested by veterinarians approved by the Michigan Livestock Sanitary Commission. Including among the consignments offered there will be:

- 16 bred to Ypsiland Sir Pontiac DeKol, son of Pontiac DeNijlander, the thrice thirty pound wonder.
- 7 bred to a son of Rag Apple Korndyke 8th and a 30lb. 4 yr. old daughter of Pontiac Korndyke.
- 6 bred to a son of Hengerveld DeKol, the greatest sire of all.
- 6 bred to sons of King Segis Pontiac, sire of the \$50,000 bull.
- 4 bred to a son of Hengerveld DeKol's best daughter.

Granddaughters of King Segis, Hengerveld DeKol, King Segis Pontiac, Pontiac Korndyke, Pontiac Aaggie Korndyke, King of the Butter Kings, and Colantha Johanna Lad.

Ninth Public Sale

The Michigan Breeders Consignment Sale Co.,

H. W. NORTON JR., Mgr., Howell, Mich.

Send for Catalog.

Michigan-bred Holsteins are Freest from Disease.

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 dull est 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.

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

and \$2.10 for five years.

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

Markets.

WEATHER FORECAST.

For week beginning September 29 for region of the Great Lakes, will be one of generally fair and cool weather except that rains are probable Friday or Saturday and in the extreme north part at the beginning of the week.

GRAINS AND SEEDS.

September 28, 1915.

Wheat.—Speculative operations appear to be partly responsible for the break in wheat prices at the opening this week when values slumped three cents. Anticipating that shorts would be caught at the close of the month when they attempted to fill their orders, holders of wheat kept the market up until it was evident that the men needing the grain had supplied themselves through private sources, and then the price for cash goods dropped. Improvement in weather conditions has encouraged delivery in northwestern sections particularly and this has acted as a bearish factor in the market. It must be understood, nevertheless, that the general conservative action of the farmers has done much to keep the market on a firm basis and if persisted in will eliminate a good deal of the speculative element which is likely to become extensive under existing international conditions. Foreign buying has been light and almost entirely confined to Canadian wheat. One year ago No. 2 red wheat was quoted at \$1.07 per bushel. Prices for the past week are:

	No. 2	No. 1	Dec.
Wednesday	1.13	1.10	1.07
Thursday	1.12 1/2	1.09 1/2	1.06 1/2
Friday	1.12	1.09	1.07 1/2
Saturday	1.12	1.09	1.07 1/2
Monday	1.10	1.06	1.05 1/2
Tuesday	1.09	1.06	1.06

Chicago.—September wheat \$1.05; December 95.5c; May 98.2c per bu.

Corn.—Corn deliveries were large the past week which, with a depression in wheat prices, have caused lower quotations to prevail. Farmers are considerably encouraged with the percentage of corn that has properly matured. Argentine is sending some corn to New York City which offerings are reported in excellent condition. American visible supply increased 210,000 bushels. No. 3 corn was quoted locally at 78c per bushel a year ago. Prices for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	76 1/2	79
Thursday	74 1/2	77
Friday	74 1/2	77
Saturday	73 1/2	76
Monday	73 1/2	76
Tuesday	73	75

Chicago.—September corn 68c; December 55.4c; May 57.3c per bushel.

Oats.—Instead of following the two major grains, oats advanced in price this past week. The offerings of this cereal have been relatively small and a very good demand prevails throughout the eastern part of the country. A year ago standard oats were quoted at 49 1/2c per bushel. Prices for the past week are:

	Standard.	No. 3
		White.
Wednesday	38 1/2	37
Thursday	39	37 1/2
Friday	39	37 1/2
Saturday	39 1/2	38
Monday	39 1/2	38
Tuesday	39 1/2	38

Chicago.—September oats 38.1c; December 36c; May 38.1c per bushel.

Rye.—Prices advanced 3c or better and the market is firm and quiet. Cash No. 2 is 95c per bushel.

Barley.—At Milwaukee the malting grades have advanced to 53@61c per bushel. Chicago quotations 51@60c.

Peas.—Lower at \$2.20@2.30 per bu. for new, with sacks included.

Beans.—Increased demand and a poor crop have advanced prices. Farmers should hold October beans for at least \$3 per bushel. Detroit prices are: Cash \$3.05 per bu; October \$2.95. Chicago trade is quiet and steady. Pea beans, hand-picked, choice, are firm at \$3@3.15; common \$2.62@2.80; red kidneys \$3.50@3.60.

Timothy Seed.—Steady. Prime spot \$3.75 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$5.90; seconds \$5.60; straight \$5.20; spring patent \$6.60; rye flour \$6.20.

Feed.—In 100-lb. sacks, jobbing lots

are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$24.50; corn and oat chop \$31.60 per ton.

New Hay.—No. 1 timothy \$16@17; standard timothy \$15@16; light mixed \$15@16; No. 2 timothy \$14@15; No. 1 mixed \$12@13; No. 2 mixed \$10@11; No. 1 clover \$10@11.

Chicago.—Demand good and supply of good hay is light. Inferior grades plentiful and dull. New timothy \$8@17 per ton.

Straw.—Rye straw \$7.50@8; wheat and oat straw \$6.50@7 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—The tone of the market is firm at last week's prices. Extra creamery 25c; firsts 24c; dairy 21c; packing stock 18c.

Elgin.—Market is quiet but light supply of fancy creamery advanced prices 1c. Quotation for the week is 26c per lb.

Chicago.—Market is firm and light receipts brought higher prices. Extra creamery 25 1/2@26c; extra firsts 24 1/2@25c; firsts 23@24c; seconds 21 1/2@22 1/2c; packing stock 19@19 1/2c per lb.

Poultry.—The market is good for all kinds, with prices slightly higher. Live.—Broilers, No. 1, 15@15 1/2c No. 2, 14@14 1/2c; heavy hens 14 1/2@15c; others 11@13 1/2c; ducks 14@15c; geese 10c; turkeys 16c.

Chicago.—Trade is good but liberal receipts brought a decline in prices. Fowls, good weights, 12 1/2@13c; others 10@11c; spring chickens 15c; ducks 13@14 1/2c; geese 10c; guinea hens \$2.75@3 per dozen; turkeys, good weights 14c; spring turkeys 20c.

Eggs.—Market is firm with offerings light. Canned firsts sell at 25c; current receipts 23c.

Chicago.—Market is steady at prices slightly lower than last week. Miscellaneous lots, cases included, 18@23c; ordinary firsts 21 1/2@22 1/2c per dozen; firsts 22 1/2@23 1/2c.

Veal.—Quoted steady at 14@14 1/2c for fancy, and 13@13 1/2c for common.

FRUITS AND VEGETABLES.

Apples.—Are firm and in good demand. Fancy \$2.25@2.50 per bbl, and 75@80c per bu; common \$1@1.50 per bbl, and 40@50c per bushel. At Chicago market is cleaned up and firm. Good stock sells well. Wealthy \$2@2.25; Maiden Blush \$2.25@2.50; Alexander \$1@1.25.

Peaches.—Market active and firmer. Demand is good. Fancy peaches are bringing \$1.25; AA's \$1; A's 90c@1; B's 50c. The market at Chicago is a little firmer. Michigan fruit sells for 50@85c per bushel, 12 1/2@15c per one-fifth bushel basket.

Pears.—Market is steady for good stock, good Bartletts bringing \$4.50@4.75. At Chicago desirable stock is scarce. Michigan Bartletts sell for \$6@7 per bbl; \$1.75@2 per bu; Seckel \$6@7 per bbl; others \$2@3.

Potatoes.—Market is steady for good quality stock. Michigan tubers sell for 25@50c per bu. At Chicago Michigan whites are selling at 38@40c per bushel in carlots.

WOOL.

Boston.—Although transactions were made on a quiet market this past week and the trade may be considered a little dull, brokers everywhere remain confident of continued high prices. The demand, too, is not confined to a few lines but seems to be spreading out to every grade of wool which makes it difficult to substitute and effect savings in manufacturing. Mills are busy and some have even refused foreign orders, being occupied to capacity with domestic business. Much attention is given to South America at present but German brokers are reported to be buying wool liberally for storage till after hostilities cease. Michigan unwashed combing quoted here at 30@35c; do clothing 24@30c; do delaines 28@29c per pound.

DETROIT EASTERN MARKET.

Farmers sold out quickly last Tuesday morning at prices that were steady with the previous week. Potatoes are coming slowly with the price range from 70@85c per bushel. Apples 60c@1; tomatoes 75c@1.50; melons \$1; squash \$1; green peppers 60@75c; peaches 75c@1.50; lettuce 40@50c; cabbage 40@60c; eggs 35c; onions 50@75c; loose hay not coming very freely with prices ranging from \$18@24 per ton.

GRAND RAPIDS.

This year's crop of beans is beginning to move and local buyers are offering \$2.50 for white and \$2.75 for red kidneys. Elbertas are the leading variety of peach in the market at present and are selling at 50@75c. Rains continue to upset the quality of fruit and to make the season disas-

trous for growers. High winds of late have also thinned the apple crop in this section. Grapes are selling at \$1 per dozen for 4-lb. baskets, 16c for 8-lb. baskets and 50c for half-bushels. The potato market is still slow at 40@45c. Hay is bringing \$13@15 per ton. Fresh eggs are a cent higher, being quoted at 24c. Local mills are quoting these prices to farmers for grain: No. 2 red wheat \$1.06; No. 1 white \$1.03; rye 80c; corn 80c; white oats 35c.

LIVE STOCK MARKETS.

Buffalo.

September 27, 1915.

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

Receipts of stock here today: Cattle 180 cars; hogs 90 d. d.; sheep and lambs 53 d. d.; calves 900 head.

With 180 loads of cattle on our market here today, and a good many of them common cattle, our market was a little easier on everything but the right good cattle, which sold steady. There were several loads of stockers here today and not many buyers, and the good ones sold from \$6.25@6.75, while the light stockers sold from \$5@6. We think there will be more buyers here for stockers when they find out the market is open. We think the good cattle will sell pretty good from now on. They had a heavy run of Virginia cattle in New York today and that did not do our market any good. Our bull market was 10@15c better this week and the best butcher stuff was steady.

Receipts of hogs were fairly liberal today, about 90 double decks and general market 5@10c lower than Saturday's best time. All light grades sold this much decline, while the medium and heavy grades in some cases were 5@10c higher. A string of 300-lb. hogs, choice quality, sold at \$8.65 and some choice 240 to 270 lbs. at \$8.75@8.80. Bulk of the selected lights at \$8.85@8.90; a few fancy lots a little more. Best pigs \$8.75; common pigs \$6.50@7.50; roughs \$6.50@7; stags \$5@6. Everything sold and late market was strong, with a fairly good prospect for the next few days.

The market today was active on both sheep and lambs, with prices steady with the close of last week on lambs; sheep firm; most of the choice lambs selling at \$9.50. We look for steady prices the last of the week with moderate receipts.

We quote: Lambs \$9.35@9.50; cull to fair \$7.50@9.25; yearlings \$7@7.50; bucks \$3@5; handy ewes \$5.50@5.75; heavy ewes \$5@5.25; wethers \$6@6.50; cull sheep \$3@4.75; veals, choice to extra \$12.25@12.50; fair to good \$8.50@12; heavy calves \$5@8.50.

Chicago.

September 27, 1915.

Cattle. Hogs. Sheep. Receipts today...17,000 21,000 16,000 Same day 1914...22,351 19,438 54,855 Last week...49,704 74,544 89,324 Same wk 1914...46,405 91,713 172,171 Shipments from here last week amounted to 8,402 cattle, 20,814 hogs and 11,869 sheep, comparing with 6,782 cattle, 22,149 hogs and 8,960 sheep a week earlier and 20,560 cattle, 15,493 hogs and 61,736 sheep a year ago.

Cattle are in moderate supply for Monday, and prices are generally stronger. Hogs are about 5c higher, with sales at \$6.70@8.50 with a light run. Hogs received last week averaged but 231 lbs., a great falling off in weight. Sheep and lambs are 15@25c higher, with a \$9.25 top for prime range lambs.

Cattle prices were seriously depressed last week by too generous offerings, with a Monday run of 26,000 head, followed by much larger offerings on the following day than are usually seen on Tuesday, and the break in values for the two days averaged fully 25c. Receipts on Wednesday of only 12,500 head caused a rally in prices for the better class, but the rank and file of the cattle failed to sell any higher. Prime corn-fed beefs are becoming scarcer all the time, and the prospects are favorable for owners of such, but so long as western rangers are marketed at the present rate, their native grass-fed competitors will be discriminated against by killers, since the range cattle dress more satisfactorily. The bulk of the steers received last week sold at \$8@10, with inferior to plain grass steers selling at \$5.25@6.50, common to medium warmed-up steers at \$6.60@7.75, medium to good handy steers at \$7.80@8.50 and good to choice corn-feds at \$8.60@9.50. For choice to extra fine steers buyers paid \$9.60@10.40, the top being as high as a week earlier, and good to prime little yearlings sold at \$8.75@10.25, with choice lots at \$9.50 and over and sales made all the way down to \$7.25@8.50 for common to fair yearlings. Butcher cows and heifers had an outlet at \$4.60@8.90, with the best cows taken at \$7@7.50,

while prime corn-fed yearling heifers were the highest sellers invariably. Cutters sold at \$4@4.55, canners at \$2.50@3.95, and bulls at \$4@7. Calves were disposed of at much lower prices, desirable light-weight vealers going at \$10@11 per 100 lbs., while the heavier calves brought \$4@8.50. Western range cattle arrived freely, including some good consignments from the Canadian northwest, and sales were made of cows, heifers and steers on the basis of \$5.25@8.65.

Hogs have fluctuated wildly in prices at various times of late, quotable changes being governed largely by the volume of the receipts. At one time the market was strongly on the down grade, because the packers took advantage of fairly large supplies and the absence of the usually good eastern shipping demand to force sharp breaks, but this caused country shippers to withhold supplies so largely as to bring about good recoveries. Recent receipts averaged 238 lbs., comparing with 248 lbs. one month earlier, 247 lbs. one year ago and 217 lbs. two years ago. The best light weight hogs are slower to sell higher much of the time than the other grades, and pigs have to be sold at a big discount from hog prices. Hogs continue to sell at much lower prices than those for the last three years, and the numerous grassy offerings are very bad sellers, as they show a heavy shrinkage on the killing sheets. Late in the week hogs sold at an extreme range of \$6.60@8.45, the highest prices of the year, with the best pigs at \$8 and sales down to \$5.50 for inferior ones. A week earlier hogs went at \$6.10@8. Prime light hogs sold the highest and heavy shippings hogs at \$7.45@8.10.

Lamb and sheep receipts from week to week look extremely small in number when placed in comparison with those for previous years, and it is natural that sales should be made at higher prices than in past years. Range and native lambs make up the principal part of the runs, with fair supplies of native ewes, and a small showing of wethers and yearlings. Most of the range flocks of lambs grade high and sell better than the native lambs. Omaha is getting liberal supplies of range lambs, with feeders greatly predominating in numbers, as well as at other outside western markets. At the week's close lambs sold at \$6.75@9, yearlings at \$6@7.15, wethers at \$5.50@6.45, ewes at \$3@5.75 and bucks at \$4.25@5. Range lambs closed 25@40c higher for the week.

Horses were in large supply last week, and army purchases were on the usual liberal scale at unchanged prices. Sales were made of inferior to good farm chunks at \$60@160, mares going highest, while nice wagoners sold at \$160@200 and drafters at \$210@285.

CROP AND MARKET NOTES.

Michigan.

Calhoun Co., Sept. 21.—Threshing not done. Corn good, and ready for cutting in about a week. Beans not promising, being blighted badly. Potatoes ripening unevenly on account of blight, also some rot reported. Some potatoes being marketed at 25c per bushel. Quite a lot of hay being disposed of.

Tuscola Co., Sept. 23.—Wheat yielding 10 to 25 bushels; oats harvested in fair condition, yielding 40 to 50 bushels per acre. Corn a poor crop and fields very wet. Very little fall wheat sown. Beans poor on account of blight and wet weather and many fields will not be harvested. Potatoes rotting badly. Clover seed not filling well. Wheat 96c; oats 31c; beans \$2.60; eggs 21c; butter 30c.

New York.

Niagara Co., Sept. 22.—Wheat and oats yielded well. Corn is fairly good. Alfalfa looking good. Potatoes and beans about one-third of a crop. Peaches are a drag on the market, they are not standing up well, and there is no profit in the crop. Apples bringing \$2.50@3 tree run. Eggs 26c; butter 28c.

Ohio.

Greene Co., Sept. 21.—Wheat an average yield and oats better than usual. Potatoes were never better, very little blight and rot. Corn good crop and harvesting begun. Some ground plowed but no seeding done. Clover seed not yielding well. Alfalfa good. The usual amount of cattle and lots of feeding hogs on hand. Late apples a large crop. Wheat 99c; corn 75@80c; potatoes 40c; butter-fat 25 1/2c.

Missouri.

Warren Co., Sept. 20.—Wheat averaged 15 bushels; oats 40 bushels and good quality. Potatoes a good crop; bean fair crop. Corn is ripening and will be good. Not much plowing yet as it is too dry. A few cattle and some hogs and sheep being fed. Pears and late apples good. Wheat \$1, wool 28c, butter fat 25c, butter 30c.

DETROIT STOCK YARDS CLOSED.

As announced in the last issue the Detroit Stock Yards are closed for final cleaning and disinfection before raising the quarantine. In the meantime shipments are being made direct to packing houses.

LIVE STOCK AWARDS AT THE STATE FAIR.

(Continued from page 303).

Ram, 1 yr.—1st, 2nd and 4th, Wood & Son; 2d, Calhoun Bros; 3rd, Moore.
Ram, lamb—1st and 2d, J. M. Shaw & Son, Madison, Ohio; 3rd and 4th, Wood & Son.

Ewe, 2 yrs. or over—1st and 4th, Moore; 2nd and 5th, Wood & Son; 3rd, Shaw & Son.

Ewe, 1 yr.—1st and 3rd, Shaw & Son; 2nd and 4th, Wood & Son.

Ewe, lamb—1st and 4th, Shaw & Son; 2nd and 5th, Wood & Son.

Flock—1st, Wood & Son; 2d, Moore; 3rd, Shaw & Son; 4th, Calhoun Bros.

Breeders' young flock—1st, Wood & Son; 2nd, Shaw & Son; 3rd, Moore.

Lamb flock—1st, Shaw & Son; 2nd, Wood & Son; 3rd, Moore; 4th, Calhoun Bros.

Get of sire—1st, Shaw & Son; 2nd, Wood & Son; 3rd, Moore; 4th, Calhoun Bros.

Grand champion ram—Wood & Son.

Grand champion ewe—Moore.

Oxford Downs.

Ram, 2 yrs. or over—1st, Kope Kon Farms, Kinderhook, Mich.; 2nd and 3rd, Wm. Newton, Pontiac, Mich.

Ram, 1 yr.—1st, Kope Kon Farm; 2nd, Newton.

Ram, lamb—1st and 3rd, Kope Kon Farm; 2nd, Newton.

Ewe, 2 yrs. or over—1st and 2nd, Kope Kon Farm; 3rd and 4th, Newton.

Ewe, 1 yr.—1st and 2nd, Kope Kon Farm; 3rd and 4th, Newton.

Ewe, Lamb—1st and 3rd, Kope Kon Farm; 2nd and 4th, Newton.

Flock—1st, Kope Kon Farm; 2nd, Newton.

Breeders' young flock—1st, Kope Kon Farm; 2nd, Newton.

Lamb flock—1st, Kope Kon Farm; 2nd, Newton.

Get of sire—1st, Kope Kon Farm; 2nd, Newton.

Grand champion ram and ewe—Kope Kon Farm.

Leicesters.

All first awards in this class were made to Wm. Newton, Pontiac, Mich., the only exhibitor.

Cheviots.

Ram, 2 yrs. or over—1st, Raymond D. Grieve, Xenia, Ohio; 2nd and 3rd, Wayne C. Postle, Camp Chase, Ohio; 4th, A. C. Grieve, Xenia, Ohio; 5th, Geo. C. Woodman, Owosso, Mich.

Ram, 1 yr.—1st and 3rd, Postle; 2d, Grieve & Son; 4th and 5th, Woodman.

Ram, lamb—1st, 2nd, R. D. Grieve; 3rd and 5th, Woodman; 4th, Postle.

Ewe, 2 yrs. or over—1st, R. D. Grieve; 2nd and 5th, Postle; 3rd and 4th, Grieve & Son.

Ewe, 1 yr.—1st, Grieve & Son; 2nd and 3rd, R. D. Grieve; 3rd and 5th, Postle.

Ewe, lamb—1st and 2nd, R. D. Grieve; 3rd, Grieve & Son; 4th, Postle; 5th, Woodman.

Flock—1st, R. D. Grieve; 2nd, Postle; 3rd, Grieve & Son; 4th, Woodman; 5th, Wm. Newton, Pontiac.

Breeders' flock—1st, R. D. Grieve; 2nd, Postle; 3rd, Woodman; 4th, Newton.

Lamb flock—1st, R. D. Grieve; 2nd, Postle; 3rd, Woodman; 4th, Newton.

Get of sire—1st, R. D. Grieve; 2nd, Postle; 3rd, Woodman; 4th, Newton.

Grand champion ram and ewe—R. D. Grieve.

Cotswolds.

Ram, 2 yrs. or over—1st and 2nd, P. W. Heintz, Clyde, Ohio; 3rd and 4th, Wm. Newton, Pontiac, Mich.

Ram, 1 yr.—1st, 2nd and 4th—Heintz; 3rd, Newton.

Ram, lamb—1st and 2nd, Heintz; 3rd and 4th, Newton.

Ewe, 2 yrs. or over—1st and 2nd, Heintz; 3rd and 4th, Newton.

Ewe, 1 yr.—1st and 2nd, Heintz; 3rd and 4th, Newton.

Ewe, lamb—1st and 2nd, Heintz; 3rd and 4th, Newton.

Flock—1st, Heintz; 2nd, Newton.

Breeders' young flock—1st, Heintz; 2nd, Newton.

Lamb flock—1st, Heintz; 2nd, Newton.

Get of sire—1st, Heintz; 2nd, Newton.

Grand champion ram and ewe—cup—Heintz.

Lincolns.

Ram, 2 yrs. or over—1st and 2nd, Sunnyside Farm, DeGraff, Ohio; 3rd, Eph. Knight, Gagetown, Mich.; 4th and 5th, Wm. Newton, Pontiac.

Ram, 1 yr.—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight.

Ram, lamb—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight; 5th, Newton.

Ewe, 2 yrs. or over—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight; 5th, Newton.

Ewe, 1 yr.—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight; 5th, Newton.

Ewe, lamb—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight; 5th, Newton.

Flock—1st, Sunnyside Farm; 2nd, Knight; 3rd, Newton.

Breeders' young flock—1st, Sunnyside Farm; 2nd, Knight; 3rd, Newton.

Lamb flock—1st, Sunnyside Farm; 2nd, Knight; 3rd, Newton.

Get of sire—1st, Sunnyside Farm; 2nd, Knight; 3rd, Newton.

Grand champion ram and ewe—cup—Heintz.

Feeders have been paying up to \$8.60 recently at Omaha for feeding lambs while packers at the same time were getting prime fat lots at \$8.50. This shows that feeders have confidence in the future market and few of them think they are treading on dangerous ground although high first cost together with high feed bills, makes it necessary for them to get high prices at the market when offerings are in finished condition.

Sunnyside Farm; 3rd and 5th, Knight; 4th, Newton.

Ewe, 1 yr.—1st and 2nd, Sunnyside Farm; 3rd and 4th, Knight; 5th, Newton.

Ewe, lamb—1st and 2nd, Sunnyside Farm; 3rd, 4th and 5th, Knight.

Flock—1st, Sunnyside Farm; 2nd, Knight; 3rd, Newton.

Breeders' young flock—1st, Sunnyside Farm; 2nd, Knight.

Lamb flock—1st, Knight.

Get of sire—1st, Sunnyside Farm; 2nd, Knight.

Grand champion ram and ewe—Sunnyside Farm.

Hampshires.

Ram, 2 yrs. or over—1st, Kope Kon Farm, Kinderhook, Mich.; 2nd and 4th, Monroe Stock Farm, Lucas, Ohio; 3rd, R. A. Kyser, Lowell, Mich.; 5th, Wm. Newton, Pontiac, Mich.

Ram, 1 yr.—1st and 3rd, Monroe Stock Farm; 2nd, 4th and 5th, Kyser.

Ram, lamb—1st, 2nd and 5th, Monroe Stock Farm; 3rd and 4th, Kope Kon Farm.

Ewe, 2 yrs. or over—1st and 3rd, Monroe Stock Farm; 2nd, Kope Kon Farm; 4th and 5th, Kyser.

Ewe, 1 yr.—1st and 3rd, Monroe Stock Farm; 2nd and 5th, Kope Kon Farm.

Ewe, lamb—1st, 2nd and 4th, Monroe Stock Farm; 3rd and 5th, Kope Kon Farm.

Flock—1st, Monroe Stock Farm; 2d, Kope Kon Farm; 3rd, Kyser; 4th, Newton.

Breeders' young flock—1st, Monroe Stock Farm; 2nd, Kyser; 3rd, Kope Kon Farm; 4th, Newton.

Lamb flock—1st, Monroe Stock Farm; 2nd, Kyser; 3rd, Kope Kon Farm; 4th, Newton.

Get of sire—1st, Monroe Stock Farm; 2nd, Kyser; 3rd, Kope Kon Farm; 4th, Newton.

Grand champion ram—Kope Kon Farm.

Grand champion ewe—Monroe Stock Farm.

Horned Dorsets.

Ram, 2 yrs. or over—1st and 2nd, Hamilton Farms, Gladstone, New Jersey; 3rd, Sunnyside Farm, DeGraff, Ohio; 4th and 5th, Geo. C. Woodman, Owosso, Mich.

Ram, 1 yr.—1st and 3rd, Hamilton Farms; 2nd and 4th, Sunnyside Farm; 5th, Woodman.

Ram, lamb—1st and 2nd, Hamilton Farms; 3rd and 4th, Sunnyside Farm; 5th, Woodman.

Ewe, 2 yrs. or over—1st and 2nd, Hamilton Farms; 3rd and 4th, Sunnyside Farm; 5th, Woodman.

Ewe, 1 yr.—1st and 3rd, Hamilton Farms; 2nd and 4th, Sunnyside Farm; 5th, Woodman.

Ewe, lamb—1st and 3rd, Hamilton Farms; 2nd and 4th, Sunnyside Farm; 5th, Woodman.

Flock—1st, Hamilton Farms; 2nd, Sunnyside Farm; 3rd, Woodman; 4th, Wm. Newton.

Breeders' young herd—1st, Hamilton Farms; 2nd, Sunnyside Farm; 3d, Woodman; 4th, Newton.

Lamb flock—1st, Hamilton Farms; 2nd, Sunnyside Farm; 3rd, Woodman; 4th, Newton.

Get of sire—1st, Hamilton Farms; 2nd, Sunnyside Farm; 3rd, Woodman; 4th, Newton.

Grand champion ram and ewe—Hamilton Farms.

Southdowns.

Ram, 2 yrs. or over—1st, Monroe Stock Farm, Lucas, Ohio; 2nd, Kope Kon Farm, Kinderhook, Mich.

Ram, 1 yr.—1st, Geo. W. Heskett, Fulton, Ohio; 2nd, Monroe Stock Farm; 3rd, Kope Kon Farm.

Ram, lamb—1st, Kope Kon Farm; 2nd and 5th, Monroe Stock Farm; 3rd and 4th, Heskett.

Ewe, 2 yrs. or over—1st, Monroe Stock Farm; 2nd and 4th, Kope Kon Farm; 3rd, Heskett.

Ewe, 1 yr.—1st, Monroe Stock Farm; 2nd, Heskett; 3rd and 4th, Kope Kon Farm.

Ewe, lamb—1st, Kope Kon Farm; 2nd and 3rd, Monroe Stock Farm; 4th and 5th, Heskett.

Flock—1st, Monroe Stock Farm; 2nd, Kope Kon Farm; 3rd, Heskett.

Breeders' young flock—1st, Monroe Stock Farm; 2nd, Kope Kon Farm; 3rd, Heskett.

Lamb flock—1st, Monroe Stock Farm; 2nd, Heskett; 3rd, Kope Kon Farm.

Get of sire—1st, Monroe Stock Farm; 2nd, Heskett; 3rd, Kope Kon Farm.

Grand champion ram and ewe—Monroe Stock Farm.

Veterinary.

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

Nasal Gleet—Impaction.—Two years ago I bought a team of horses; one of them had spells, when he would discharge white mucus from nose, and this horse died last winter with stoppage of the bowels. Now, his mate is acting much the same and coughs some; also has discharge from nose, besides a rattling in the head. There has been no swelling in throat nor does it act like a cold. I am afraid it is something the other horses will get. O. S. S., Ypsilanti, Mich.—You had better have this one horse, and perhaps all your other horses tested with mallein, but, of course, this is work that should be done by a competent Vet.

Bruised Udder—Garget.—I have a black cow five years old, which came fresh two months ago. The right quarter of udder is caked and hard and the milk she gives is mixed with a little blood. The milk from her other three teats appears to be all right. I have been applying salt water with some vinegar, but so far as I can see it does not help her. W. B., Aloha, Mich.—Give cow 1 dr. potassium iodide and 1 oz. of sulphate of soda at a dose in feed twice a day. Apply one part iodine and nine parts fresh lard to caked portion of udder three times a week.

Bruised Leg.—I have a horse that was kicked on hind fetlock, causing lameness which disappeared soon after I applied vinegar and wormwood, but now the joint swells and I would like to know what to do for it. H. M. C., Imlay City, Mich.—Give your horse a teaspoonful of acetate of potash at a dose in feed twice a day and the stocking will perhaps leave his leg.

Puffed Hock.—One month ago a swelling appeared in hock of my mare and I have applied blisters without obtaining satisfactory results. J. E. B., Reed City, Mich.—Apply equal parts tincture of iodine and spirits of camphor every day or two, but remember that bunches of this kind are not easily removed.

Indigestion—Sore Throat.—I have a mare that is dumpish and when drinking a portion of water returns through her nostrils, and usually has a coughing spell every time she drinks. She had a bad attack of horse distemper last winter; since then she has been in above condition. W. H., Lum, Mich.—Apply one part tincture iodine, two parts camphorated oil to throat once a day. Give her ½ oz. powdered licorice, a tablespoonful of ground gentian and a teaspoonful of hyposulphite of soda at a dose in feed two or three times a day.

Sprained Hip Joint.—I have a two-year-old colt that became tangled in wire fence three months ago; since then the whirl bone joint snaps and he goes some lame. When walking you can hear joint crack, but he is not sick. B. D., Capac, Mich.—Apply equal parts of turpentine, aqua ammonia and olive oil to hip joint every day or two.

Constipation—Unthrifty Condition. I have a colt that does not thrive; his coat is rough and thin. I feed him one quart of oats and one quart of bran three times a day. Also add a little linseed, but he seems bound up in bowels. I would also like to know how to build an old horse up and put him in condition. Have been feeding him six quarts of oats, but he keeps thin and is not saleable. L. Q., Mt. Clemens, Mich.—Give your horse 1 dr. of powdered nux vomica, ½ oz. fluid extract of gentian and ½ oz. of Fowler's solution at a dose three times a day. Feed less oats and some corn.

Hogs Cough.—I have 30 hogs running in a grass pasture, but there has not been much for them to eat, so I feed them old corn once a day and then plenty of green corn in the stalk. These pigs are now in good condition, but for the past four weeks they have been coughing some and lately some of them breathe quick, and are troubled with loss of appetite. I have noticed that their bowels are constive. W. M., Trenton, Mich.—Mix together equal parts of ground ginger, powdered licorice, ground gentian, bicarbonate of soda and charcoal. Give each of your hogs a teaspoonful at a dose two or three times a day.

Manager Wanted

for 200-acre dairy farm, near Detroit, M. A. C. graduate preferred. Box M-102, Mich. Farmer.

WE CAN SELL STOCKERS and feeders, also feeding lambs, consign hereto us, or if you are in the market for feeding stock write or wire us. HARPSTER COMMISSION COMPANY, Toledo Union Stock Yards, Toledo, Ohio.

FARMERS—We are paying from three to five cents above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., Detroit, Mich.



A Long-Wear Coat For Farmers.

At first we made DUXBAK Clothes for Sportsmen only. But many farmers bought them anyhow because they both shed rain and wore like iron, so we now make the

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SPECIAL FARM COAT

for the man who must work outdoors in all sorts of weather, or who drives about the country in an automobile. DUXBAK is rain-proof, ventilated, soft and comfortable at all times. Made of exactly the same material as our famous weather-resisting (Cravenette) Sportsmen's Clothes. DUXBAK COATS in use in good condition after years of wear.

4 Buttons, square corners—two rain-proof outside set in pockets and one outside breast pocket. Large inside pocket for memo books, pencils, etc., and small inside pocket for tobacco, matches, etc. Body and upper half of sleeves lined throughout with Cravenette-protected material. Cuffs and collar corduroy faced to button close. You'll get the value out of this coat in the first season's wear.

A FREE BOOK ABOUT STRONG CLOTHES Write for your complete Catalogue of DUXBAK Outdoor Clothes—more wear with less repair.

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Time is money. So why lose time by looking for a wrench when 25c buys our patent wrench holder to be fastened on plow beam or handle. Fits any plow: made of spring steel and will last a lifetime. Money refunded if not more than satisfied—write today—save time tomorrow. Patent Specialty Co., Box 742-A Elmhurst, Ill.

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FOUR TO SIX TONS OF ALFALFA, 50 to 100 bushels of corn to the acre, \$100 to \$500 an acre from fruit or truck, opportunities for the stock raiser and dairyman, a climate which means two to four crops a year, pleasant home locations, attractive land prices, are things the South offers homeseekers. Our publications and special information on request.

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FARMS, GOOD, CHEAP, PROFITABLE

UNUSUAL OPPORTUNITIES NOW State Board of Agriculture, Dover, Del.

FARMS WANTED—We have direct buyers. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 10 Palace Bldg., Minneapolis, Minn.

WHY PAY RENT when you can buy the best farm land in Michigan at from \$12 to \$20 an acre on easy terms. Write for particulars, STAFFELD BROTHERS, Owners, 15 Merrill Bldg., Saginaw, West Side, Mich.

Central Michigan Farms. Very best stock, dairy and general farming country. Splendid water, schools, roads, markets. Real bargains to offer. Write for list A. Benham & Trim, Hastings, Mich.

110 Acre Farm For Sale on contract, easy terms. A great bargain. Ask for full particulars regarding any size farm you want to buy in Eaton Co. 640 acre stock farm, fenced. Will sacrifice. M. HARTZ, Charlotte, Michigan.

SEND DESCRIPTION OF YOUR FARM OR RANCH! We have Cash Buyers. Don't Pay Commission. Write NATIONAL REAL ESTATE EXCHANGE ASSOCIATION, Dept. No. 8, PERU, ILLINOIS.

FINE FARM IN CANADIAN NORTHWEST FOR SALE 320 acres good farm land, one mile from Lashburn, Saskatchewan. On the Can. Northern Ry. Price reasonable for cash, or could be sold on terms. For particulars write B. B. MUIR, LASHBURN, SASK.

For Sale—86 acre farm, good buildings, all work land, 1 ½ miles from Main St., ¾ mile from Albion College and High School. Price \$12,000. MRS. H. E. DESMOND, ALBION, MICH.

80 Acres, 32 under cultivation, new house and basement barn, crops, stock and tools. Lynus J. Macomber, R. 3, Gaylord, Mich.

EXPERIENCED Orchard man desires work picking and packing fruit or other farmwork. State wages. Herbert E. Shenkel, Minnewaukan, N. Dakota.

Wanted Woman From 25 to 45 yrs. for general housework on a small farm near Detroit, a good home and good pay. Address Box H, Care Mich. Farmer, Detroit.

HAY OUR NEW LOCATION—623-625 Wabash Bldg., Pittsburgh, Pa. Daniel McCaffrey's Sons Co.

FRUIT Growers, we want your entire crop. Highest market prices. Write for stencil. THE E. I. Richmond Co., Detroit, Mich.

Grange.

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

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

ANOTHER CO-OPERATIVE GRANGE VENTURE.

The principles of co-operation are being given a practical test in the little village of Lincoln, Alcona county. The officers of the local Grange at this point canvassed the matter last winter and, after getting a copy of the co-operative law of 1913, set out to enlist their members and neighbors in forming a co-operative store association. This store has been in busy activity since March. Sixty shares have been taken at \$10 each and on this small capital success thus far is standing. Mr. W. J. Somers is president of the association, as well as master of the Lincoln Grange, while Secretary A. Jack, of the Grange, has been made manager of the store. The latter is a hustling enthusiast for the plant and its possibilities. Beginning with a meager stock, he is enlarging as returns of the business will warrant. Groceries and staple farm and home utensils were first put in, but dry goods will be added this fall.

This little co-operative store, owned by farmers and patronized by themselves and many others, did a business of \$900 the first month, \$1,100 the second and from \$1,200 to \$1,300 each month since. Careful auditing by the board of directors assures the patrons that there will be satisfying dividends at the end of the year. A noteworthy feature of the store trade is that butter and eggs have been paid for in cash from the first, although much of the money thus expended was spent for goods at the other stores of the village, goods which the "co-op" does not yet carry. One result has been that the other stores now pay cash for butter and eggs, something they had never done before.

Here is a group of people with confidence enough in a principle to apply it by paying one of their own number a reasonable salary to attend to their business affairs, instead of allowing an outsider to attend to them for whatever unlimited profit he can make off from their incomes. Moreover, it makes a social center of their very own in town. On picnic days and other special occasions, the Ladies Aid sells ice cream from one end of the store and people rally about it, visiting and resting in a way good to see.

JENNIE BUELL.

ANOTHER NEW GRANGE IN KENT COUNTY.

It was my pleasant privilege to meet a goodly company of the farmers of Vergennes township, Kent county, on Tuesday evening, August 24, and assist Brother T. H. McNaughton in the organization of a Grange.

Brother McNaughton had previously talked with representative people of the community and arranged the date. The people were all ready for the organization, and we lost no time. We enrolled 35 charter members, elected and installed officers and obligated and instructed the new Grange in the unwritten work.

We have seldom met a company of

people so well situated to carry on successfully the work which they have now begun. As farmers they have been more than ordinarily successful. The fine community spirit is evidenced by a prosperous country church and very good roads over which to reach it. Now they have wisely added the Grange as a means to the great end of a better rural community.

They are united in their attitude toward the work, they have in large measure the ability to carry it on, and we hope and believe that Vergennes Grange will amply justify by its fruits the effort expended in its organization and in its future activities.

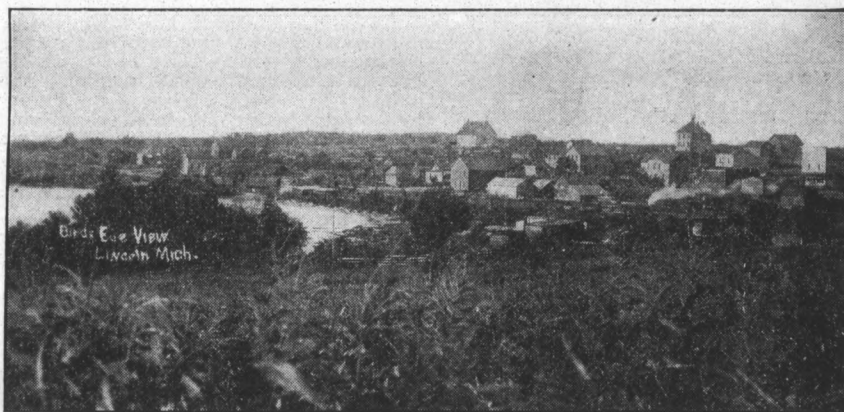
Kent county has been for years one of the strongest Grange counties in the state. Not only has it contained a goodly number of subordinate Granges, but among them have always been and are now, a few that are very strong. This fact is due largely to wise and efficient leadership. Kent county has some of the best Grange lecturers to be found anywhere. They have kept their Granges busy with just the kind of work that is sure to pay out in any community. Then, too, an active Pomona has kept kindly watch over the subordinate Granges and given assistance when it was possible.

The writer shares in a measure, the happiness of the good Grange workers of Kent county over the advent of this new Grange, and trusts that in many other counties such evidences of Grange growth may be forthcoming.

W. F. TAYLOR.

NOTICE.

To Patrons of Michigan:—The executive committee, having canvassed the nominating votes of the subordinate Granges of the state for places



Where a Successful Grange Co-operative Store is Located.

upon the executive committee for the term of 1916-18, report that the following persons received the endorsement of the required number of Granges and that their names will, therefore, appear upon the advisory election ballot, namely, N. P. Hull, Burr B. Lincoln, T. H. McNaughton and William H. Welsh.

JENNIE BUELL.

Secretary.

AMONG THE LIVE GRANGES.

Kalamo Grange conferred the third and fourth degrees on 11 candidates at their meeting September 11. An entertaining and instructive time was enjoyed, after which a bountiful supper was partaken. The evening was so pleasantly spent that the meeting did not close until nearly 12 o'clock. Seven candidates have recently been elected who have not taken the degrees.

COMING EVENTS.

A corn contest under the auspices of the Grange and rural schools will be held in November in Ann Arbor.

Wayne County Pomona will meet with Belleville Grange, Saturday, October 16. Lenawee and Washtenaw Pomonas will be the guests.

Ingham County Pomona Grange will meet with White Oak Grange, Saturday, October 9. Good speakers will entertain and interest you and an excellent program is being prepared. Come and enjoy it with us. Everybody invited. Dinner served by the ladies of White Oak Grange.

Farmers' Clubs

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

MAKING THE MOST OF THE FARMERS' CLUBS.

In a previous article the writer mentioned what to him seems an undisputable fact, namely that while the Farmers' Clubs are accomplishing a great good, they are not being made of the greatest practical use in the majority of Club communities in the state. The Club meetings have unquestionably been of great social benefit in every neighborhood where they are held. They have also tended to broaden the mental horizon of the members to a marked degree, yet in the matter of actual practical business value they have in few cases been utilized to the extent which would be both possible and practical in any community.

Farmers do not, of course, want to "talk shop" continuously when attending social meetings of this kind, yet it would be possible to have one feature of the program in a most helpful manner without endangering the social or other educational value of the meeting.

Farmers' Clubs in counties where county farm bureaus have been organized and county agricultural agents established, have a very valuable asset which might be utilized in broadening this line of Club work. Without question any man who has served as county agricultural agent in any county for one or more years has gained a

point of view, has vastly less real knowledge with regard to agriculture as a whole, than the everyday farmer of the next generation if future progress can be judged by the progress which has been made in the recent past.

It is true that the average farmer is making great progress along these lines, but his progress would be still more rapid if every opportunity to that end were improved. The Farmers' Club is undoubtedly a very valuable unit for the study and discussion of these problems, and in every county where an agricultural agent is working, the Farmers' Clubs will be making a great mistake if they do not utilize his services in many ways. The first step in that direction might properly be to ask him to lay out a course of study or discussion which would be most helpful to the members than follow that plan with such variations as may from time to time be deemed expedient.

Unfortunately however, county farm agents are not yet established in the majority of Michigan counties. This need not, however, deter the members of any Club from following a similar plan. These Clubs may freely call for assistance along similar lines upon the Agricultural College, the Office of Farm Management and Field Studies, and upon farmers who have had peculiarly successful experiences along any line, with confidence that these calls will meet with a cheerful response. This would indeed be making practical use of the Farmers' Club along most beneficial lines, but this suggestion constitutes but the beginning of what might be done in this direction.

CLUB DISCUSSIONS.

A Pioneer Meeting.—Although the Ingham County Farmers' Club has not been reported in your columns lately, it is just as lively and as much in earnest as ever. The September meeting was held at Fairview with Mr. and Mrs. Lyman Smith. Over 100 were present, and aside from music and recitations, Mrs. W. A. Milton gave pioneer reminiscences. She graphically described the shanty which gave way to the split log house, the stick chimney, washing in a trough with a home-made washboard, benches instead of chairs, candles, dipped, later made with the aid of a mold—but one was not troubled with weak eyes. The women spun and wove and made their own garments. The log schoolhouse with benches around the outer wall, and later the little red schoolhouse with its spelling school, the floor filled with trundle beds at night, etc. Those are days with pleasant memories and Yankee push have made the homes of the twentieth century farmer. The discussion was interesting and participated in by the sons and daughters of those people who settled in Ingham county from 1836 to 1844 and are largely pioneers themselves. The next meeting will be with Mr. and Mrs. Sylvester Davis at the Maples. Aside from the program as published in the year book, there will be a regular old-fashioned debate upon, "Resolved, that we are getting all the good there is from our farm organizations." President Ives will take the affirmative and W. H. Taylor the negative and each has power to select good arguments.—Mrs. Tanswell, Cor. Sec.

Our Foreign Relations.—The Ellington-Almer Farmers' Club met in September with Mr. and Mrs. D. M. Graham in Caro, when all had a most enjoyable time. H. P. Bush gave an interesting talk on the subject of our commercial relations with foreign nations, advancing the idea that at no distant day we shall need to get in closer touch with other nations in order to find markets for our products. A good literary and musical program was rendered. A bountiful chicken pie supper was served by Mrs. Graham and her able assistants, "topped off" with ice cream and cake. The next meeting will be held with Mr. and Mrs. Max Zemke on October 14.

Children's Day.—The China Farmers' Club, of St. Clair county, met in September at the home of Charles Eisen, in St. Clair township. The program was devoted almost entirely to the children of the Club and consisted largely of songs and recitations by them, followed by an explanation of boys' and girls' club work by the county agent. Other subjects that were of particular interest to the farmers of the community were also discussed informally during the day.—

Poultry.

BUY MALE BIRDS IN FALL.

The male birds are half the flock and fall is the best time to secure good ones at reasonable prices. Most breeders are overcrowded in the fall and will give better quality for the money than later in the season. Birds secured in fall have time to get acclimated and accustomed to new surroundings and ought to be in the pink of condition when the breeding season arrives. We have no trouble with roosters fighting when we get our breeders in the fall and put them together. But if we put strange birds with others, near the breeding season, we always have trouble with fighting roosters.

We make it a rule to keep a few extra males to draw from if a bird gets crippled or disabled. Some say there is no use feeding so many roosters. The farmer has plenty of feed, and we prefer to feed the extra birds and be sure of good hatches. It is difficult to replace good male birds late in the season. When we buy good stock of an established breeder we are not only buying so much flesh, bones and feathers, but are getting what has taken the breeder years to produce.

To save the price of good males too many farmers keep birds from their own flock year after year. This causes a flock to degenerate in size and vigor. If we are raising market, poultry we cannot afford to inbreed; we must consider size and vigor. At harvest time we see the results of sowing poor and imperfect seed. At hatching time we find out the evil effects of inbreeding and using inferior male birds. If you cannot afford to buy a number of good roosters get one extra good one and pen him with 12 or 15 of your best females.

Money can be saved by buying yearling males which breeders often sell at a low price because they are so closely related as to make it unwise to use them another season. These birds are better breeders the second year than the first—their chicks are much stronger.

Indiana. FRANCES WOOD.

HOW TO SELECT HIGH-PRODUCING HENS.

According to observations of a poultry expert, late molting is the accompaniment of late laying, but late molting does not appear to affect the earliness of spring laying; those hens that molted late molted much more rapidly than those that molted early, and hence lost less time. It has been found at the New York Cornell Station that all of the high producers and some of the low vitality low producers have pale shanks, but that any bird with yellow shanks after a year of laying, whether it be the first, second or third years of egg production, has been a poor producer for that year. If a bird starts with pale shanks the shanks will not grow darker, and nothing can be told of the egg production from the shanks alone.

It was further found that those birds which had soft pliable combs in the fall were in general better producers than those with hard or dried-up combs. It was found that there was a very close correlation between a combination of the three factors (time of molting, color of shank, and texture of comb), and egg production.

Studies at the Connecticut Storrs Station tend to show that those birds that normally have a considerable amount of yellow pigment in their ear lobes before they begin to lay will lay this yellow color out. By means of the ear lobes it is a comparatively easy matter to go through a flock of utility White Leghorn pullets eight

months after they are hatched and pick out those that have not laid. The ear-lobe test simply indicates whether the bird is laying or not and does not necessarily indicate that a bird will or will not lay heavily throughout the year.

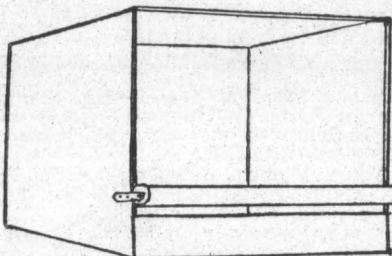
WINTER GREENS FOR THE HENS.

Lawn clippings and second crop clover make the best green feed for the laying hens in winter. Clippings taken from the lawn should be spread on the barn floor, away from the sunlight, and dried for 24 or 48 hours. They should then be bagged and hung in a dry place to be used as wanted. Clover, red, white, crimson or alsike, may be treated in the same manner. These should be cut before blooming and dried in the shade out of the direct glare of the sun. No winter feed is so acceptable to the birds. Such feeds are fed from a hopper, or better still, from a roll of poultry fencing. Use a piece of two-inch mesh and about four feet in height. Spread this flat on the floor and cover to the depth of two or three inches with the clippings. Roll up tightly and tie. Suspend from the wall of the building by tying a string at both ends and fastening over a hook. Given in this way there is almost no waste and the hens get considerable exercise in procuring the feed. Such material should never be thrown among the litter on the floor.

New Hamp. C. H. CHESLEY.

A NEST ROOSTING PREVENTATIVE.

Chickens often persist in roosting on the edge of the nests, especially if they are located in a place which is not darkened. This habit is not a source of cleanliness in the nest and is often a cause of considerable bother to the poultry keeper on account of the eggs getting soiled. When an egg becomes dirty it depreciates greatly



An Attachment which Prevents Nest Roosting.

in market value and cleaning it removes a protective coating on the shell, thus lessening its keeping quality and making it susceptible to odors from the outside.

The arrangement, illustrated in the accompanying cut, is therefore of practical value to the poultryman who desires cleanliness. It consists of a roller about an inch and a half in diameter, fastened to iron supports at each end by nails driven in the center so that the roller will revolve easily. The irons are fastened to the side of the nest to keep the roller in place. The chickens do not roost on this because they cannot keep their balance.

Idaho. EDGIA TRAXLER.

CHICKEN RAISERS' DIFFICULTIES THIS YEAR.

Farmers and professional chicken men in our locality have had more difficulty this wet summer than for any two or three previous years combined, on account of the rapidity with which storms descended upon us. It was impossible to get the chicks to safe places fast enough and even when it was supposed they were safe the water rose and flooded the coops.

One of our neighbors lost 35 broilers in broad daylight one stormy day in spite of the hardest kind of hard work. A storm was apparently hanging in the north but the day with us was

bright and sunny. Suddenly it veered and came down upon us with a swoop. Every member of the family ran with might and main to gather up chicks and a fire was started to dry the chilled, trembling little things. My mother gathered up a dozen or two and dried them in baskets, but a large number got caught in the wet weeds and perished. Another neighbor lost twenty by having them swept away in the flood.

But there were other troubles. The weeds grew so rank and the ground was too soft to cut them, so the poor little creatures were easily lost from their mothers in the tangles. Of course, all the diseases that are induced by dampness multiplied and even the old hens suffered. The ground was simply filled with water and it was impossible for the few dry days to dry up.

And the rats have been unusually troublesome. Perhaps they were driven from their haunts by the flood and perhaps they are so numerous as to be bold, but I have seen them in our back yard as bold and saucy as though no one were present. I have placed out bits of cheese and bacon covered with poison and they have eagerly rushed out almost before my fingers were off the pieces to get them. By various means we supposed we had reduced the rat population in large numbers, but somehow the rats are about as numerous as ever. Everyone knows that rats like young chickens, so a large number of promising young chicks have gone down their greedy throats this summer.

But everyone is saying that maybe next year will be a better one and failure does not come always. Farmers are improving their flocks and selling the old roosters to produce infertile eggs, and breeding for larger eggs and cleaning up their premises in spite of all the present disasters. Nobody knows when it will clear off become dry, but people are confident that it will some day. And when that day comes the chicken business will get on its feet again with a rapidity that will amaze onlookers, for farmers know that hens are among the most profitable creatures the farm can produce.

Ohio. HILDA RICHMOND.

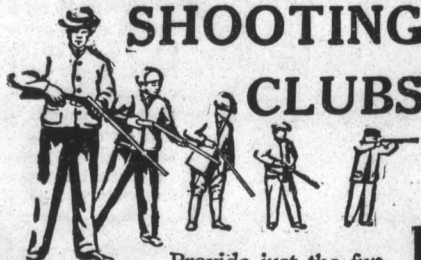
THINGS I HAVE LEARNED.

Sifted coal-ashes is a good material for the dust-box. A little sulphur mixed with it will make it more effective in destroying lice. Lice are not particularly troublesome during the cold months, but some of them live, and unless destroyed, will be right on the job in the spring. If given a dust-bath during the cold months, the hens will rid themselves of most of the pests.

In picking ducks and geese the removal of the down is very tedious. After all the good feathers are removed I sprinkle pulverized rosin over the down. The carcass is then plunged in hot water. The water softens the rosin, which sticks the small feathers together. When so treated the down can be rolled off in balls.

The bill and feet of old geese are red. In young geese they are yellow. Indiana. T. Z. RICHEY.

FARMERS SHOOTING CLUBS



Provide just the fun the farmer needs. Be sociable. Invite the neighbors to a trapshoot in the meadow. Find out who is the best shot. Meet once a week in winter—once a month in summer, and soon all will be good shots.



HAND TRAP

throws clay targets 40 to 75 yards just like flying ducks or quail.

Great practice for hunters. Fun for everybody. Let the women try. They ought to know how.

The Hand Trap costs only \$4.00 at your dealers, or sent prepaid by us. Write for free Hand Trap Booklet No. S 473 also "The Sport Alluring" (men) and "Diana of the Traps" (women).

DU PONT POWDER CO.

Established 1802 Wilmington, Del.

THE FOUR SUCCESSFUL POULTRY JOURNAL is the Practical Poultry Paper for Practical Poultry Raisers, devoted to the poultry interests of Michigan, Ill., Ind., and Wis. It should be your paper. Bright, Snappy and Alive. 50c 1 year, 3 years \$1.00. Send 12c in stamps for three months trial. Fig 4 Successful Poultry Journal, 445 1/2 Plymouth Ct., Chicago, Ill.

BELGAIN Hares fine pedigree, bucks 4 months \$2.50 each, utility bucks \$1.00 each, fine healthy stock. No Does for sale. Rose Comb White Leghorn, Cockerels \$1.00 S. S. Hamburg Cockerels \$1. Riverview Farm, R. B. Vassar, Mich.

POULTRY.

Barred Rock Cockerels—for Sept. and Oct. fairs, 600 yearling hens and pullets for shows and breeders. W. C. Coffman, R. 6, Benton Harbor, Mich.

BARRED ROCKS—Parks 200-egg strain stock and eggs in season. FRED ASTLING, Constantine, Michigan

BARRED AND WHITE ROCK COCKERELS

Large heavy boned birds, farm raised from great laying strains. Prices \$3 and \$5. Send stamp for reply. Riverview Poultry Farm, Box 798, Union City, Mich.

BIG BAIN SAL OF BARRED ROCKS. 200 yearling hens that have laid 140 eggs each since Jan. 1st, 1915 to Aug. 1st, 1915 an average of 20 eggs per hen per month. Prices 6 hens \$10, 12 hens \$15, 20 hens \$25, 50 hens for \$60. They are pure bred, large and closely related to our first winners at Chicago, Cincinnati and Indianapolis shows. Suitable males to go with them at \$2 to \$5 each. 1500 young birds growing. G. EARL HOOVER, R. 7, Matthews, Indiana.

BIRD LAWN BUFF ROCKS, S. C. Buff Leghorns and Blue Orpingtons. Chicago, Madison and Minneapolis winners. Show birds after November 1, a few Black Orpington cockerels and pullets for sale at \$1.50 to \$4 each. Bird Lawn Farm, Lawrence, Mich.

FERRIS WHITE LEGHORNS FOR EGGS

Trapnested 15 years. 60 first prizes, 15 big shows. Large, vigorous, laying, breeding, exhibition stock \$1.50 up. Shipped C. O. D. or on approval. Satisfaction or money back. 36 page free catalog gives prices and particulars. Write for it and save money. FERRIS LEGHORN FARM, 934 Union, Grand Rapids, Michigan.

Pine Crest White Orpington winners at the State Fair, 1st and 2nd Cock, 1st and 3rd Cockerel, 2nd and 3rd Hen, 2nd and 3rd Pullet, 1st Rose Comb hen-9 out of 12. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Rose Comb Brown Leghorn Cockerels from Mad. Sq. winners \$1.00 each. CLAUDIA BETTS, Hillsdale, Michigan

RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 9 1/4 lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$3 to \$25, 10 eggs \$3. A. E. Cramp ton, Vassar, Mich.

R. C. and S. C. RHODE ISLAND REDS from prize R. strains, fine layers with long bodies and rich red color. JENNIE BUELL, Ann Arbor, Michigan.

SILVER Laced Golden and White Wyandotte Eggs for hatching. Ten cents each or 30 for \$2.50. 1 pay parcel post charges. C. W. BROWNING, Portland, 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 P. Rocks, Pekin and white runner ducks, White geese, eggs and day old ducks and chicks, H. V. HOSTETLER, St. Johns, Michigan.

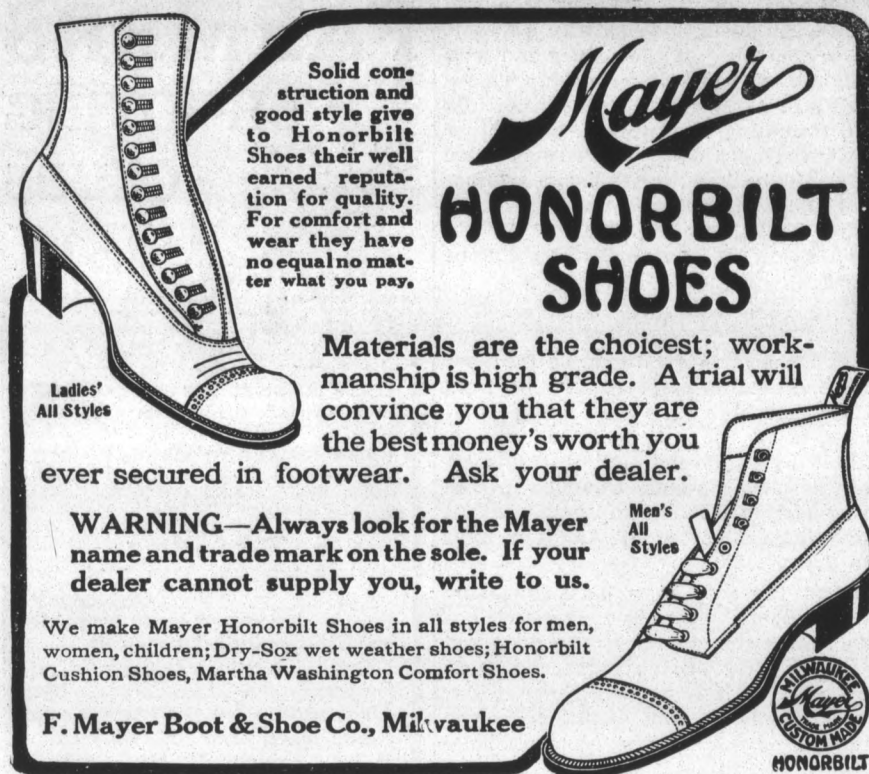
400% Profit

One correspondent on an 80-acre general farm writes that 75 hens worth 60 cents apiece paid a net yearly profit of \$3.06 per hen—400%. Result of proper care and scientific feeding.

C. E. Reed's hens conditioned on Red Comb Poultry Feed made a year's average of 214 eggs each—and won special international prize for cold weather laying. Ask your dealer. Write for Free Book, "Feeding Poultry for Profit."

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Solid construction and good style give to Honorbilt Shoes their well earned reputation for quality. For comfort and wear they have no equal no matter what you pay.

Materials are the choicest; workmanship is high grade. A trial will convince you that they are the best money's worth you ever secured in footwear. Ask your dealer.

WARNING—Always look for the Mayer name and trade mark on the sole. If your dealer cannot supply you, write to us.

We make Mayer Honorbilt Shoes in all styles for men, women, children; Dry-Sox wet weather shoes; Honorbilt Cushion Shoes, Martha Washington Comfort Shoes.

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BREEDERS' DIRECTORY

CATTLE.

ABERDEEN ANGUS

If you are in need of an extra good bull or a few choice young cows or heifers, we have them for sale. Our herd is headed by the Grand Champion Black Monarch 3rd. We invite you to come to our farm and see them. They are bred right and priced right. U. L. Clark, Hunters Creek, Mich. Sidney Smith, Mgr.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. TROJAN-ERICAS and BLACKBIRDS only. Also breeders of Percheron, Hackney and Saddle Horses. Young bulls and Percheron stallions for sale. 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

The buyer of breeding stock should know that the herd from which he buys is healthy. We believe the Beach Farm Herd is as near perfect health as is possible. The tuberculin test does not show the least sign of reaction. We never had a case of contagious abortion. Have won a whole year without calling a Veterinary or giving a dose of medicine.

WE OFFER FOR SALE—

Registered Guernsey Bulls

Very High Bred Grade Guernsey Cows

Bred Heifers, Open Heifers and Heifer Calves.

CAMPBELL & ANGEVINE, Coldwater, Mich.

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.

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

REGISTERED Young Guernsey Bulls, great grand-sons of Gov. Chene. Serviceable age nicely marked, exceptional breeding. A vendable Stock Farm, Wayne, Mich.

FOR SALE A choice lot of Registered Guernsey cows, heifers and bulls of May Rose breeding. H. W. WIGMAN, Lansing, Michigan.

GUERNSEYS—20 High Grade Bred heifers at reasonable prices. E. D. JESSOP, Lansing, Mich.

GUERNSEY BULL FOR SALE Grandson of Imported and ready for service. Eugene Wilcox, R. 4, Hartford, Mich.

FOR SALE—Registered Guernsey Bull calf. Born May 3rd, 1915. From a daughter of Clare Sequel. F. J. ZERLANT, R. No. 3, Fremont, Mich.

HEREFORDS; Two last Oct. bull fellows. ALLEN BROS., Paw Paw, Michigan.

Top Notch Holsteins!

Young bulls that will add most desirable qualities to registered herds or transform grades into near full bloods in appearance and production. The bull is fifty per cent or over of the herd. McPHERSON FARMS CO., Howell, 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. 6% fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

Warranted
to give satisfaction.



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CAUSTIC BALSAM

A safe, speedy and
positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of **Caustic Balsam** sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address: THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.



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\$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases. MINERAL HEAVE REMEDY CO. 463 Fourth Ave., Pittsburgh, Pa.



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Spending \$170,000 for Holstein owners. In the twelve months preceding April 30, 1915, approximately \$170,000 was expended by the Holstein-Friesian Association in administering the affairs of the organization. The effect of this expenditure and its attendant labors is evidenced by a remarkable growth of the Association in membership and the almost universal popularity of the "Black-and-Whites" in America. An owner of the purebred Holstein cattle benefits directly and indirectly from every dollar disbursed in the exploitation of purebred Registered Holsteins. Investigate the big "Black-and-Whites."

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I don't want to sell anything but
HOLSTEIN BULLS

and I have some bull bargains. Don't buy a bull until you know I have not got what you want. Come and see bulls. L. E. CONNELL, Fayette, Ohio.

HATCH HERD
YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke; Brother of K. P. Pontiac Lass 44.5; average record of 50 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.93. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

Breeders' Directory—Continued on page 303.

LIVE STOCK AWARDS AT THE STATE FAIR.

(Continued from last week).

Horses.—Belgians.

Stallion, 4 yrs. or over—1st, Prairie Farm, Alicia, Mich., on Sans peur de Hamal; 2nd, Loeser Bros., Ligonier, Ind., on Savoy; 3rd, C. E. Wilkerson, Detroit, Mich., on Indien de Thullies; 4th, Loeser Bros.

Stallion, 3 yrs. old—1st, Lonzo McClain, Lima, Ohio, on Ruban; 2nd, McClain on Aiglon; 3rd, Loeser Bros. on Samuel; 4th, McClain on Buffon.

Stallion, 2 yrs.—1st, Loeser Bros. on Dore; 2nd, Loeser Bros. on Climax; 3rd, Loeser Bros. on Soehait, Jr.

Stallion colt—1st, Ackerman & Sons, Elkton, Mich., on Notkle.

Stallion, 1 yr.—1st, E. C. Baker, Reese, Mich., on Prince De Essen; 2nd, Prairie Farm on King Albert.

Mare, 4 yrs. or over—1st, McClain on Diana; 2nd, Prairie Farm on Jolie de Argentone; 3rd, Loeser Bros. on Dea Fosteau.

Mare, 3 yrs.—1st, McClain on Lucie; 2nd, Loeser Bros. on Queen Victoria; 3rd, Prairie Farm on Minute de Forchies.

Mare, 2 yrs.—1st, McClain on Ner-on; 2nd, Ackerman & Sons on Big Bessie; 3rd, Prairie Farm on Anna.

Mare, 1 yr.—1st, Ackerman & Sons. Mare colt—1st, Baker on Silver Queen; 2nd, Prairie Farm on Mariana Farceur; 3rd, Prairie Farm on Poree de belle Croix.

Stallion and four of his get—1st, Ackerman & Sons on Georges; 2nd, Prairie Farm on Sans coeur de Hamal.

Mare and two produce—1st, McClain on Diana; 2nd, Ackerman & Sons on Notkle.

Five stallions, property of one exhibitor—1st, Loeser Bros.

Three mares, property of one exhibitor—1st, Belgian Society Ribbon, Lonzo McClain; 2nd, Prairie Farm.

Champion stallion—cup and Belgian society medal—Prairie Farm on Sans Coeur de Hamal.

Reserve—McClain on Ruban. Champion mare—cup and Belgian society medal—McClain on Ducie.

Reserve—McClain on Diana. Standard Breds.

Stallion, 4 yrs.—1st, E. D. Case, Detroit, Mich., on Golden Regent; 2nd, F. F. Mitchell, Columbus, Ohio, on Eminent Chief; 3rd, Geo. W. Slaughter, Birmingham, Mich., on Mokoson.

Stallion, 3 yrs.—1st, Slaughter on Is Worthy McKinney; 2nd, J. A. Bassett, Birmingham, Mich., on Spring Brook Barren.

Stallion colt—1st, Slaughter on Mokoson, Jr.; 2nd, Slaughter on Patrick McKinney; 3rd, Slaughter on Mokoson Boy.

Brood mare with colt—1st, Slaughter on Lady Cassidy; 2nd, Slaughter on Esther Cassidy; 3rd, Slaughter on Princess Nutwood.

Mare, 4 years. old—1st, Jas. Welch, Jr. Flint, Mich., on Maud H.; 2nd, Case; 3rd, Slaughter on Lady Cassidy; 4th, Slaughter on Esther Cassidy.

Mare, 3 yrs. old—1st, Harry Mosier, Detroit, Mich., on Annie Burke; 2nd, Slaughter on Ann Cecil.

Mare, 2 yrs.—1st, J. T. Weber, Detroit, Mich., on Baroness Rowena.

Hackneys. Stallion, 4 yrs. or over—1st, J. M. Cox, Washington, C. H., Ohio, on Pocklington Protector; 2d, Endicott Farm, Birmingham, Mich., on Evergreen; 3rd, Endicott Farm on Sam Weller.

Stallion, 3 yrs.—1st, Endicott Farm on Executor.

Stallion, 2 yrs.—1st, Geo. Ackerman & Sons, Elkton, Mich., on Royal Scotch.

Stallion, 1 yr.—1st, Endicott Farm on Starplex; 2nd, Ackerman & Sons on Scotland Forever.

Stallion colt—1st, Geo. A. Heyl, Washington, Ill., on Little Joe's Wonder.

Mare, 4 yrs. old or over—1st, Endicott Farm on Driftwood; 2nd, Endicott Farm on Carlam's Coquette; 3rd, Heyl on Dinarth Gem.

Mare, 3 yrs.—1st, Heyl on Dinarth Magic; 2nd, Endicott Farm on Salvia; 3rd, Endicott Farm on Satellite.

Mare, 2 yrs.—1st, Heyl on Trillo Magic.

Mare colt—1st, Mrs. Grace Gordon, Birmingham, Mich., on Bloomfield Lassie.

Stallion and four of his get—1st, Endicott Farm on Sharplov with Sam Weller, Sea Breeze, Salvia, Starplex. Mare and two produce—1st, Mrs. Grace Gordon on Dorothy of Bloomfield with Bloomfield Lassie and Intelligence; 2nd, Ackerman & Sons on Warwick Princess with Royal Scotch and Scotland Forever; 3rd, Endicott Farm on Robin Redbreast with Satellite and Sister Sue.

Champion Stallion—Pocklington on Protector; reserve, Executor. Champion mare—Driftwood; reserve—Trillo Magic.

Welsh Ponies.

Stallion, 4 yrs.—1st, Heyl on Gwendy Duke.

dy True Blue; 2nd, same on Gwendy Sparkle.

Mare, 4 yrs.—1st, Pelletier Farms on Dynarth Sparkler; 2nd, Heyl on Foregate Polly.

Mare, 3 yrs.—1st, Heyl on Dynarth Fancy.

Mare with two colts—1st, Heyl.

Cattle.—Herefords. Bull, 3 yrs. or over—1st, Calhoon Bros., Bronson, Mich.; 2nd, James V. Hill, Roundhead, Ohio.

Bull, 2 yrs.—1st, Hill; 2nd, Tony B. Fox, Pewamo, Mich.

Bull, senior yearling—1st, Fox. Bull, senior calf—1st and 4th, Hill; 2nd, Calhoon Bros.; 3rd, Fox.

Bull, junior calf—1st, Hill; 2nd, Calhoon Bros.; 3rd, Fox.

Cow, 3 yrs. or over—1st and 4th, Hill; 2nd and 3rd, Calhoon Bros.; 5th, Fox.

Heifer, 2 yrs.—1st and 2nd, Calhoon Bros.; 3rd, Hill; 4th, Fox.

Heifer, senior yearling—1st, Hill; 2nd, Calhoon Bros.; 3rd, Fox.

Heifer, junior yearling—1st, Hill; 2nd, Calhoon Bros.; 3rd, Fox.

Heifer, senior calf—1st, 2nd and 4th, Hill; 3rd, Calhoon Bros.

Heifer, junior calf—1st, Hill; 2nd, Fox.

Exhibitors' herd—1st, Hill; 2nd, Calhoon Bros.; 3rd, Fox.

Breeders' herd—1st, Hill; 2nd, Fox. Calf herd—1st, Hill; 2nd, Fox.

Four get of sire—1st, Calhoon Bros.; 2nd, Hill; 3rd, Fox.

Two produce of cow—1st, Calhoon Bros.; 2nd, Hill; 3rd, Fox.

Senior champion bull—Calhoon Bros.; reserve, Hill.

Junior champion bull—Hill; reserve same.

Senior champion female—Hill; reserve, Calhoon Bros.

Junior champion female—Hill.

Grand champion bull—cup—Calhoon Bros.; reserve, Hill.

Grand champion female—cup—Hill.

Herdsman Special. 1st, Wm. Aikman, Smith Creek, Mich.; 2nd, Morris A. Wattles, Troy, Mich.; 3rd, Elmer Belson, Pontiac, Mich.; 4th, Fred Glade, Clarkston, Mich.

Holstein Friesians. Bull, 3 yrs. or over—1st, F. E. Eager & Sons, Howell, Mich.

Bull, 2 yrs.—1st, Hillcrest Farm, Kalamazoo, Mich.

Bull, yearling—1st, Eager & Sons.

Bull, senior calf—1st and 2nd, Eager & Sons; 3rd, John A. Rinks, Warren, Mich.

Bull, junior calf—1st, Rinke; 2nd, Eager & Sons.

Cow, 4 yrs. or over—1st, Eager & Sons.

Cow, 3 yrs.—1st, Rinke; 2nd, Eager & Sons.

Heifer, 2 yrs.—1st, Eager & Sons; 2nd, Rinke.

Heifer, yearling—1st, 3rd and 4th—Rinke; 2nd and 5th, Eager & Sons.

Heifer, senior calf—1st, Eager & Sons; 2nd, Rinke.

Heifer, junior calf—1st and 2nd, Eager & Sons; 3rd and 4th, Rinke.

Exhibitors' herd—1st, Eager & Sons; 2nd, Rinke.

Breeders' herd—1st, Eager & Sons; 2nd, Rinke.

Grand champion bull—Wattles & Son.

Grand champion female—George.

Guernsey.

All first and championship awards in this class went to John Ebels, Holland, Mich., the only exhibitor.

Ayrshires.

All awards in this class were made to Findlay Bros., Vassar, Mich., the only exhibitors.

Sheep—Shropshires.

Ram, 2 yrs. or over—1st, E. E. Leland & Son, Ann Arbor, Mich.; 2nd and 5th, Herbert E. Powell, Ionia, Mich.; 3rd and 4th, Kope Kon Farm, Kinderhook, Mich.

Ewe, 2 yrs. or over—1st and 2nd, Kope Kon Farm; 3rd and 4th, Powell.

Ram, 1 yr.—1st and 3rd, Kope Kon Farm; 2nd and 5th, Leland & Son.

Ram, lamb—1st, 2nd, 4th and 5th, Leland & Son; 3rd, Kope Kon Farm.

Ewe, 1 yr.—1st, 2nd and 5th, Leland & Son; 3rd, Powell; 4th, Kope Kon Farm.

Ewe, lamb—1st and 3rd, Leland & Son; 2nd and 4th, Kope Kon Farm; 5th, Powell.

Flock—1st, Leland & Son; 2nd, Kope Kon Farm; 3rd, Powell.

Breeders' young flock—1st, Leland & Son; 2nd, Kope Kon Farm; 3rd, Powell.

Lamb flock—1st, Leland & Son; 2d, Kope Kon Farm; 3rd, Powell.

Three ram, yearling—1st, Kope Kon Farm; 2d, Leland & Son; 3rd, Powell.

Get of sire—1st, Leland & Son; 2nd, Kope Kon Farm; 3rd, Powell.

Grand champion ram—Leland & Son; reserve, Kope Kon Farm.

Grand champion ewe—Leland & Son; reserve, same.

Delaine Merinos.

Ram, 2 yrs. or over—1st and 3rd, W. M. Staley, Marysville, Ohio; 2nd, John J. Liles, Collins, Ohio; 4th, E. M. Moore, Wixom, Mich.; 5th, Calhoun Bros., Bronson, Mich.

Ram, 1 yr.—1st and 2nd, Staley; 3rd, Moore; 4th, Liles; 5th, Carl Maeckel, Munith, Mich.

Ram, lamb—1st and 4th, Staley; 2nd, Liles; 3rd, Maeckel; 5th, Calhoun Bros.

Ewe, 2 yrs. or over—1st and 2nd, Staley; 3rd, Liles; 4th, Moore; 5th, Calhoun Bros.

Ewe, 1 yr.—1st and 4th, Staley; 2nd and 5th, Calhoun Bros.; 3rd, Liles.

Ewe, lamb—1st and 5th, Liles; 2nd and 3rd, Staley; 4th, Maeckel.

Flock—1st, Staley; 2nd, Liles; 3rd, Calhoun Bros.; 4th, Moore; 5th, Maeckel.

Breeders' young flock—1st, Staley; 2nd, Liles; 3rd, Calhoun Bros.; 4th, Moore; 5th, Maeckel.

Lamb flock—1st, Staley; 2nd, Calhoun Bros.; 3rd, Maeckel; 4th, Moore.

Get of sire—1st, Staley; 2nd, Liles; 3rd, Maeckel; 4th, Calhoun Bros.; 5th, Moore.

American Merinos.

Ram, 2 yrs. or over—1st, Staley; 2nd and 4th, Calhoun Bros.; 3rd and 5th, Moore.

Ram, 1 yr.—1st, Staley; 2nd and 3rd, Moore; 4th and 5th, Liles.

Ram, lamb—1st, 2d and 4th, Staley; 3rd, Moore; 5th, Maeckel.

Ewe, 2 yrs. or over—1st, 2nd and 4th, Staley; 3rd, Moore; 5th, Liles.

Ewe, lamb—1st and 2nd, Staley; 3rd, Moore; 4th, Calhoun Bros.; 5th, Liles.

Flock—1st, Staley; 2nd, Moore; 3rd, Calhoun Bros.; 4th, Liles; 5th, Maeckel.

Breeders' young flock—1st, Staley; 2nd, Moore; 3rd, Calhoun Bros.; 4th, Liles; 5th, Maeckel.

Lamb flock—1st, Staley; 2nd, Calhoun Bros.; 3rd, Moore; 4th, Maeckel.

Get of sire—1st, Staley; 2nd, Moore; 3rd, Calhoun Bros.; 4th, Maeckel; 5th, Liles.

Grand champion ram and ewe—Staley.

Fat Sheep.

Middle wool wether over 2 yrs.—1st and 2nd, Wm. Newton, Pontiac, Mich.

Middle wool wether, 1 yr. and under 2—1st, Herb't E. Powell, Ionia, Mich.; 2nd, Newton.

Middle wool wether, under 1 yr.—1st, Powell; 2nd, Newton.

Champion middle wool wether—Newton.

Long wool wether, over 2 yrs.—1st, Newton.

Long wool wether, 1 yr. and under 2—1st, Newton.

Champion long wool wether—1st, Newton.

Merino wether, over 2 yrs.—1st, Carl Maeckel; 2nd, Newton.

Merino wether, 1 yr. and under 2—1st, Maeckel; 2nd, Moore.

Merino wether, under 1 yr.—1st, Moore.

Champion merino wether—Maeckel.

Grand champion wether of show, open to first prize winners—Newton.

Rambouillets.

Ram, 2 yrs. or over—1st, 4th and 5th, E. M. Moore, Wixom, Mich.; 2nd and 3rd, A. A. Wood & Son, Saline, Mich.

(Continued on page 299).

Oct. 21 Howell Sale Oct. 21 Sales Pavillion, Howell, Mich.

100 choice registered Holstein young Cows with records from 19 to 24 lbs. Daughters of A. R. O. cows in calf to some of the best 30 lb. bulls in the State. Heifer calves and yearlings with A. R. O. dams and sires, a few bulls.

Last Sale of 1915 at Howell

Oct. 21, 10:30 a. m. Three Auctioneers, Perry, Ellis, Mack. Catalogs Oct. 10.

The Howell Sales Company of Livingston County.

F. G. Johnston, Columbus, O., Ped. Expert A. R. Eastman, Sec., Howell, Mich.

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.

Espanore Farm, LANSING, MICHIGAN.

Offers for sale, registered Holstein Cows bred to the great bull Pledge Spafford Calamity Paul. If you need a bull, write for prices and pedigrees of our bull calves.

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

20 Registered H. F. Bulls FOR SALE

Tested dams 30 lb. sires. Sept. price \$50 to \$100, according to breeding. Age 1 to 24 mo. Write what you need.

A. R. EASTMAN, HOWELL, MICH.

REGISTERED Holsteins—Herd headed by Albino Bonte Butter Boy. His dam has A. R. O. records as follows: at 2 yrs. milk 430, buter 18.85; 4 yrs. milk 604.8, butter 27.03; at 6 yrs. milk 620, butter 28.55 lbs. W. B. READEK, Howell, Mich.

High Class HOLSTEINS My herd is headed 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 1/2 mile from court house. SETH B. ROBERT, Howell, Mich.

An Error in My Ad Last Week. Registered Holstein heifer 5 months old. Very nice in every way \$100, delivered free, safe arrival guaranteed. Write for pedigree and photo. Hobart W. Fay, Mason, Mich.

Holstein Bull Calf 6 mo. old, 30 lb. sire and from a promising 2 yr. old dam \$60 with all papers. Elmer E. Smith, Redford, Mich.

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

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

Reg. Holstein Friesian Bull Calves From heavy producing dams. Bargain prices. DEWEY C. PIERSON, Hadley, Michigan.

Only \$30.00 Delivered. Handsome Holstein bull calf, 1/2 white, six wks. old, thoroughbred, but not eligible to registry. ROUGEMONT FARMS, Detroit, Mich.

HOLSTEINS AND GUERNSEYS Our Holsteins combine the blood of Belle Korady and DeKol 2nd. Our Guernseys are strong in Lady Gempsey, Glenwood Boy of Haddon, and Stranford's Glenwood of Pinehurst blood. Some fine bull calves of both breeds for sale. Boardman Farm, Jackson, Mich.

REGISTERED HOLSTEIN BULL, calved Jan. 2, 1914. Send for description. W. C. TAYLOR, Milan, Mich.

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

Registered Holstein—FRIESIAN BULLS ready for service, \$50 to \$75 each. B. B. REAVEY, Akron, Michigan.

We will take your note for one year at 5%—then why not buy a

Holstein Bull

at once, and get pick of 12 from best Breeding in Michigan. Send for prices and pedigrees.

LONG BEACH FARM, AUGUSTA, MICH.

Choice Registered Guernsey & Holstein Bulls From two months to two years old. Most of them from A. R. O. cows. All to be sold at farmers prices. Call or write. SWEET ORCHARD FARMS, Birmingham, Mich. E. E. Sweet, Proprietor.

Will Sell or Exchange Our registered Guernsey Bull La Tette of Maple Lane, 23192 A. G. C. C., four years of age Sept. 30th. Will exchange Pedigree A. G. C. C. Sir imported Raymond of Tette, 2430 P. S. Dam, Lady Whitefoot 31519. THE JENNING'S FARMS, R. F. D. 1, Bailey, Mich.

FOR SALE 35 High Grade Guernsey Cows and Heifers due to freshen this fall and winter. Prices reasonable. The Jennings Farms, R. F. D. 1, Bailey, Mich.

Maple Lane Register of Merit Jersey Herd. Tuberculin tested by U. S. Government. For sale bull calves and heifer calves from R. of M. dams and grand dams, and Hood Farm Sire. IRVIN FOX, Allegan, Michigan.

LAST BULL Sold to Mr. A. Fleming of Weidman. Just one bull left, age 10 mo. He's a bargain at \$200, breeding conformation considered. Brother to former world's record 3 1/2 yr. old Holstein. M. L. McLaurin, Redford, Mich.

THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Herd headed by Majesty's Wonder 20711, one of the best sons of Royal Majesty. The daughters of Majesty's Wonder are mated to a son of Majesty's Oxford King. Herd tuberculin tested. We have for sale a few choice young bulls for fall service from high producing cows. Alvin Balden, Canaan, Mich.

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

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

FOR SALE—High class Jersey Bull—Galver from Register of Merit ancestry. WATERMAN & WATERMAN, Meadowland Farm, Ann Arbor, Mich.

For Sale—High Class Jersey Bull as good as the best Yearling. From high producing dam. Price right if taken at once. J. F. Townsend, Ionia, Mich.

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

HILLSIDE Farm Jerseys, yearling bulls, solid color, half brothers to ex-world's-record senior 2yr old and from R. of M. dams, with records from 400 lbs. to 800 lbs. C. and O. DEAKE, Ypsilanti, Michigan.

For Sale—Tested Registered Jersey Sire, fine breeding. Several heifers running over 400 lbs. to his credit. Good natured, tractable, price reasonable. Chas. B. Cook Farm, Owosso, Mich. R. No. 1.

Milking Shorthorns 1 bull 8 months old \$125, 2 cows. DAVIDSON & HALL, Tecumseh, Michigan.

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

BIDWELL SHORTHORNS For "Beef and Milk" Registered Bulls, Cows and heifers, Scotch-capped roans, and reds for sale. Farm at N. Y. Central Depot, also D. T. & L. R'y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorns For Sale 8 young bulls also female, farm 1/2 mile east of Davis crossing on A. A. R. R. W. B. McQUILLAN, Howell, Mich.

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, T. C. STORY, Lowell, Mich.

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, Marietta, Mich.

Berkshires. Two fall gilts bred for Aug. & Sept. farrowing and a choice lot of April gilts for sale. A. A. PATULLIO, Decker, Mich.

Royalton Bred Berkshires—Bor pigs ready to ship last of July at 12 weeks age with registry papers. Write for pedigree and prices. D. F. VALENTINE, Supt., Temperance, Mich.

DUROC JERSEYS—A few choice spring BOARS ready to ship. Carey U. Edmonds, Hastings, Mich.

BERKSHIRES Choice spring boars and gilts priced to move quick. Farmers stock. ELMHURST STOCK FARM, Almont, Mich.

Duroc Jersey—March pigs either sex, also am booking orders for fall pigs for Nov. shipment. Inspection invited. E. D. Heydenberk, Wayland, 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.

WOULD like to hear from those desiring to start a herd of thoroughbred Chesters. 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. O. D. and reg. free in the O. I. C. or Chester White Assn. We won 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. 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. Choice Gilts bred for Sept. farrow. ALVIN V. HATT, Grass Lake, Michigan

O. I. C. GILT BRED SPRING PIGS ready to ship. H. J. FERLEY, Holt, Michigan.

O. I. C.'s—Bred sows, bred gilts, spring pigs both sex. Service Boars. Price low. A. R. GRAHAM, Flint, Michigan.

REGISTERED O. I. C. BOARS & GILTS High class fall pigs at reasonable prices. J. CARL JEWETT, Mason, Mich.

O. I. C. SPRING BOARS of good type and Red Polled bull calves. John Berner and Son, Grand Ledge, Mich.

O. I. C. SERVICEABLE BOARS. Priced to sell, and recorded in buyer's name. H. W. MANN, Dansville, Michigan.

O. I. C.'s STRICTLY BIG TYPE. March, April and May pigs sired by Lengthy Prince, White Monarch and Frost's Choice, all big type boars and sows weighing from 500 to 700 lbs. with quality second to none. Can furnish in pairs not akin. Prices reasonable. Newman's Stock Farm, Marietta, Mich. R. 1.

O. I. C.'s two yearling boars and a lot of last Spring pigs not akin. Also a lot of this fall pigs at \$10 each at 8 to 10 weeks old. Good stock, 1/4 mile west of depot. Otto B. Schulze, Nashville, Mich. Citizens phone 124.

Way Brothers Stock Farm. The home of the big for sale. Registered free. J. R. Way, Pompeii, Mich.

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

Brookwater Farm This herd won fourteen first prizes, besides several lesser ones, also Grand Champion Boar and Grand Champion Sow at Michigan State Fair. Every entry was bred at Brookwater with three exceptions and they were farrowed there. The Grand Champion Boar Hoosier is for sale also a choice lot of spring pigs and yearling boars. If you wish something considerably better, write or visit—BROOKWATER FARM, R. 7, Ann Arbor, Mich.

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

DUROC JERSEYS—Spring pigs either sex Gilts bred for Sept. farrow to a son of Volunteer Grand Champion at Interna'l Stock Show Chicago. F. J. Drott, R. 1, 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 hard work for my plan, "How to Make Money from Hogs." C. S. BENJAMIN, R. No. 10 Portland, 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.

Durocs of the best of breeding. April farrow either sex or pairs for next 30 days \$20 each. Two fall boars. Oct. farrow \$30 each. Also Holstein bull one year Oct. 6. H. G. KESLER, Cassopolis, Mich.

DUROC JERSEYS—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, OHERRY LAWN FARM, Shepherd, Michigan.

DUROC JERSEY BOARS a choice lot of spring boars. Fall pigs, pairs and trios not akin. W. C. TAYLOR, Milan, Michigan.

BIG TYPE P. C. Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000 lb. boar prospects. Absolutely no larger breeding anywhere guaranteed right. FRANK KRUGER, Ravenna, Mich.

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

LARGE TYPE P. C. Some very choice April and May Boars for sale. Brood Sow Sale in February. W. J. HAGELSHAW, Augusta, Mich.

Big Boned Poland Chinas. Fall gilts bred weigh- ing from 260 to 300 lbs. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C. two extra good Summer Yearling Boars; a few choice sows bred for Aug. & Sept. farrow. Spring pigs that are beauties, sired by Big Defender, the boar that everybody goes wild over. Come and see him. H. O. SWARTZ, Schoolcraft, Mich.

BIG TYPE POLAND CHINAS. Some choice boars now ready to ship. Satisfaction guaranteed. G. W. HOLTON, R. No. 11, Kalamazoo, Michigan.

Spring Pigs at Half Price:—Bred from strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

LARGE TYPE P. C. Herd Boar Hoosier Giant 2nd 238011, Pigs sired by him. One Big Smooth Jumbo Boar. Bred sows, prices right. MRS. J. E. BRATHWAITE, Brant, Mich.

For Sale Poland Chinas of Merit. Ayreshire Bull. B. M. WING & SON, Sheridan, Mich.

BIG type Poland Chinas with quality bred right, feed right, and priced right to go to their own homes and do right. A. D. GREGORY, Ionia, Mich.

POLAND CHINA Spring Pigs from heavy boned prolific stock. Also, Oxford Sheep, both sex at bargain prices. ROBERT NEVE, Pierson, Michigan.

REGISTERED YORKSHIRES Imported Strain. Both sexes. Prices Reasonable. Hatch Herd, Ypsilanti, Michigan.

50 YORKSHIRES—All ages. Red Polled Cattle, Oxford Down Sheep, W. P. Rocks, I. R. Ducks. E. S. CARR, Homer, Mich.

Large Yorkshire Gilts bred for September and October farrow. Serviceable boars. Pigs all ages. Prices reasonable. W. C. Cook, Route 42, Ada, Michigan.

Mulefoot Hogs:—Weaning pigs, pairs not akin. Bred sows and gilts for fall farrow, two service boars. C. F. BACON, R. 3, Britton, Mich.

MULE FOOT HOGS REGISTERED 2 very large boars and 10 sows, their nose to their ear, right. LONG BEACH FARM, Augusta, Mich.

HORSES

FOR SALE—Registered Percheron Stallion Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

Registered Percherons Brood mares, Fillies and Young Stallions. Priced to sell. Inspection invited. L. C. HUNT & CO., Eaton Rapids, Michigan.

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmira, Michigan.

WANTED: Horses 1150 pounds, mules 1050 pounds. Address Taxicab & Transfer Co., 42 Randolph St. Detroit.

SHEEP.

Black Top Delaine Sheep. Yearling rams for sale. Fred E. Reichert, Elm Ridge Farm, Ann Arbor, Mich.

Oxford Down Sheep. Good Yearling Field Rams and ewes of all ages for sale. M. F. GANSLEY, Lennon, Michigan.

SHROPSHIRE RAMS Good big fellows with quality. Special prices on them this month. See our exhibit at Columbus and Detroit KOPE KON FARM, Kinderhook, Michigan.

Wanted 1,000,000 More FARMERS

To Buy NOTHING But Bargains!!

Water or Storage Tanks
Made of 20 gauge galvanized steel; won't rust; strongly riveted seams.
Lot No. T-1801. Cap. 8-12 Bbls.
\$4.25
Lot No. T-1804. Cap. 9 Bbls.
\$5.95
Larger sizes at proportionate prices.

Iron Pipe and Fittings
3c per ft.
Good iron pipe in random lengths complete with couplings. Suitable for gas, oil, water and conveyance of all liquids. Size 3-8 to 12 in. Our price on 1 in., per foot, 3c. 1-1/4 in., 3-1/2c. Complete stock of valves and fittings. Send us specifications and requirements. Larger sizes priced just as low.

Will YOU Be One of The New Million?

A multitude of Farm Folks have found profit and satisfaction in dealing direct with us on our famous P-R-I-C-E W-R-E-C-K-I-N-G Plan. From coast to coast we are known to an army of wise buyers, whose favor we earned by the money we saved them. These are our regular customers—old farm friends, who are firmly bound to us by many years' experience of our fair treatment, truthful advertising and reliable goods. They need no reminder of the benefits we offer; **THEY KNOW!**

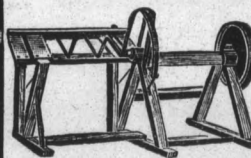
But there are still many who remain in the old money wasting rut—men who have yet to learn the enormous advantages dealing direct with our mammoth 40-acre plant offers over Stores and Mail Order Houses. For these we head this page: **"WANTED! 1,000,000 MORE FARMERS TO BUY NOTHING BUT BARGAINS!"**

Listen! Get this straight: Everything we sell is a guaranteed bargain or money-back. We buy nothing in the regular way. We seek only high-class, desirable new goods, offered at Forced Sales, Bankrupt Stocks, Sheriff's and Receivers' Sales, Auctions, Expositions, Manufacturers' Outlet Sales, etc. Our \$10,000,000 buying power gives us the first pick and choice of the cream of the country's merchandise at these big bargain events.

And we sell—as we buy—bargains only—nothing but bargains! Our mammoth "PRICE WRECKER" Catalog contains 50,000 bargains in everything for Home, Personal and Farm use. Will YOU, Mr. Farmer, be one of the new million to send for this big free book? Why continue paying regular store and mail order prices when you can so easily save a lot more money on our original P-R-I-C-E W-R-E-C-K-I-N-G Plan?

CHICAGO HOUSE WRECKING CO.
(HARRIS BROS. CO., OWNERS)

Combination Wood Saw \$10.95 Special Low Bargain Price



Keep the boys on the farm! Do away with the drudgery of wood sawing with one of these up-to-date outfits. Frame of heavy hardwood, extra well braced and bolted; arranged for long poles or regular cordwood. Saw guard adjusts for saws 20 to 30 inches in diameter. Mandrel 4 ft. 1 in. long, 1 1/2 inches in diameter and turned down to fit 1 1/2 hole in saw. Balance wheel weighs 95 lbs. Weight, complete with extension table 300 pounds. Big bargain at \$10.95 (with table, but no saw). This unusual snap is but a specimen of the many like values secured in a recent big deal. Many other time, labor, and money saving devices at savings that will positively surprise you. Order "yours" today or write for complete Bargain Price List. Send for it today! Order by Lot No. 8T490. Price, \$10.95.

Heating Plants Priced Low

You can easily install your own Heating Plant with the assistance of our free expert engineering service. Warm air as low as \$67, steam \$134 and hot water \$154. Send for our Free Heating Book today.

Shingle Bargains

Lot No. P-923. 10 in. Clear 5-2, 16 in. Washington red cedar shingles, per 1,000 \$2.67. Lot No. T-924. Extra Star "A" Star, 6-2 16 in. Washington red cedar shingles, per 1,000 \$2.69. Lot No. T-925. Extra clear 5-2, 16 in. Washington red cedar shingles. Absolutely clear. Per 1,000, \$2.27.

Sturdy Hog Troughs 89c

Biggest bargain ever offered on strong, durable Troughs for hogs and cattle. Heavy galvanized cross bars and legs, securely riveted. Round bottom; easily cleaned. 5 ft. long by 16 gauge. Each, 89c. Order by Lot No. T-43. Heavy galvanized iron, standard size, 6 ft. long. Each, \$1.25. Lot No. T-44.

Bath Tub Complete, \$13.00

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Standard wire nails put up in 100 lb. kegs, all kinds and sizes mixed. Price, per keg, \$1.38. Order by lot No. T-435. 10 D. regular new wire nails, 100 lb. keg, \$1.35. Order by lot No. T-436.

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