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Cash Crops for Michigan Dairy Farms

By CLAYTON C. MILLER

THE farmer who nowadays undertakes to become a specialist in some line of agricultural endeavor seems prone to neglect other sources of revenue which are fostered by his specialty. This is very often the case with the Michigan dairyman. The more strongly he becomes devoted to his dairy, the more liable he is to make every operation on the farm subservient to the one leading feature. His crops and rotations are all planned from the dairy standpoint, and whenever money is spent on permanent improvements or for new machinery, it is with direct reference to the advantage of the dairy.

Odd as it may seem, this singleness of purpose often delays the fullest development of the dairyman's main project by confining his income entirely to that received from his herd. Moreover profitable employment for men and teams is thereby overlooked, for, with the herd out at pasture, sufficient labor is released to care for a cash crop.

The most common rotation practiced on the dairy farm in Michigan is (1) corn, (2) oats, (3) wheat or rye, (4) clover. On many of the more progressive farms a fifth portion of the tillable land is seeded to alfalfa and maintained for a period of four years, then another field is put to alfalfa and the old meadow is placed in the regular rotation. This rotation is not a serious drain on the fertility of the soil if application of phosphate is made before the sowing of wheat. By this system provision is also made for straw to be used as bedding for the cattle. These crops, however, do not provide for a dependable cash income to supplement that from the dairy. The ravages of the Hessian fly in this region make wheat a very uncertain quantity as a cash crop, and the types of rye usually sown are low

in yield and do not command a price which provides much income. Many of our Michigan dairy farms have sandy loam soils, and it is a well known fact that such soils cannot be depended upon for a good oat crop; thus oats are frequently an expensive and unsatisfactory member of the rotation.

With these facts before us, it would seem that the rational thing for dairy-men to do is to include in their rotation such crops as potatoes, beans, sugar beets, and, in, some instances,

sweet corn or peas. These crops are all especially adapted to the soil and climate of Michigan. On many farms one or more of them form the chief source of income, and on dairy farms, where the humus content of the soil is so much higher, the rewards will be proportionately greater. In the case of potatoes or beans substituted for oats in the rotation above mentioned, there is the added advantage that rye and vetch may be seeded in the corn at last cultivation and turned under the following spring as a green manure, thus increasing materially the fertility and humus content of the soil.

Potatoes, which on the general purpose farm yield on the average about 100 bushels of marketable product, on the dairy farm should yield from 50 per cent to 100 per cent more—and this without the employment of extra

labor. The value of an average yield of oats will run from \$16 to \$20 per acre, while potatoes averaging 150 to 250 bushels per acre are worth from \$60 to \$100. While the cost of production of the latter is greater, when all due allowance has been made, it will be found that potatoes will give a net profit double or treble that of oats. The increase in equipment required for the production of a potato crop is limited to a horse planter, sprayer and digger. This calls for but a small outlay of capital. No storage plant is nec-

essary, for the dairyman should market this crop directly from the field. The planting and harvesting of the potato crop follows the planting and harvesting of the corn crop and thus does not interfere with that important feature of the dairy farm. The dairy farm in southern Michigan is especially adapted to the production of beans. This is a leguminous crop and helps in building up the nitrogen content of the soil. The planting and harvesting of beans does not interfere with like operations for the corn crop. The only additional machinery required is the bean puller. Should weather conditions prove unfavorable, and the beans be unsuccessful as a cash crop, they may still be used with great profit in the rations of the live stock.

Wheat may follow beans, and rye be sown after potatoes, without the la-

harvesting of the crop comes in October after other crops are harvested and fall seeding is done. The beet tops, which are left in the field, make a very valuable stock food, and may take the place quite largely of corn silage in late fall and early winter.

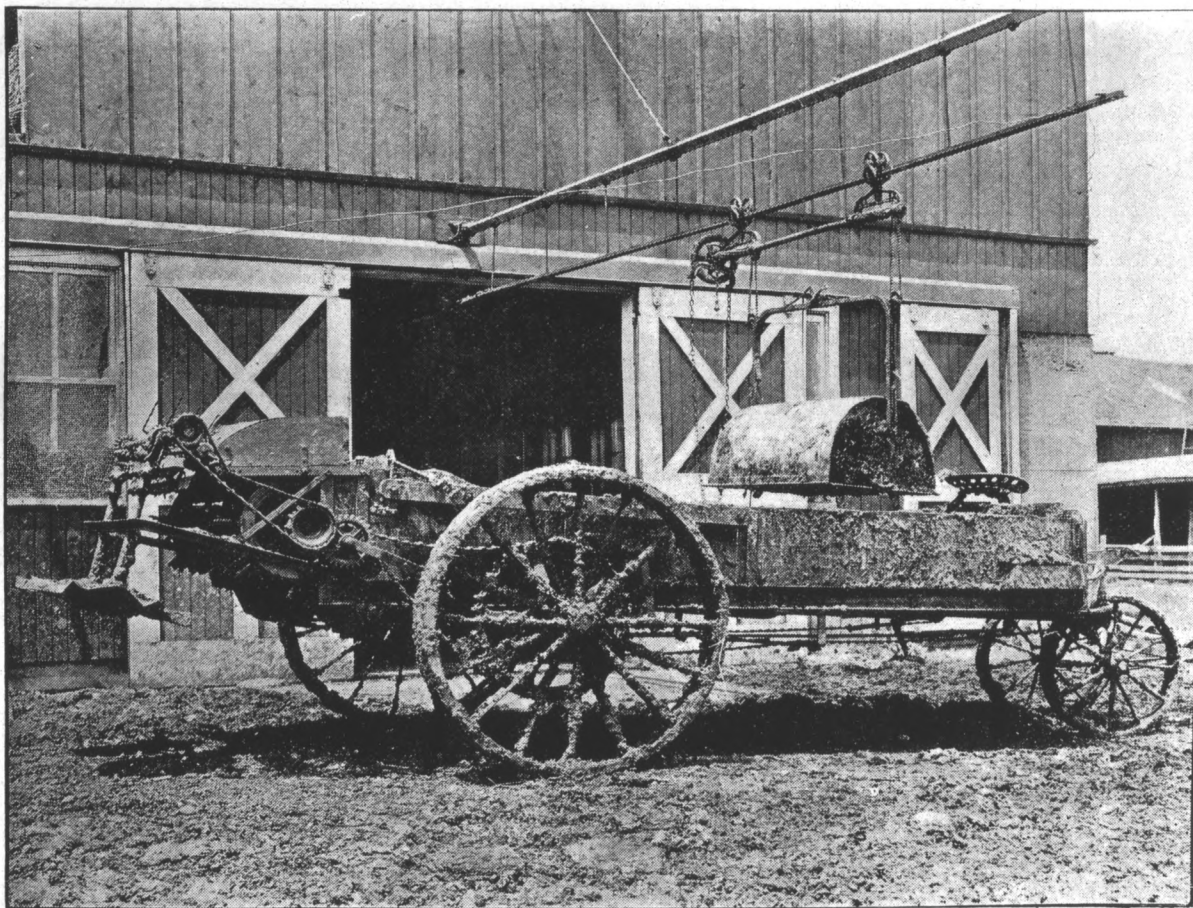
Sweet corn is a very valuable crop in certain localities when grown for canning factories or for sale on the market. The green fodder which is left is valuable as a soiling crop to supplement limited pastures. This is true even when the dairy herd is provided with summer silage.

As in the case of sweet corn, so the profitable growing of peas for canneries is limited to certain localities, but affords opportunity for large profit. After the peas have been harvested the vines may either be allowed to rot and be used as a manure, or they may be cured for hay. Such hay is an excellent feed for cattle. Following the two last named crops, wheat may be sown or, in the case of peas the land may be seeded to alfalfa.

All these crops fit nicely into a good rotation for the dairy farm. Two of them add to the nitrogen content of the soil. Several of them yield by-products in sufficient quantity and of such value as to largely pay the cost of production. The market demand for them is large, and those dairymen who have been engaged for several years in the production of one or more of the crops discussed, assert that their value is 100 per cent to 200 per cent greater than that of the oat crop whose place they take in the rotation.

Evidently many Michigan dairymen, without neglecting the interests of their herds, could improve their soils and add materially to their income by the growing of cash crops suited to their locality.

The kind and acreage of cash crops which may best be grown on the dairy farm is, of course, an individual problem in every case. Much will depend on the size and character of the farm, its location as to markets, the size of the herd maintained, the available supply of labor, and many other factors which cannot be here enumerated. The highly specialized dairy farm may sometimes be an exception to the general rule, but the average dairy farmer will, in most cases, be able to add to his labor income by introducing staple cash crops into his rotation.



The Back Door By-Product of the Dairy Increases the Yield of Cash Crops on the Dairy Farm.

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bor and expense of plowing; a well prepared seed bed being in each case prepared by the summer's tillage. A large portion of southern Michigan is accessible to beet sugar factories which furnish a profitable market for thousands of tons of sugar beets; and nowhere do we find soil conditions better fitted for the production of this crop than on the dairy farm. The extra help required for thinning the beets may be secured through the companies and the balance of the work can be done by the regular farm help. The

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DETROIT, JUNE 3, 1916

CURRENT COMMENT.

Every commercial Michigan Dairymen Organize. Michigan should read the report of the meeting of milk producers held at Lansing last week, which appears in the Farm Commerce Department of this issue. The steps taken toward the formation of a comprehensive organization of Michigan milk producers should meet with the approval and support of every dairyman in the state.

This report includes a detailed account of the methods pursued by the organized dairymen in the Chicago district in their successful fight for a compensatory price for their product which culminated so happily a few weeks ago, as previously noted in these columns. This happy solution of the economic problem of the dairymen in the Chicago district was reached through the thorough organization which had been built up by years of patient effort on the part of capable leaders and the efficient action of those leaders backed up by the united support of the large organization which they had patiently helped to build, at the opportune time for united action.

What was possible for the dairymen of the Chicago district is equally possible for the dairymen of Michigan. An auspicious beginning along this line was made at the recent meeting. Another general meeting of this newly formed organization will be held in October of the present year. If it is to serve the dairy farmers of the state in the most adequate manner, it must include a large majority of them in its membership. For this reason the dairy farmers of every local community not now organized into a local association should take steps to this end at the earliest possible date. A working organization of dairymen should be established in every dairy community previous to the October meeting of this new state organization. With the example of the Chicago dairymen, who as a class were not so well equipped to uphold their economic rights as are the dairymen of Michigan, as an incentive, the dairy farmers of this state should be able to secure results within the present year which it took many years of patient work for the dairy farmers of the Chicago district to achieve.

We bespeak for this report a most careful reading and consideration by the dairy farmers of Michigan, and urge the leaders in every community to take the initiative in the organization of a local dairymen's association at an early date, with a view of affiliating with this newly formed state organization, as a means of hastening the solution of the economic problems

now confronting the dairymen of Michigan.

During the recent months speculation in real estate has been rampant in and about Detroit. Values have soared to hitherto unknown levels and farms have been subdivided and placed on the market as "city" lots for miles about the city in all directions. Because of the remarkably rapid growth of the state's metropolis and a lack of suitable housing facilities for the rapidly increasing population, the lots in the available subdivisions adjacent to suburban or projected car lines have in many cases changed hands many times with substantial profits on these resales, notwithstanding the fact that original prices were made as high as "the traffic would bear." This fact has, in turn, stimulated trading in outlying subdivisions, devoid of all improvements and not readily accessible, with the result that acreage has everywhere been cashed in at fabulous prices.

For a time there seemed no limit to the ability and willingness of the public to absorb these offerings and real estate speculators have realized handsomely on first payments for the sale of these lots. A horde of speculative dealers and real estate salesmen have been attracted to Detroit by this condition and the game has gone merrily on until the organization of established and permanent real estate men has felt constrained to consider methods of curbing indiscriminate platting of property which will not be available or needed for building purposes for many years to come, even if the remarkable growth exhibited by the city in recent years is maintained.

Recently there has been a noticeable slackening in the sales of this class of lots to Detroit people and the promoters have been obliged to look elsewhere for a new crop of investors, or "suckers," as the case may be, and recent reports indicate that they have turned their attention to the rural districts to find them. Within the last few days we have received reports from widely separated communities in Michigan and even in border states of the operations of salesmen offering lots in these new subdivisions in the outlying districts about Detroit, and, strange as it may seem, of some cases where farmers have been induced to invest considerable amounts of money in the purchase of these "lots" in the hope of securing some of the "easy money" realized by early investors in the available home sites in the better class of subdivisions which have been placed on the market.

In view of these facts we deem it expedient to warn Michigan Farmer readers that in the judgment of even the conservative class of real estate men the pendulum of speculation in this class of property has already swung too far in Detroit to make such investments generally profitable, especially to the inexperienced buyer, who depends for his information upon the representations of a smooth real estate salesman.

In another column of this issue appears an official list of the Michigan fairs for 1916. It is published this early in order that farmers and stock breeders in all sections of the state may make necessary plans for entering exhibits at their county fairs. As many as have or may produce exhibits of a high class should also plan on entering same in their district or state fairs. By thus exhibiting products of the farm the exhibitor helps to make a successful fair, but in addition to that he helps himself much more. The educational value of the fair is thus increased for him many fold, and the lessons which he will learn in a competitive exhibit of this kind will tend to make him a better farmer and the producer of better products in future years.

All plans are being made by various

agencies throughout the state toward bettering the exhibits at county fairs this year. The Extension Department of the Michigan Agricultural College in the Upper Peninsula is endeavoring to co-operate with the different fair associations in the matter of a revision of premium lists for the various county fairs as regards the showing of potatoes. What is deemed an ideal premium list in this department has been made up and submitted to the various fair associations of the Upper Peninsula. This might well be adopted by similar associations in the lower peninsula and will be published as a tentative suggestion in a future issue.

General suggestions are also made to exhibitors for the selection of suitable exhibits in this department. Work of this kind is well calculated to increase the value and interest of the county fair. What is being done along this line by the Extension Department in the Upper Peninsula might well be undertaken by suitable agencies in the lower counties of the state. It is not too early to plan both individually and collectively on making the county, district and state fairs a greater success than ever this year by making the exhibits shown at these fairs more truly representative of the great agricultural resources of Michigan.

The Last Day of School.

In some country districts where school is not held for the full year, the term has already closed. In others that momentous occasion which gladdens the heart of the small boy soon occurs, and the last day of school for the present year will be observed. Quite frequently the people of the rural community, especially the ladies, take a passing interest in the exercises held on the last day of school.

This interest should be greater than it is, and the interest in the rural schools throughout the year should be greater on the part of every patron living in the school district, nor should this interest cease with the last day of school. Those patrons should be on hand at the annual school meeting held in July and take an active interest in the deliberations of that meeting which may effect the efficiency of the school during the succeeding year. If the reader is among that large class who have not taken active interest in school affairs, then the last day of school is a good time to begin exhibiting such an interest. Attendance at the school meeting is most desirable, as above noted, but the patron who attends that meeting without any first-hand knowledge as to school conditions will be less well equipped to serve his district than would be the case if such knowledge were gained through occasional visits at the school, if no more than the attendance of the last day exercises.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Intense fighting continues before Verdun on both banks of the Meuse river. The French captured nearly a mile of trenches in the neighborhood of Fort Douaumont, a portion of which were taken later by the Germans. The invaders are now making an effort to turn the left flank of the French forces near Dead Man's Hill.—The Austrians continue to hold the territory taken from the Italians in the recent drive and further offensive movements are promised.—On the eastern front there is nothing to report. Rumors state that the Allies are about to launch a strong offensive in the Balkan district. They have already occupied Florina, which is near Monastir. Negotiations with the officials at Athens looking toward the transportation of the Serbian army over Greek railroads to the Saloniki front are being made. The Bulgarians have rushed 30,000 new troops to Macedonia in anticipation of the new move. Experts state that this move of the Allies is for political effect upon the Bulgarians and Turks, and to distract attention from the Italian and Verdun fronts. In Asia Minor the Russians are following up recent victories although no important news has

reached America during the past few days.

Yuan Shi Kai, president of the Chinese republic, has definitely announced that he will retire from the position of chief executive as soon as a suitable successor can be chosen.

National.

James J. Hill, the aged railroad builder is seriously ill at St. Paul, Minn.

A monster defense parade, 200,000 strong, will be held in Chicago June 3. Eighteen Cleveland pawnbrokers have been fined by the courts for charging exorbitant interest rates. As many more are to be tried this week upon the same charge.

The state department has made public its recent communication to Great Britain and France, in which the seizure by the Allies of mails enroute between other neutral countries and the United States was denounced and it was declared that the lawless practice will be no longer tolerated. Only a radical change in policy which will restore this country to its full rights as a neutral power will satisfy the Washington government.

To impress the public with the need of greater attention to sanitary conditions in the homes and the city, the state board of health and the women's clubs of Detroit have arranged for June 6 a big street parade with 100 floats illustrating dangers to health and measures for rectifying these unsanitary conditions.

Farmers in the copper districts of the upper peninsula have suffered through the recent downpours of rain which washed out crops and gardens. Telephone and telegraph service was impaired.

MICHIGAN FAIRS FOR 1916.

The following is a complete list of Michigan fairs for 1916 as compiled by the secretary of the Michigan Association of Fairs, with the name of the secretary and date of each.

Owosso, W. J. Dowling, Aug. 23-25.
Howell, R. D. Roche, Aug. 27-Sept. 1.
Caro, F. B. Ransford, Aug. 29-Sept. 1.
Ithaca, A. McCall, Aug. 29-Sept. 1.
Bad Axe, A. Cornell, Sept. 5-8.
Detroit, G. W. Dickinson, Sept. 4-13.
East Jordan, Dwight L. Wilson, Sept. 5-8.
Hastings, John H. Dawson, Sept. 5-8.
Iron River, J. W. Byers, Sept. 4-6.
Mt. Pleasant, T. Wayling, Sept. 5-8.
Marquette, W. A. Ross, Sept. 5-9.
Cadillac, Perry F. Powers, Sept. 12-15.
Escanaba, John L. Loell, Sept. 12-15.
Greenville, D. L. Beardslee, Sept. 12-16.
Holland, J. Aranshorst, Sept. 12-15.
Harrison, W. L. Harper, Sept. 12-15.
Ironwood, J. S. Kennedy, Sept. 15-17.
Petoskey, E. A. Botsford, Sept. 12-15.
Jackson, W. B. Burris, Sept. 12-16.
Standish, H. W. Pomeroy, Sept. 13-15.
Adrian, F. A. Bradish, Sept. 18-22.
Bear Lake, H. R. Brodie, Sept. 19-22.
Crowell, D. E. Hubble, Sept. 19-22.
Camden, S. E. Houghey, Sept. 19-22.
Cass City, H. L. Hunt, Sept. 19-22.
Evart, J. A. Hall, Sept. 19-22.
Grand Rapids, Lyman A. Lilly, Sept. 18-22.
Gladwin, F. E. Myers, Sept. 19-22.
Hart, G. E. Wyckoff, Sept. 19-22.
Marshall, Thos. W. Bigger, Sept. 18-22.
Traverse City, Charles B. Dye, Sept. 18-22.
Allegan, Swan M. Sequist, Sept. 26-29.
Armada, Orvy Hullett, Sept. 27-29.
Alpena, Fred L. Olds, Sept. 26-29.
Bellaire, Geo. F. Frink, Sept. 26-29.
Burt, David McNally, Sept. 26-28.
Big Rapids, Edward Dresser, Sept. 27-29.
Charlotte, Vaughn G. Griffith, Sept. 26-29.
Centerville, George H. Deuel, Sept. 26-30.
Gaylord, Claude E. Shannon, Sept. 26-30.
Hillsdale, C. W. Terwilliger, Sept. 26-30.
Houghton, I. N. Haas, Sept. 26-30.
L'Anse, W. F. Menge, Sept. 29-30.
Milford, George S. Potts, Sept. 19-22.
Manistique, Ed. Kalbfleisch, Sept. 27-29.
North Branch, Adam Wingert, Sept. 26-29.
St. Johns, C. S. Clark, Sept. 26-29.
Stephenson, Charles G. Swanson, Sept. 26-29.
Sandusky, W. A. Moore, Sept. 26-29.
Tawas City, Alfred J. Noll, Sept. 27-29.
West Branch, W. A. Crandall, Sept. 27-29.
Fowlerville, Geo. A. Newman, Oct. 3-6.
Hartford, Stephen Doyle, Oct. 2-6.
Imlay City, Frank Rathsburg, Oct. 3-6.
Saginaw, F. F. Kleinfeld, Oct. 3-6.
Wolverine, Clare D. Scott, Oct. 3-5.
Allenville, P. A. Lupenitz, Oct. 11-12.

Northern Michigan Farming

By SAMUEL WILLIS

At various times I have been guilty of finding considerable fault with the land in Northern Michigan, and my reasons for doing so have been brought about by conversations which I have had at different times with men who have spent half of their lives on farms of 160 acres, more or less, in the northern part of the state. Every year they have bought their hay with which to feed half a dozen head of stock. In fact, most of them have been drawing their hay the wrong way, from the station to the farm instead of from the farm to the station, and when I have gone around the country and seen empty barns, with no stack of hay or straw anywhere around, I about decided that this northern Michigan land was not worth any more than so much clear sky for farming purposes. None of us would ever be losing our time in the attempt to farm clear sky, neither would we be deceived by the inexperienced tax commissioner who comes along and tries to make us think we are worth about four times what we thought we were, when he places the valuation on this northern property. However, most anyone can find fault, but when it comes to suggesting better methods that is a different matter, and one has some job on his hands. When a man makes a mistake we usually think it partly right for him to "own up," but how much better it would be if we could avoid these mistakes and in that way keep off the rocks.

The Personal Equation.

Now the fault is not altogether the fault of the land; it depends some upon the man. This land puts me in mind of the horse a fellow tried to sell me one time. When I asked him if the horse was sound, he replied that the horse was "some sound." Now that is the way with the land in northern Michigan. It has some advantage over heavy land. You can work it any time after the frost is out, it is easy to work, and one does not have to spend any money in tile drains, etc. As I said before, it depends on the man whether it is farmed profitably or not.

We must admit that the American people are very destructive. This country used to be rich in game and timber, but the game has been slaughtered and trapped, whether it was needed or not, just for the sport it afforded, until laws were passed to put a check on the wastefulness. The same plan was practiced with the timber. We came in here and logged days, nights, and even Sundays, cut and burned until suddenly we realized that it was wrong, and then the matter of forest preservation was taken up. The better method for cutting the timber would have been, for example, to have gone into a tract of say 10,000 acres, cut only the ripe timber on say 1,000 acres per year. This could have been continued till the whole 10,000 acres were cut over, and would have afforded from three to four million feet yearly, which should have been enough for any concern. Then a return to the first thousand acres could have been made and logging could have been carried on indefinitely on the same tract.

Legumes the Foundation of Agricultural Wealth.

Now we are at the soil, God's greatest gift to man, and what are we doing with it? At least most of us are doing the same thing—killing, slaughtering, cutting and robbing the soil by our greed to take everything out of the soil and put nothing back into it. Now land is worth what it can be made to produce; that is what sets the value upon it. There are a great many different kinds of soil in the United States and a great many different kinds of plants growing upon these soils, but I consider clovers of the legume family the foundation of farming as well as the foundation of agricultural wealth. In my experience I have found that sweet

clover stands at the head of the legume family, as a pasture plant, a hay crop, a seed producer, and most of all, as a fertilizer and soil builder, while sand vetch comes second and alfalfa third, these being all deep rooting plants that do fairly well under proper management on this land where we are finding it difficult to produce forage crops.

A Rational System of Farming.

Now there are several classes of farmers. There is the ordinary farmer—the farm works him. There is the agriculturist—he works the farm. There is the undertaker—that's me. I am undertaking to farm. I would not have you think that there are only two ways of doing things. "My way" and the "Wrong way," but I know, and so do you, that some of the methods practiced in the past have not met with the success in many localities at least, which should have been realized from the efforts put forth. Why is this? I contend for the reason that the practice has always been to raise what I term land robbing crops, such as grains and cultivated crops, while if crops of the legume family, which are constantly gathering nitrogen from the air, has been raised better results would have followed. Now nitrogen is the first element to leave the soil and the first one to need replacing—as well as the most expensive one to replace if done by artificial methods. But this can be accomplished by a

sowing the seed on the light sandy soil, such as is found mostly in northern Michigan, I use what is called a nurse crop of buckwheat. By this nurse crop I do not mean to sow enough of the buckwheat to reap a bountiful harvest, but simply enough to help hold the soil in place until the sweet clover has taken root and established itself well enough so that the blowing of the soil will not cover it and smother it out. I sow, in the month of June, for the best results, on well fitted ground, using a drill. I gauge the drill down as fine as possible, stopping up every other hole, so as to get on less than a peck of buckwheat to the acre. In this manner the sweet clover will be sown in every other row and the buckwheat in every other row, each in rows about 14 inches apart. I put the seed into the ground to a depth of from one-and-a-half to two inches, using about a peck of buckwheat and from eight to 10 pounds of sweet clover to the acre, using the hulled seed, of course. I then follow behind the drill with a roller, not a common type roller, but one of these corrugated, culture-pack-rollers. This holds the moisture, makes the ground firmer and is the best method I know.

A Succession of Legumes.

Now, while I do not claim to be an authority on raising sand vetch, yet I have found what to my mind is one good way to raise vetch. That is to sow early in the fall with wheat. The reason for not using rye is that rye ripens earlier than vetch, while wheat ripens about the same time. I use one-

produce bountiful crops. My message may not have been of any help to you, but if there are any among you who are interested enough in this matter to pay me a visit at my farms at Thompsonville, I have about decided that some time during the summer months I would set apart three days of some week, in which I could devote my entire time to showing anyone around that may be interested in coming there. Just when this date will be I cannot say now, but will try and arrange to find a way to announce it to the general public through the papers. The county agricultural agent, and the County Grange Association, so that if there is anyone who wishes to avail themselves of this opportunity they may do so.

Mr. Willis gave a most interesting address on the above topic at the first Northern Michigan Agricultural Congress, held at Cadillac on May 17-18. He has been notably successful in building up the soil of his Benzie county farms by the use of sweet clover in the manner described in this article. His methods are worthy of careful study and emulation by the farmers located on similar soils in Northern Michigan and the lighter soils of the southern portion of the state which are low in their content of vegetable matter.—Editors.

BLASTING HARDWOOD STUMPS.

The great majority of the best grade of wild land in the northern part of this state is "hardwood land" and, consequently, the great volume of stumps to be gotten rid of are hardwood stumps. By "hardwood stumps" we mean maple, beach, birch, hemlock and basswood.

There are several reasons why the use of dynamite is prevalent, the main one of which is economy. And since economy is the object of blasting, it naturally follows that the economic use of blasting supplies is of paramount importance.

The writer has, personally, used something like two tons of dynamite in the various kinds of blasting; and always with an eye to the elimination of waste. We find that in the blasting of hardwood stumps, detonation is the best, and cheapest, done with cap and fuse; occasion but rarely arises where a blasting machine is required.

The charge is placed under the center of the stump, or the point of greatest resistance. The ability to calculate this, and the amount of the charge, correctly, is obtained only by practice. It will readily be seen that correct location and amount of charge is the secret of economy.

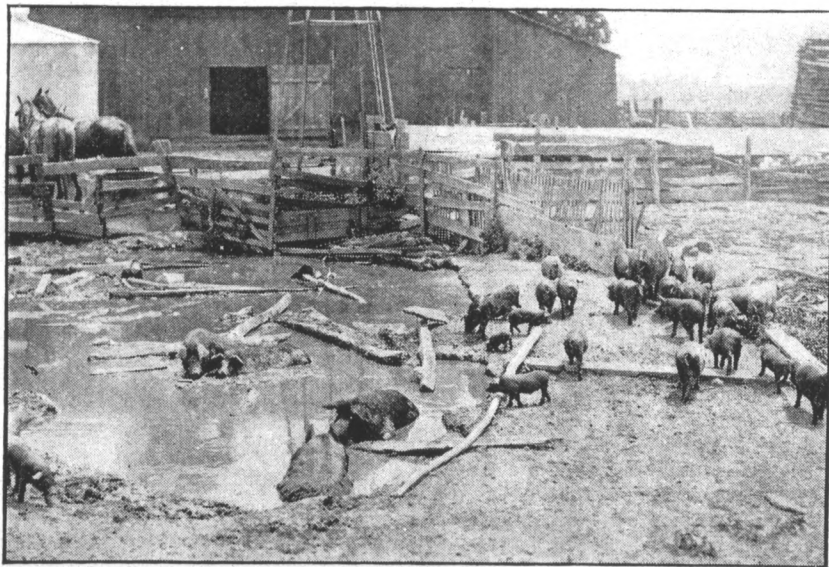
With this idea in mind, the writer made a bar from a piece of steel shafting, which is five and a half feet long and weighs 23 pounds. One end of this bar is drawn to a point, and the other is flattened like a chisel. We use the pointed end to punch the holes for the charge, and the chisel end to cut off small roots that sometimes interfere. When we approach a stump, the calculation of the amount of the charge is greatly facilitated by "sounding" it; this is done by swinging the bar endwise and striking the stump with the chisel end. It can readily be seen that, unless the stump is a solid one, it can be shaken more or less with a bar of this weight.

It is a man's work to swing this bar all day, but the economy is well worth the effort.

In blasting on heavy clay, when it is wet, the bar sometimes sticks so that it can not be used to advantage. In this case, it is better to have a one and a half inch auger, with a four or five-foot shank, with which to bore the holes.

As a rule the proper dynamite for hardwood stumps is a medium slow powder of 40 per cent strength. In old stumps on clay soil we would recommend the use of dynamite of 20 per cent strength; and on lighter soil and fairly green stumps 60 per cent is better. In all cases where it can be used, we recommend the use of the bar.

Otsego Co. G. F. DE LA MATER.



Unsanitary Conditions in the Barnyard not Tolerated by Progressive Farmers.

very cheap method when crops of the legume family are grown, especially sweet clover, and when we consider that there are thousands of dollars worth of nitrogen in the air over every acre of land, is it not a very simple and cheap method of returning it to the soil again when we grow a plant of which we can make hay or pasture and at the same time replace humus and nitrogen to the soil beneath? I am speaking now of the soils on which we are having so much trouble to produce paying crops. They are the ones from which the nitrogen has leached out and escaped like gas. They are lacking in humus, and they must have a balanced ration, the same as stock, before they can be made to produce paying crops. By this I do not wish you to understand that nothing but legume crops should be grown, but they should be grown in rotation and often enough to replace in the soil the elements which the other crops rob from the soil. After this is done grain and cultivated crops can be grown successfully in rotation.

Successful Methods of Growing Legumes.

There are several good methods which could be used in growing the legume crops, any or all of which might prove successful, but I might mention one good as well as profitable method which I have tried out. In

half bushel of vetch and one-half bushel of wheat per acre; sow with a drill, stopping up every other hole. In the seeder of the drill I put sweet clover and stop up every other hole. The following spring I cross-drill this field early, with sweet clover, stopping every other hole. The following year you will have, by using this method, a field you can use for hay, pasture or a seed crop. In this way one has realized two good crops with once plowing and tilling the soil, and have at the same time been building up the land. And on this sandy land, the soil being light, don't forget the use of the culture-pack roller of the corrugated style, following the drill, and always use the drill for seeding, never sowing broadcast. Use the hulled sweet clover seed and of the northern-grown white blossom variety.

Now gentlemen, I am going this way only once, for none of us are allowed but one trip on life's journey, but I am ready and willing to share my experience and knowledge, if I have any, with my fellow man. I have answered at my own expense many letters regarding my experience with sandy land farming, and I am not charging anything for my time. All I wish to see is a bigger and better northern Michigan, and I believe that with the co-operation of the farmers this can be brought about, and this land be yet made to

Oil Mixed Concrete

BY FLOYD W. ROBISON.

(Continued).

"For most purposes where damp-proofing is required, five per cent of oil based on the weight of cement in the mixture is all that is necessary. A bag of cement weighs 94 pounds, and consequently, for each bag of cement used in the mixture, 4.7 pounds, or about two and a half quarts of oil are required.

"Let it be supposed that a batch of concrete requiring two bags of cement is to be mixed in the proportions of one part of cement to two parts of sand to four parts of broken stone or gravel, together with five per cent of oil. Four cubic feet of sand are first measured out in a bottomless box 12 inches deep and two feet on each side. On top of the sand is spread the cement and these materials are mixed together until they appear to be of uniform color. Water is then added to the mixture and the mass again mixed to a mortar of mushy consistency. Five quarts of oil are then measured out and added to the mortar, and the mass again turned until there is no trace of oil visible on the surface of the mortar. Particular care should be taken to continue the mixing until the oil is thoroughly incorporated in the mixture. Experience has shown that to insure the very best results the length of time of mixing should be practically double that required when oil is not used. The oil-mixed mortar is then combined with the stone or gravel previously moistened and the mass is again turned until all of the stone is thoroughly coated with the mortar and the mass is uniformly mixed throughout. Should only oil-mixed mortar be desired, the process is similar to that above described except that no stone is added.

"In a machine mixer the cement, sand and water are first mixed to a mortar, when alternate batches of oil and stone are added until the required quantity of oil is mixed, and then the remainder of the stone is added and mixed. When a batch mixer is used, the exact method of procedure should be determined by experiment, owing to the fact that different makes of mixers require slightly different handling to insure best results. A continuous mixer should not be used in oil-cement-concrete work, as with this type the time of mixing can not readily be increased to the extent necessary to insure a uniform distribution of the oil."

Basement Floors.

In the construction of basement floors of concrete the following method of construction is suggested by the Department of Agriculture as one which will prevent the permeation of moisture even from a very wet subsoil:

"It will be well, if the underlying soil is very wet, to lay a six-inch foundation of sand, cinders, broken stone, or gravel, compacting these materials well by tamping. In addition, it will be of advantage to employ drain tiles in this porous foundation, leading them to a sewer if possible. On top of the foundations should be laid a four-inch layer of concrete mixed in the proportions of one part of Portland cement, two and one-half parts of sand, and five parts of broken stone or gravel. Before the concrete base has hardened, a top or wearing coat of mortar mixed in the proportions of one part of cement and two parts of sand or stone screenings, and containing five per cent of oil (two and a half quarts per bag of cement) should be laid. This top coat, because of its non-absorbent character, will give perfect protection from underlying moisture, and moreover, it will build a floor which will dry out very quickly after washing, since practically none of the washing water will be absorbed."

How to Water-proof an Old Floor.

In case a concrete floor is already in and trouble is experienced through the

permeation of moisture in which condition they are kept continually damp, owing to the evaporation of the moisture from their surface, the Department states that the condition may be remedied by the application of an oil-mixed mortar coat to the surface of the old floor.

"Before attempting to lay the new wearing surface the old floor should be scrubbed thoroughly clean and should be made thoroughly wet. The bond between the old and the new work will be improved if the old surface be roughened with a stone hammer."

"A wash composed of one part of hydrochloric acid and five parts water may be used to clean the surface. This will dissolve some of the cement from the old work, leaving the aggregate exposed. The acid solution should be left on not longer than half an hour, when it should be completely removed with clean water. The surface should then be brushed with a wire or stiff scrubbing brush to remove any particles of sand which may have become loosened because of the dissolving of the cement."

The proportions which are recommended to use in this new wearing coat are as follows: One part cement, two parts sand, the whole containing five per cent of the mineral oil. In the case of cellar walls the following mixture is recommended: One part cement, two and a half parts sand, and five parts of gravel or broken stone, together with 10 per cent of oil, based on the weight of the cement in the mixture.

In case a cellar wall which is now in has given trouble through leakage the following plaster coat is recommended: Two parts of cement, two parts of sand and five per cent of oil by weight, with enough water to form a rather stiff mortar, using the same precautions and procedure as in the new wearing surface on the cement floor.

Watering Troughs.

For watering troughs is recommended one part of Portland cement, two parts of clean, coarse sand and four parts of gravel, ranging in size from a quarter inch to one inch. To this is added 10 per cent of oil based on the weight of the cement and the same should be thoroughly mixed to intimately incorporate the oil.

For cistern construction there is recommended the following mixture: One part of cement, two parts of sand, and four parts of gravel or broken stone, with 10 per cent oil, based on the amount of cement used.

The inner walls of the cistern it is stated should be painted with an oil-mixed cement grout applied with a stiff brush and rubbed well into the face of the wall. Two coats of this grout should be used, containing about three per cent oil.

A BETTER FILING SYSTEM.

I am interested in the communication of Mr. G. F. De La Mater in the Michigan Farmer of May 20, just received, concerning the Farmers' Scrap Book. Like Mr. De La Mater I have long felt that I could not afford to throw away the valuable articles continually appearing in the Michigan Farmer from the pens of members of the M. A. C. faculty, county agricultural agents, and specialists from all over the country, treating of topics on which I may very much want just that information sometime, perhaps soon; and if I depend on memory most of it fails.

But as for the scrap book, it is an abomination. The thing you want is frequently on both sides of the sheet, and covered up in part if pasted to anything. Often articles are found in other places in columns of different width, for example, experiment station bulletins, and no sort of width column or size page suits all cases. If articles are pasted in as found in succession instead of classified, your book is a lumber pile in which you can find anything only by chance or long search, even after you have saved it.

If you try to make departments your classification crosses and changes with experience, and you never can tell in advance what space any topic will need. Moreover, the time and labor taken to paste and cut soon tire the attempt to save.

Much better than a scrap book is the ordinary letter file box that may be had at any book store for a few cents, with alphabetical partition sheets; or, better still, the vertical file folders, like a sheet of note paper, with a projecting strip at the top, on which you may write any topic you please as a heading; arrange these folders in alphabetical order in a small box. With this contrivance it is the work of but an instant to cut out any article that interests the reader, and drop it into the folder containing his collection of matter on that subject. With this scheme, also, all the articles on any topic are classed by themselves. Whenever he wants to consult his encyclopedia of agriculture, he at once finds all the matter in one place—bulletins, articles, and shorter communications.

There is another feature of this scheme that should not be overlooked. It is always complete (no blanks), always room for growth, and can be rearranged any minute. A man starts with a general topic, "Potatoes!" As his material accumulates he rearranges it into sub-topics—cultivation, sprays, seed, marketing, storage, etc. In a little while a mass of material suited to his individual line and locality, arranged to his own fancy, is accumulated, more and better than he could buy in book form for any money, which has cost him neither time nor money, and with all of which he is familiar by reason of having read and filed it.

Washtenaw Co. JOHN. R. ROOD.

LILLIE FARMSTEAD NOTES.

Continuous rain and cold weather has injured the wheat crop. It does not look as thrifty as it did two weeks ago. In spots it is turning yellow on undrained land and on some poorly drained fields some portions of the field are totally ruined. I should say that the average yield has been cut down by this cold, wet weather at least five bushels per acre, perhaps more.

Light frosts May 18-19 have done some damage to clover and alfalfa. The plants were pretty well prepared for frost by the cold winds, but some damage has been done. Numerous plants of alfalfa in frosty places have had their leaves "blistered" and have turned white. It is not so serious but that the damage will be partially overcome, but plants never wholly recover from Jack Frost's bite. A friend remarked the other day that farming was the greatest gamble in the world, and he is about right. The farmer can never feel positive as to the results he will get. That is the reason why general farming is safer than highly specialized farming. Some crops will probably pull through in fairly good shape, even though others are ruined.

Farmers are beginning to get nervous about the corn crop. Here it is the twenty-second of May, much of the plowing for corn is not yet done, and the weather is too cold to plant. But there is no use in worrying. It won't help. A wet, cold spring usually means a late, warm fall. The great law of nature is compensation, Emerson tells us, and our own observations bear this out. The seasons seem to have changed somewhat. We no longer sow oats the first of April, nor plant corn the tenth of May. Neither do we have killing frosts by September 10. These things used to be normal conditions when I was a boy. But now we sow oats after the fifteenth of April and plant corn after June 1, but we have until October 1 to secure the corn crop. What is the use in planting corn when the mercury stands around 40 to 50 degrees. It won't grow. It is liable to rot. Do something else until the sea-

son becomes warm enough for corn, and you will have a better crop.

Alfalfa with Wheat.

Last spring (1915) we seeded about eight acres of wheat to alfalfa and clover, mixing about one-third clover seed to two-thirds alfalfa. Last summer there seemed to be a fair stand of alfalfa, but now there seems to be mighty little alfalfa but a good stand of clover. Perhaps after the clover is cut the alfalfa may come on. We will see. A friend told me once about doing this same thing. The first year there was a good crop of clover. The second year a crop of clover and alfalfa and the third year a good crop of alfalfa. Will mine turn out the same way? I hope so, but it does not look that way now.

This land was manured and limed and fertilizer applied when the wheat was sowed. The only thing left out was inoculation. There was a good crop of wheat and there is a splendid stand of clover. I hope the alfalfa is held in reserve.

COLON C. LILLIE.

FARM NOTES.

Questions on Bean Culture.

Will you state how to treat beans for blight and tell how, when and how much fertilizer to use. I read the account in the April 22 issue but it did not answer my questions. How much seed is best for a sandy loam soil?

St. Clair Co.

D. E. D.

There is no known successful method of treating seed beans for the destruction of the spores of bacterial blight and anthracnose. The only method of insuring immunity from these diseases is to plant disease-free seed on clean ground, and no grower should fail to approach as nearly to these conditions as opportunity will permit.

Fertilizer for beans is best sown through a fertilizer drill which may be used for planting the beans, distributing the fertilizer through the drill hoes on either side of the row, instead of putting the same in the row with the seed which might tend to injure germination. About 200 pounds per acre is recommended by many successful bean growers to be a profitable amount to use. From one-half bushel to three pecks of seed per acre should be used, depending upon the condition and fertility of the soil and the size of the bean seed.

Destroying Gophers.

I wish you would publish in your paper how to eradicate gophers. I had a field of 18 acres in corn last year and I had to replant the corn three times and still I got only half a crop. While I am plowing at present I notice quite a few gophers. Now if I only knew of a remedy I would apply it. I would surely try to kill everyone of them.

Indiana.

B. S.

One way of destroying gophers which is sometimes recommended is the saturation of a little ball of cotton waste or cloth with carbon bisulphide, dropping this in the gopher hole and stopping same up with earth, the gas from this volatile chemical quickly proving fatal to the gopher imprisoned therein. Poisoning is difficult without danger of killing valuable birds or animals.

The Chess Question Again.

I have a field of wheat which was very thin on the ground. I did not think it would be more than half a crop, so early this spring I pastured it down. I intended to plow it up and plant it to corn, but the wheat has since stood out and seems thicker on the ground than it was before pasturing it. Would it now be profitable to leave it, or would it be liable to be chess?

S. L. H.

While the yield of wheat will probably not be as good as would have been the case had the field not been pastured, there is no more likelihood of the presence of chess because of the pasturing. It has been conclusively proven many times that wheat does not turn to chess, but that the seed of chess must be sown in order to produce chess in the wheat crop.

Orchard Observations

Apple Scab

THE organism which causes the disease known as apple scab was first noted in America in the year 1834. It was found in New York. Since that time it has been found in nearly every apple growing-region in the Union and has caused tremendous destruction each year.

The scab first appears on the young leaves at the time of blossoming, generally attacking the lower side of the leaf first. The diseased area is at first olive in color, deepening with age until it is dark brown or dark olive, and finally black and velvety in appearance. The margin of the diseased spot is quite definite, except when it appears on a vein. Distortion of the leaf may result. The spots may be numerous on the leaf remaining separate or scattering. The spots vary in size from very small to, in severe cases, a half-inch or more in diameter. The diseased surface of the leaf may be slightly raised. Later the tissue of the diseased spot dies. The leaf may then be torn by the wind, as the diseased spots dry and crack. This is often the condition of the leaf during the middle and latter part of the summer.

Early Attacks of Scab.

On the fruit the disease appears shortly after blossoming. The stem of the flower may be attacked while the fruit is setting, and cause the young fruit to fall. In fact, Bailey, 1895, stated that the failure to set fruit is not so often due to cold rain as to attacks of scab. The scab spot on the fruit is very small at first, later often becoming large enough to cover half or more of the fruit. The color is similar to that of the leaf spot and the margin is perhaps more distinct. During the growth of the fruit the diseased area may split and check and the fruit may become one-sided.

The cause of scab is a fungus which winters over in the tissues of the old leaf and by means of spores infects the young leaves as they appear in the spring. The spores may be discharged from the old leaves in late April and early May and so the first leaves which appear may be infected more severely than the leaves from the later leaf buds, the fruit bud leaves appearing first. But before the old leaves discharge their spores no infection can occur as the fungus probably has no other way of living over winter except in the old leaves. In fact, where all the old leaves are burned the disease does not appear.

The Time of Infection.

An important point to consider is the time required for the disease to make its appearance after the spores has fallen on the leaf and begun to grow. Not knowing this the fruit grower may believe all is well and not spray until the disease actually appears. At Cornell it was found that if infection occurred May 7, the time the buds were just about to open, the disease, or scab spot, did not appear until May 22. The spores from the dead leaves were being discharged May 4, or three days before the buds opened. This proves that the infection may occur as soon as the bud opens and therefore it is not wise to omit the spray when the blossoms are in the pink. As the leaves on the ground seldom discharge spores long before the buds appear in the pink the spraying previous to that time has no effect in controlling scab, neither does it prevent the discharge of spores from the dead leaves or kill the spores, for they are buried in the dead leaf.

When the rainfall is abundant the amount of scab is greatly increased. High humidity and moist drizzling rains are very favorable for the scab organism. Therefore, spraying should be more thorough. Rain should not prevent spraying as spray will stick if

it has 30 minutes to dry in and during the rainy weather, if the blossoms are open, is just the time the scab fungus is getting started on the leaf.

The Importance of Early Sprays.

Another factor which enters is not the least in importance. The old leaves may discharge all their spores, but if the leaves of the fruit buds which come out first get the infection, and no spray was applied while the blossoms were in the pink, they spread the scab by means of spores to the other leaves if the weather is favorable. It does not require much primary infection to scatter the disease over the remaining leaves and fruit. Therefore the first spraying and the second are the most important of all. The young leaves and fruit in growing continually form new surfaces which are exposed to this secondary infection. The young fruit which has just set and escaped the primary infection may, during rains be attacked by spores from the diseased young leaves and soon be covered with scab spots.

Sanitary measures may be employed to a certain extent. Good air drainage keeps the leaves dry. Good trimming lets the sun in and gives good drainage for the air. The old leaves, if the orchard is on low moist ground, may continue to discharge spores for a longer time than if dry, so plowing should be resorted to. In fact, plowing under the leaves is a splendid means of preventing infection. The plowing should be done as early as possible. Spraying should be done at the proper time if this is at all possible. It is not uncommon to see a splendid crop ruined by leaving out one spray. Spraying should be done when the blossoms are in the pink and when the petals begin to fall. The next spray may be in connection with the codling moth spray. Continued spraying is the greatest aid to keeping the orchard clean. It increases the vigor of the trees as all the leaves are left on and thus continue to produce food for the tree. It makes it easier to control the scab as the old leaves are not diseased and so cannot carry over the disease.

The Annual Loss Due to Scab.

The loss due to this disease is enormous. It is estimated that the loss in the United States is about \$47,000,000 annually and in Orleans county, New York, Cummings estimates the loss at \$600,000. Beach estimates that scab alone is responsible for 40 to 50 per cent of the fruit not setting. This is not strange to experienced apple growers, but may be startling to the less experienced. Evidently good judgment and eternal vigilance are necessary if one wishes to become a fruit grower.

Prof. Eustace found that scabby apples, when placed in storage, were apt to have a pink rot following apple scab. In some cases the scab has spread in storage or developed scab shortly after picking. Undoubtedly the losses in storage have been great.

Wisconsin. C. N. FREY.

TROUBLE DEPARTMENT.

Growing Onions.

Kindly advise which would be the best onion seed to plant on black sandy loam to produce the best crop, also when to plant and how to care for them.

Monroe Co.

L. W. R.

As it is rather late for planting onions, I would advise the use of onion sets. The onion is a cool weather plant, and likes considerable moisture; for that reason it should be started as early in the spring as possible.

The best varieties are the Danver and Prizetaker. The chief essentials in successful onion growing are to have rich soil, plenty of moisture, and frequent weeding and cultivation.



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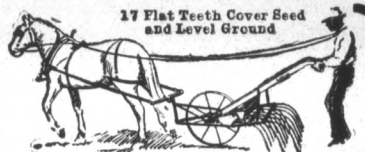
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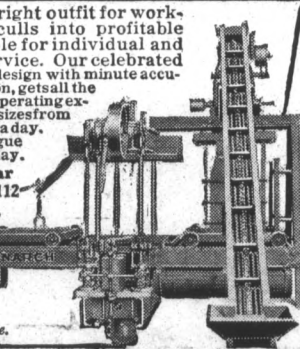
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MISSOURI CATTLE FEEDING EXPERIMENTS.

The Chicago market was recently topped by one of five lots of cattle fed by the Missouri Agricultural Experiment Station to determine the profitability of using silage and nitrogenous concentrates in cattle feeding. The particular lot of six steers which topped the market did not make as much profit as another lot fed more economically and marketed on the same day. The market toppers were fed 133 days on shelled corn, oil meal, corn silage, and alfalfa hay. They dressed 64.19 per cent of beef of a quality that made them well worth the high price of \$9.75. They made an average daily gain of 2.45 lbs. and yielded a net profit of \$9.32 a head.

The complete test included five lots of two-year-old steers fed average daily rations of (1) 15.6 lbs. of shelled corn, 2.6 lbs. of cottonseed meal, 17.67 lbs. of corn silage, and 3.69 lbs. of alfalfa hay; (2) 15.24 lbs. of shelled corn, 2.54 lbs. of old process oil meal, 16.47 lbs. corn silage, and 2.27 lbs. of alfalfa hay; (3) 5.05 lbs. of cottonseed meal, 36.22 lbs. of corn silage, and 3 lbs. of alfalfa hay; (4) 5.05 lbs. of old process oil meal, 37.62 lbs. of corn silage, and 4.03 lbs. of alfalfa hay; and (5) 16.26 lbs. corn silage, 15.27 lbs. of shelled corn, and 3.9 lbs. of alfalfa hay. All lots had access to all the silage and alfalfa hay they desired and the figures given indicate the amounts they actually ate under these conditions.

	Lot 1.	Lot 2.	Lot 3.	Lot 4	Lot 5.
Average daily gain per steer, lbs.....	2.72	2.45	1.97	2.38	2.14
Cost of gain on steers per 100 lbs....	\$10.42	\$10.58	\$10.15	\$ 8.58	\$10.88
Selling price per 100 lbs.....	\$ 9.60	\$ 9.75	\$ 9.65	\$ 9.65	\$ 9.75
Pounds shrink per head in shipping...	48.89	39.44	43.11	39.71	30.00
Percentage dressed beef.....	63.53	64.19	62.38	61.33	62.58
Net profit per steer.....	\$ 6.77	\$ 9.32	\$ 9.87	\$14.56	\$10.53

Lots 1 and 2 were fed their cottonseed and linseed oil meal at the rate of one pound of the concentrate to six pounds of corn. After the first 30 days they received all of this mixture that they would clean up within a reasonable length of time after feeding. The same method of feeding grain was followed in the case of lot 5. Lots 3 and 4 were started on two pounds of meal per head daily and gradually increased during the latter part of the fattening period until they were eating seven pounds apiece daily. These lots received no corn except that which was in the silage.

In estimating the cost of gain and profit per steer, corn was included at 70 cents a bushel, corn silage at \$4.50 a ton, cottonseed and oil meal each at \$37 a ton, and alfalfa hay at \$14 a ton. The gain on hogs was credited to the steers at \$8.00 a hundred pounds. In Lot 3 the hogs lost slightly in weight and this loss was charged to the cattle feeding operations at the same rate.

The results indicate clearly the possibility of fattening cattle successfully without corn other than that contained in silage when a liberal allowance of some high protein concentrate is fed. The cost of fattening cattle can be reduced by this means. The total cost of feed fed per steer in Lot 3 was \$26.07 and in Lot 4, \$27.44, while in Lot 1 it was \$40.85 and in Lot 2, \$38.63. In rations where corn was fed only in the form of silage the hogs were practically eliminated as a factor in cattle feeding. While it is possible that the best finish cannot be obtained on fat cattle without adding corn to such rations as were fed to Lots 3 and 4 during the latter part of the fattening period, it is possible to make a choice grade of beef without additional corn. By the fullest use of silage and high protein concentrates such as cottonseed meal, the capacity of a farm to fatten cattle can be greatly increased and our farming intensified.

Mo. Ex. Sta. H. O. ALLISON.

FEEDERS' PROBLEMS.

In his Lillie Farmstead Notes, published in the last issue, Mr. Lillie told of his experience in cattle feeding

this year, drawing a comparison of the result with the results secured from a similar number of grade cows purchased at the same time. The result of this comparison is not at all surprising, in view of the circumstances. Mr. Lillie is an expert dairyman, with an established market for a high-grade product. At the same time he states that this is his first experience in feeding steers, and that he cannot be expected to know how to get a maximum profit from them. It would appear to the writer that he either paid too much for his feeders or sold them at too low a price this spring, market conditions considered. In this connection, other experiences may be of interest to the reader, for which reason I will give the result of a small feeding operation carried on with a cheap grade of feeding steers this season.

I bought 28 head of steers which were put in the day after Thanksgiving at \$5.75 per cwt. Nineteen of these were sold the first week in April and the other nine the fifteenth of May. The bunch brought a net price of 7½¢ per pound.

They were fed shelled corn and alfalfa hay of rather poor quality as an exclusive ration. They were not given a full feed of corn, as they were not a class of cattle that would pay for a high finish.

These cattle cost \$1,392.50 in the yard. They brought \$2,102.32, or \$709.82 more than they cost. The feed consumed by these cattle and 20 hogs which were run with them, had a value of \$463.15 for the grain, and \$344.00 for the hay, figured at \$10 per ton in the barn. The hogs made a net gain of \$201 after they were put in with the cattle, making a total gain on the feeding operation of \$910.82.

Thus, after selling the hay and some grain of our own at the market price, we had left a net profit of \$113.67, besides the manure made from the feeding operation. I have figured the value of this fertilizing material on the basis given by Prof. Henry in his book, and find the fertilizing value of the feeds used after being fed to fattening animals to be \$346.17. We had about 200 spreader loads of manure which we distributed over about 40 acres made from this department of our live stock during the winter. No account was taken of straw used in figuring this fertilizing value, as that would have been used for some similar purpose anyhow.

While this is a better showing in the way of profitable cattle feeding, it by no means represents a maximum profit. Under the market conditions which have prevailed this year there would have been a greater profit in feeding a better grade of cattle and giving them a higher finish. In fact, judgment in purchasing feeders is as essential to success in commercial cattle feeding as is skill in feeding for economical gains. The reason for purchasing a rough class of feeders in this case was the fact that it was desired to market a quantity of damaged hay in this manner with a minimum expenditure for grain feeds, which object was accomplished in a satisfactory manner and at a reasonable profit.

Cattle feeding is, however, not a business which affords a legitimate comparison with dairying, as it may be conducted by the average farmer. It is comparing a side line with a specialized business, and for the man who specializes in dairying it may not be profitable as a side line under all conditions. But as a general proposition it is more available as a winter operation which will enable the farmer to market home-grown feeds without selling the fertility which they contain to the detriment of his farm, and at the same time it will afford profitable employment for the long winter months.

A Ration for Young Pigs.

Kindly balance me a ration for pigs just taken from the sow. I have skim-milk, and how much should I feed to each pig to start on?

Genesee Co.

B. F.

The most profitable method of making up a ration for young pigs where skim-milk is available depends in a large degree upon the number of pigs to be fed and the amount of skim-milk available. There is little danger in feeding too much skim-milk, experiments having been conducted in which skim-milk was made the sole ration of a pig from birth to maturity with fair results, showing a normal development of the pig. Where the pigs have access to pasture this is undoubtedly possible, but the value of the skim-milk when so fed will not be as great as would be the case where this feed is balanced by the addition of carbonaceous grains.

For very young pigs, however, only a small amount of carbonaceous grains can be fed, hence it will be wise to feed largely of skim-milk with a little middlings for the first few weeks after weaning. Gradually corn meal or other carbonaceous feed can be profitably added to this ration until the pigs are consuming one pound of corn meal or other similar grain, to one to three pounds of skim-milk, according to the amount of skim-milk available. When fed within these limits, the greatest value in growth will be secured from the use of skim-milk in the ration for pigs.

As to the amount which should be fed, this will depend only upon the capacity of the pigs, which should have all they will eat up clean at frequent periods at first, and two or three times per day as they gain more age. For best results the pigs should also have access to green and succulent forage or pasture crops.

Effect of Rape on White Pigs.

Does rape cause trouble with Chester White hogs, such as the ears cracking and tails sloughing off?

Livingston Co.

L. G.

Rape combined with sunscald sometimes causes a scurfy and sore condition of the skin. This is remedied by an application of oil, which will cause same to heal. The same difficulty will, however, sometimes be experienced when the pigs run in alfalfa or clover pasture, so that the trouble cannot be wholly ascribed to the rape. The difficulty is only experienced with comparatively small pigs.

RATION FOR YOUNG BULL.

What is the best ration to feed a year-old registered Shorthorn bull? About how many cows should a bull of that age be allowed to serve? Please give full details regarding the care of one. In your answer to J. B., Peck, Mich., you suggest treating your herd bull for abortion. What do you treat them with and how?

Wexford Co.

SUBSCRIBER.

The ration for a young service bull should not differ materially from that of any young growing animal. Good clover hay, a fair feed of good corn silage will fill the bill for roughage. But we can feed any roughage we happen to have. We feed service bulls about the same ration we do cows, only feed enough to keep in good flesh, and not allow them to get too fat.

Ground oats, wheat bran, a little corn meal and a little oil meal are excellent for grains. Don't over-feed, but keep in good thrifty condition.

Most bulls are not injured by excessive service unless they are allowed to run with the cows. If the bull is kept by himself and allowed only one service there is little danger. At first only one service each day should be allowed. Later on if necessary two services daily may be allowed with very little danger.

In treating a bull to safeguard against contagious abortion the sheath of the bull should be syringed with the disinfectant, also the opening of the sheath and the abdomen near sheath should be washed with disinfectant.

COLON C. LILLIE.

Preventive Treatment for Milk Fever

ONE of the most serious ailments with which the dairyman has to deal is parturient paresis, commonly known as "milk fever." Within the last several years the varied and drastic treatments formerly practiced by veterinarians have been supplanted by the use of oxygen or sterilized air. In the hands of a skilled practitioner this has, in the majority of cases, proven very effectual.

True, the layman may have equally successful results, and frequently does, but there is always danger of complications arising, which the professional will understand and be able to combat as they appear. At all times prevention is the best remedy. It is here that the owner can get in his best work. Of course, the most precautionary measures will not invariably ward off an attack. They will, however, afford the means of decreasing its severity, and in a large percentage of cases totally prevent it.

As a rule, it is the best cow in the herd that is liable to affection. It is more common after the third, fourth or fifth calving, very rarely after the second, and quite unknown after the first. The most generally accepted theory as to the causal factors may be briefly stated: During the late stages of pregnancy the udder is thrown into a state of inactivity. Owing to the development of the calf, the blood of the cow becomes loaded with a large amount of nutritive as well as waste material, and the red blood corpuscles become diminished in size and number. When parturition takes place a large amount of the blood is suddenly conveyed to the udder. This sudden change may cause congestion of that organ and consequent derangement of the secretory cells. This, combined with the effect fluid, always to be found in the udder of mature cows, gives rise to the formation of a poisonous product which produces the characteristic symptoms.

Poor Methods of Treatment.

The fallacious methods that are held and religiously practiced by some farmers with a view to preventing milk fever are almost entirely contrary to natural laws. The idea of putting a cow on short rations and dosing her with purgatives is generally attended with more damage to the animal than any benefit she is likely to derive. By drenching in the ordinary way the medicines are more or less likely to get into the bronchial tubes and lungs setting up inflammation and causing death. Moreover, the weakness generally following such an operation results in a loss of vitality at a critical period, when the demands of maternity require the conservation of strength. Of course, it is desirable that the bowels be relaxed, but there are safer and saner methods by which this condition may be secured. If she is on grass, the necessary laxative is thereby furnished and there will be no further need of attention in that respect; otherwise, give plenty of succulent or juicy feeds, such as silage, roots or an occasional bran mash. Also drop out the concentrates for a week or ten days before and after calving.

Milk Fever Not a Fever.

Another fallacy rigidly adhered to by many is to milk the cow out dry immediately or as soon as practicable, in order to relieve pressure in the udder, which they suppose to be favorable to the trouble. It should be remembered that in milk fever, so-called, there is no fever whatever, the whole system being cold and partially paralyzed. It is essentially a disease of domestication. In the wild state or on the range the cow is surrounded by natural conditions; the modern, heavy-milking bovine has been evolved from these and maintained in her present state by artificial methods. As the act of parturition approaches it is well to go back to nature for the time being. Here there is present no ambitious owner

with a sixteen-quart pail, to see if she will fill it, that he may tell his neighbors what a wonderful cow he has. This first milk, called colostrum, is quite unlike the normal new milk a few days later, and is provided by nature for the calf, which obtains it without completely emptying the udder. If it is thought best to remove the calf directly after birth, imitate it, when drawing off the milk, by leaving some in the udder. A certain amount of pressure is a good stimulant. By milking out thoroughly, pressure is removed, and the udder reduced to a state of collapse. Inactivity thus produced is good ground for the development of chemical or bacterial changes, which may rapidly take place and cause the disease. If conditions similar to those given when the calf is left with the cow were provided, the udder would not be emptied for forty-eight hours. Statistics in hundreds of such cases show that milk fever is practically unknown, or at most is a very light type.

An Emergency Method.

If an animal shows symptoms of the disease, delays are particularly dangerous. Where a veterinarian cannot be summoned immediately, a common bicycle pump may be pressed into service. Have attached to this some rubber hose and a teat tube which have been thoroughly disinfected. The udder should be pumped full of air through all the teats, and each tied with a tape, to prevent its escape. The results realized are: First, arrest of the changes that are going on in the udder; second the red blood corpuscles are compelled to take more oxygen than they voluntarily do in the lungs, thereby increasing the alternative power of the blood; and, third, by pressure on the secreting cells of the udder they are brought to a healthy and vigorous condition.

Canada.

J. H. McKENNEY.

BITTER MILK.

Milk is especially likely to be bitter in the spring, but this trouble may appear at any time. It is almost sure to result from eating the last remaining weeds in closely grazed pastures, bad health of the cow, or the growth of bacteria in milk. The cure in each case consists in finding and removing the cause.

If the milk becomes bitter after standing it is not the cow's fault, but results from the growth of bacteria brought in by particles of dirt or manure or left in improperly cleaned vessels. If the milk of all the cows in the herd is bitter when drawn the feed is probably at fault and the bitter taste will probably disappear if the cows are kept in a lot where they cannot get at weeds. This will give the pastures a better chance to get a good start. If only one or a few of the cows give bitter milk it is probably because they are in bad health or going dry, and their milk should be kept away from the rest so that it will not spoil the whole milking.—Mo. Col. of Ag.

DAIRY NOTES.

Creamery men advise the farmer to sell only rich cream because it is an advantage to all parties concerned. Every bit of skim-milk is needed on the farm as feed for calves, chickens and pigs, and it does harm instead of good if sent to market in the cream. Of course, if the cream is sold by the pint or quart, instead of on a butter-fat basis, the story is somewhat different, but wherever the grading system is in operation, every bit of skim-milk marketed is worse than wasted so far as both buyer and seller are concerned.

Estimates of returns from four herds show that the profits over feed between calving (labor, manure, and calf not included), ranged between \$52.98 and \$96.69 per head for the year.

98% Of the World's Creameries

Separate their cream with a DE LAVAL

TEN YEARS AGO THERE WERE A DOZEN DIFFERENT MAKES of creamery or factory separators in use. Today over 98 per cent of the world's creameries use De Laval Separators exclusively.

IT MEANS A DIFFERENCE OF SEVERAL THOUSAND DOLLARS a year whether a De Laval or some other make of separator is used in a creamery.

EXACTLY THE SAME DIFFERENCES EXIST, ON A SMALLER scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep as accurate records as the creameryman, or test their skim-milk with the Babcock tester, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents.

NOW IF YOU WERE IN NEED OF LEGAL ADVICE, YOU WOULD go to a lawyer. If you were sick you would consult a doctor. If you had the toothache you would call on a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgment and skill.

WHEN IT COMES TO BUYING A SEPARATOR WHY NOT profit by the experience of the creameryman which qualifies him to advise you correctly? He knows which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries and milk dealers use the De Laval exclusively.

THERE CAN BE NO BETTER RECOMMENDATION for the De Laval than the fact that the men who make the separation of milk a business use the De Laval to the practical exclusion of all other makes of cream separators.

Your local De Laval agent will be glad to let you try a De Laval for yourself on your own place. If you don't know the nearest De Laval agent simply write the nearest main office, as below.



THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

APPLETON Silo Filler

Actual records prove that Appleton Silo Fillers cost the least

per ton of silage put up or per year of life. Tremendously strong construction makes an Appleton practically proof against breakdown. Solid oak and steel frame, mortised, braced and bolted; impossible to pull out of line. Many exclusive power and labor saving features, such as independent belt driven blower allowing speed to be adjusted for minimum use of power for any height silo; frictionless feed table running on chilled iron rollers; knives spiraled to give clean shearing cut, requiring least use of power. (10 lengths of cut, 5-16 to 2 1/2 inches.) Lowdown cut-under frame, easy to handle. Both feed rolls and table controlled by single lever. Positive self-working safety device.

Two Books Free: One on silo building and silage crops; the other a complete catalog of Appleton Silo Fillers in four sizes for 4 h. p. gasoline engines and up. Write Appleton Mfg. Co., 420 Fargo Street, Batavia, Ill.



Guaranteed to do more and better work with less power than any other silo filler.

ROSS Silo Fillers Produce the Best Ensilage Guaranteed for Life of Machine

The Ross is not an ordinary fodder cutter but a special made Silo Filler. Exclusive features including Steel Cutting Apparatus and Steel Blower. The Ross Nos. 18-20-24 are for the Threshermen who make a business of filling silos, also for silo users who want a partnership Silo Filler.



Our 66th Year

Buy Early and Save Money

If you intend to buy this year, write quick for special proposition. Delay means advance in price.

THE E. W. ROSS CO., SPRINGFIELD, OHIO

ROSS

B. V. T. SILO

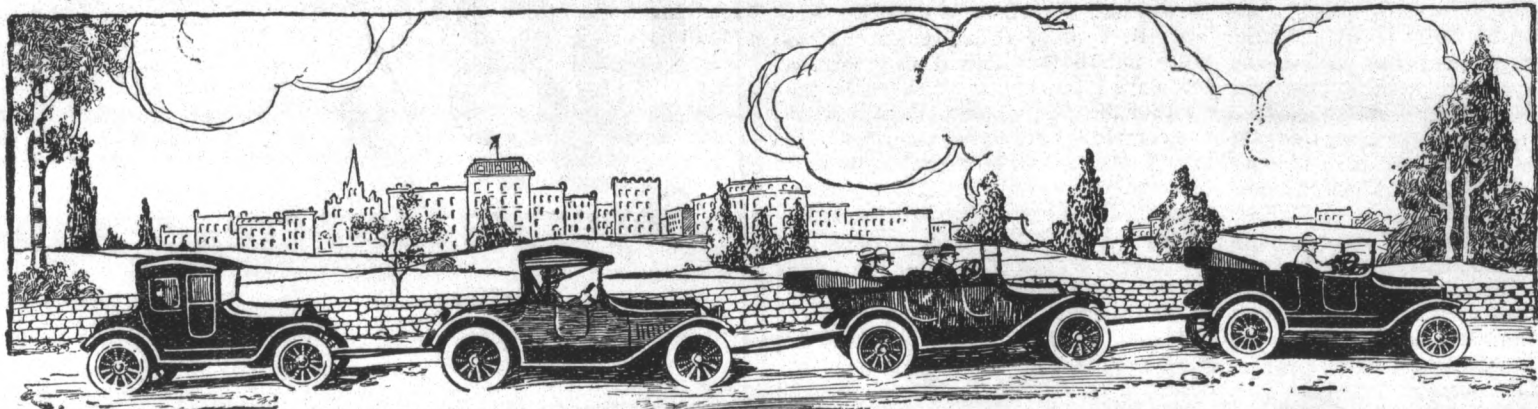
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LEARN AUCTIONEERING at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog. JONES' NAT'L SCHOOL OF AUCTIONEERING, 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

CULL BEANS FOR FEED. Write if you can use a car of less. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

When writing advertisers mention Michigan Farmer



How the Texas Tube test happened!

IT nettled Bill Parr considerably! So many Motorists had carelessly stated that "all Tire Tubes are just Rubber." He determined to show some folks the difference, in a way they would never forget.

There were four Cars at the door, and their Owners or Drivers at his elbow.

To these he said,—

"Boys,—how *strong* do you think this Goodrich Brown Tube *actually* is?"

"Do you believe it is strong enough to tow Mr. Oden's five passenger Car, with four people in it, from here for 20 blocks?"

"You don't, eh?"

"Well now here's a bit of a Bet I want to make with any, or all, of you.

"I will bet you a Dinner that this little old regular Goodrich Tube (34x4) will not only tow Mr. Oden's Car, but will tow *all three of your Cars*,—fully passengered,—through the streets, for the full 21 blocks (more than a mile and a half)—starting and stopping as many times as the crowd makes it necessary.

"I will,—if you Gentlemen are agreeable,—line up all four of your Cars, right here and now, take three regular Goodrich Tubes hap-hazard out of their boxes,—tie one tube between each two Cars, (which means hauling three Cars on the *first* Tube) and tote You-all that way to 'The Corners.'"

"Are you willing to bet a Dinner that any one of the three Tubes will 'go broke' on the way, or show a flaw which would leak Air, or prevent its being used for its original Tire purpose afterwards?"

"You are, eh?"

"Well,—the Bet's on!"

"Come along, and *you* be the Judges."

* * *

THE Dinner was a very Cheerful Affair. As Oden said afterwards (when putting up his share of the Bet) "you could have bet me a Million on that, Parr, and I'd have taken you up,—even if I had to *borrow* the Million.

"I don't see how the blamed Tubes ever *did* hold out,—especially going up Saco St. under such a strain.

"With eight people in the last three Cars,—and a total load of over 8,800 pounds I sure thought to hear *something* snap before second block.

"Whaddye put *into* that brown Goodrich Rubber anyhow, to make it *hang together* like that?"

Fritz said that what puzzled *him* most was the brown Rubber Tubes "not being all *stretched out of shape* after such a tug, even if they *did* hang together at the finish.

"Look you," said he, "when we released the load,—after the Haul,—they instantly snapped back into just three-quarters of an inch longer than they were at the start!"

"And that $\frac{3}{4}$ of an inch, they *took up* again in less than two hours rest."

* * *

"WELL, boys,"—Bill Parr remarked,—as he smoothed out a wrinkle in his well-filled vest, "*that'll* stop the Argument about all Tire Tubes being 'just Rubber,' won't it?"

"If the Brown Stuff that toted all you Heavyweights,—and your Cars,—for 21 Blocks without a Sign of Heavy Duty afterwards, isn't something MORE than 'Just Rubber,' like other Tubes,—then you'd better buy the 'Just Rubber' kind hereafter.

"I'm going to ask *all* of you to sign your names to this 'Texas Tire Tube Test,'—just to show that you have taken part in a *regular* Exploit which is mighty well worth recording."

So indeed they did,—and here is the affidavit!

AFFIDAVIT

This certifies that we, the undersigned, took part in and witnessed, the Texas tube test referred to in the advertisement entitled "How the Texas Tube Test Happened!"—that the test was made on date of Nov. 11, at Waco, Texas, the distance covered being twenty-one blocks and that the result was as described.

Signed— W. M. ODEN
J. M. NASH
B. A. FRITZ
W. A. PARR

Subscribed and sworn to before me by W. M. Oden, J. M. Nash, B. A. Fritz and W. A. Parr, this the 3rd day of May, A. D. 1916, at Waco, Texas.

Signed— J. G. WREN,
Notary Public,
McLennon County, Texas.

Now what *think* You of these GOODRICH Tire Tubes that could *bear up* under such a gruelling test? Reflect that they *cost* you no more than the "*ordinary*" Tubes you so carelessly accept!

GOODRICH

"Texas—
—Test"

INNER-TUBES

TIRES

Magazine Section

LITERATURE
POETRY
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INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY
JOURNAL
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

IF a bit of broken pottery from Pompei, or a translation from the obelisks of Egypt are interesting and instructive, how much more so for us must be a few pages from the lives of those splendid pioneers, who put Michigan on the map and made her one of the favored states of our nation. They were stalwart men and women who endured privations, inhaled the effluvia of undrained swamps, were bitten by mosquitos and shaken by ague.

Among the rugged pioneers of Michigan, whose memory should be perpet-

Rix Robinson, Pioneer

By MARY L. DANN

uated, is Rix Robinson, who settled on Grand River, in the territory of Michigan, about ninety-three years ago, and through whose efforts the Indians of Michigan sold their lands north of Grand River to the government for a fair compensation, so that the early leaves of Michigan history are not blotted with blood, like those of Ohio,

Indiana and Kentucky—the man who, for love, declined the highest office within the gift of the people of his state.

Rix Robinson was born in Richmond, Mass., August 28, 1789. His father was a blacksmith and Rix was the third of thirteen children. In 1870, the family moved to Cayuga county, New York.

At the age of nineteen he began the study of law and was admitted to the bar in 1812, but before he began to practice, the war of 1812 broke out. His father opposed the war as unnecessary and suicidal. Rix Robinson was drafted, but when the officers came to pick him up, he was not to be found. Process was issued against him for the penalty for non-appearance to do military duty, but could not be served because of his continued absence from the state.

When Mr. Robinson left New York

WORLD EVENTS IN PICTURES



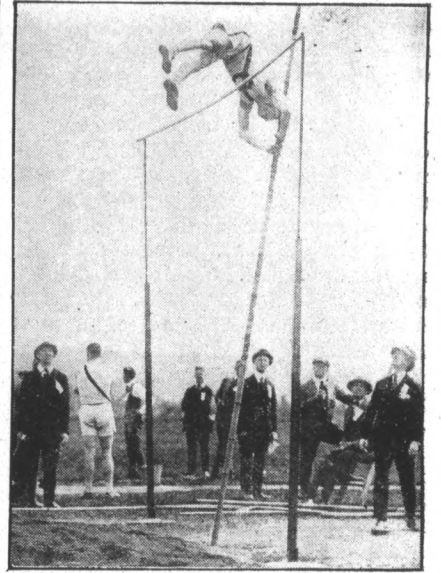
Mr. Topping Wins Ardsley Tournament.



White Serge Suit for the Summer Girl.



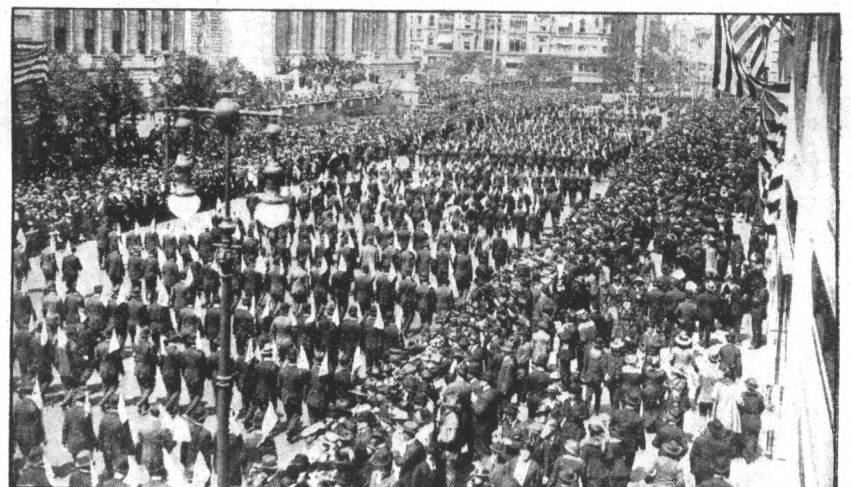
American Involved in the Irish Rebellion.



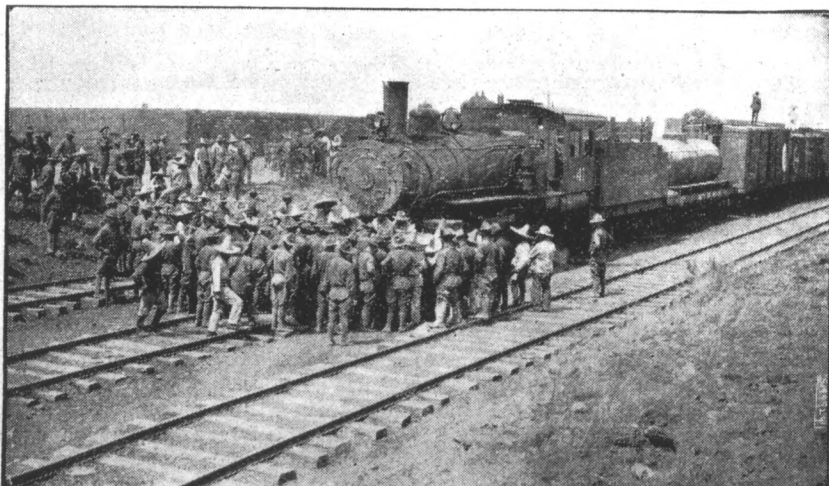
Cornell's Star Pole Vaulter Goes Over Twelve Feet.



Soldiers Outside their Dugout During a Lull in the Battle of Verdun.



150,000 March in the Great Preparedness Parade held in New York City.



Train with Carranza Soldiers Aboard Stalled near Camp of American Troops.



Sackville Street, Dublin, Showing Ruins from the Recent Irish Revolt.

Copyright by Underwood, & Underwood N. Y.

he went to Wisconsin and entered into partnership with a man named Phelps in the buying of furs. He continued the business until he earned sufficient money to pay up his indebtedness, including the amount he owed as a penalty for refusing to do military duty.

At about this time it occurred to the mind of John Jacob Astor that Rix Robinson, who was large, powerful, of fine presence and acquainted with Indian habits, language and trading, might hold one of his trading posts, from which his trader had been driven each year by the Hudson Bay Fur Company. Robinson held it, although the same course was pursued toward him as toward his predecessors. The chief of the principal tribe of Indians would pass his door, brandishing his tomahawk and flourishing a bundle of furs, which he would take over and sell to the Hudson Bay Company. One evening this Indian chief, accompanied by several of his tribe, entered Robinson's shanty. The chief seated himself on a three-legged stool and inquired if Robinson had any whiskey, and on being told that he had, demanded that he be given some. Robinson refused. The Indian seized his stool and threw it with great violence against the door, behind which was the whiskey, breaking it in. He started toward it, declaring he would help himself. Robinson struck him and he fell senseless into the fireplace, in which was a good fire. He dragged the bruised and burned Indian to the door and threw him out, ordering his followers to take him away. After this Robinson was warned not to go in the woods hunting or the Indians would kill him. He continued to hunt as usual, and the fifth day after this incident, he sat by the fire priming his rifle, when the Indian chief appeared in the doorway. Robinson straightened himself and inquired: "Want to fight?" "No, I do not," the chief replied. "Made fool of myself the other day, want to make all up with you." Robinson handed him pipe and tobacco and they sat down and smoked. From that day the chief and his tribe were fast friends of Robinson and the Hudson Bay Company got no more furs.

Mr. Robinson often said that he had learned two things in dealing with Indians. The first was never to take an insult from an Indian without chastising him, and never to show fear of an Indian, no matter how many his followers.

A few years later Mr. Robinson was taken into partnership with Mr. Astor, of the American Fur Company, and took the management of the trading posts at Ada and Grand Haven. He had become so completely weaned from civilized life that he had no desire to return to it. He married Flying-Cloud-Woman, the daughter of the principal chief of the Pere Marquette Indians, in 1821. The marriage was solemnized in accordance with the strange Indian ceremonies and customs. To them one child was born, Reverend John Robinson, missionary among the Ottawa and Chippewa Indians of our state.

Flying-Cloud-Woman died, and he then married, this time in the white man's way, another Indian woman, who had been educated in the mission at Mackinac. Her name was River-Woman, and they were married by Rev. Slater, a Baptist missionary.

Mr. Robinson, because of his firmness and fairness, his knowledge of the Indian language, character, traditions and laws, his truthfulness and his taking an Indian wife, was very influential among the Indians of the state. Nevertheless, he sometimes had disagreeable encounters with them. An Indian at the Grand Haven Post, who had been chastised by Robinson, secreted a knife in his garment and was about to stab him, when Robinson threw him into the river and held him under water until he was unconscious. He drew him up on the bank and left him for the squaws to resuscitate. Some months later the same Indian

came back and asked Mr. Robinson's pardon, entered his employ and for many years was his most trusted man.

He was one of the men who pre-empted the land, platted it and named it Grand Haven. He threw his energies into turning emigration toward western Michigan, and introduced his six brothers, with their families, numbering forty persons, to come from New York to Michigan, where they became large farmers at points along the Grand and Flat rivers.

Mr. Robinson was largely instrumental in the making of the Treaty of Washington with the Indians, by which more than half the area of the lower peninsula was ceded by the Indians to the general government and compensation paid. The Indian chiefs of the different tribes were required to go to Washington, but declined to go without Mr. Robinson. He took them in charge and they filled two stage coaches. One day Mr. Robinson ordered dinner for his chiefs at a tavern. Just as the dinner was served, the coaches drew up and they were all ordered to get in, the landlord declaring they were all mail coaches and could not be delayed. The Indians had no dinner, but the landlord required Robinson to pay fifty cents apiece for them, saying that was his price and he was not to blame because the coaches would not wait. Mr. Robinson made no protest, but on the return trip he would not allow his chiefs to have anything to eat for an entire day before arriving at the tavern where they had been outwitted before. When they complained of hunger, he ordered them to tighten their belts. Arrived at the tavern, he ordered a good dinner and it was placed before them. "Loosen your belts," Robinson commanded. They did and began to eat. They ordered more and the waiters brought it. The landlord rushed to the door, but no coaches appeared. The Indians called for more food, and everything eatable, including cold meats prepared for supper, were brought in and disappeared. Famine faced the household. Robinson threw down fifty cents apiece for the chiefs. "That will not pay for the raw material," the landlord stormed. "I can't help that. You have set your own

price," Mr. Robinson declared. "You shall not go until you pay my charges," shouted the landlord. Mr. Robinson, with a twinkle in his eye, gravely said, "At a signal from me, you and every one of your helpers would be killed inside of ten minutes. It would not be well to attempt to keep us." The coaches appeared at a signal from Robinson and they all clambered in. The secret of it was, Dr. Robinson had paid the drivers more to delay the coaches than the landlord had given them to hurry on.

Mr. Robinson drove Sim Johnson, one of Buchanan's political friends, away from Grand Rapids, by kicking him through the streets of one of the busiest parts of the city at midday. This he did because Johnson would not return two thousand silver dollars lent him to enable his wildcat bank to make a good showing to the banking commissioner.

Of cultivated taste, pleasant social ways and excellent habits, Mr. Robinson always associated with men of high standing. He was always neatly dressed and attracted attention on the streets by his imposing stature and splendid bearing.

He was state road commissioner, commissioner of internal improvements for the state of Michigan; senator from the fifth and seventh districts; associate justice of the circuit court of Kent county, and member of the convention which formed our state constitution in 1850. It was within his power to be governor of Michigan, but he declined to allow his name to be used because of the fact that his wife was an Indian, and would be unable and unwilling to perform the social duties that would be required of her. He had the tenderest affection for his Indian helpmeet and would not think of accepting any office which might submit her to humiliation.

His intellect remained clear up to the day of his death which occurred January 13, 1875. Without even a monument to mark his last resting place, he sleeps on the hillside near Ada, where the river he so dearly loved ripples by, and where so many years of his busy, useful life were spent.

WHEN THE WIND'S IN THE PINES.

BY M. P. EARL.

They's pine trees all around our house,
Guess you know what they are,
The branches reach clear 'cross the roof,
An' the tops stick way up far,
They's 'bout the loneliest, saddest trees

They is, fer little boys,
'Cause no matter what the weather is
They allus makes a noise.
An' when the wind gits in 'em—
My, how it screeches 'bout,
An' I stuff my fingers in my ears
To keep the sound all out,
But it don't do any good, fer I guess
It's bound to make me feel,
'Cause it jist howls an' howls, 'till I shiver,

An' nen it'll sort of squeal.
I don't know whether it's the wind
Or pine trees 'ats to blame,
But it don't make any difference,
I think it's jist a shame
Fer anything to make a noise,
When everyone's abed,
'At makes me think of goblins,
An' ghosts an' folks 'ats dead,
An' all the bad things 'at I've done,
When right across the hall,
My pa an' ma is sound asleep,
An' me jist 'bout to squall.

But then, sometimes, the wind jist makes
A certain kind of moan,
'At makes me think of little boys
What ain't got any home,
So I'm glad I have, an' the covers
Is big an' warm an' deep,
An' I cover up my head real quick
An' nen I'm fast asleep.

~~~~~  
sages from Washington requesting and advising Stewart's exchange as a prisoner of war, to offer to buy his release from the rebel authorities.

When Stillwell had heard her through his bowed form straightened and a ghost of his old smile just moved his lips. He was no longer young, and hope could not at once drive away stern and grim realities. As he bent over her hand his manner appeared courtly and reverent; but he seemed to feel that the moment was not one for him to break silence.

He climbed to a seat beside Link, who pocketed the watch he had been studying, and leaned over the wheel. There was a crack, then a muffled sound bursting into a roar, and the big car jerked forward to bound over the edge of the slope, to leap down the long incline, to shoot out upon the level floor, and to disappear in moving dust.

~~~~~  
For the first time in days, Madeline visited the gardens, the corrals, the lakes, the quarters of the cowboys. Though imagining she was calm, she feared she looked strange to Nels, to Nick, to Frankie Slade, to the boys best known to her. They seemed to be trying to say something to her, but they found themselves spellbound.

~~~~~  
She wondered if they knew that she was Stewart's wife. No, Stillwell had not had time to tell them; besides, he would not have mentioned the fact. These cowboys only knew that Stewart was sentenced to be shot; they knew that if Madeline had not discharged him he would not have gone in desperate fighting mood across the border.

~~~~~  
She spoke of the weather, of the horses and cattle; she asked Nels when he was to go on duty; and turned away from the wide, sunlit porch where the cowboys stood silent and bareheaded. Then one of her subtle impulses checked her.

~~~~~  
"Nels, you and Nick need not go on duty today," she said. "I may want you. I—I—"

~~~~~  
She hesitated, paused, and stood lingering there. Her glance had fallen upon Stewart's horse prancing in a near-by corral.

~~~~~  
"I have sent Stillwell to El Paso," she went on. "He will save Stewart. I have to tell you—I am Stewart's wife!"

~~~~~  
She felt the stricken amaze that made these men silent and immovable. With level gaze averted she left them and returned to her room.

~~~~~  
The local newspapers, which came regularly a day late from El Paso and Douglas, had never won any particular interest from Madeline; now, however,

## Light of Western Stars

By ZANE GREY

~~~~~  
In that moment, throbbing, exalted, quivering in her first sweet, tumultuous surrender to love, she would have given her all, her life, to be in his arms again, to meet his lips with hers, to thought of wild self-sacrifice!

~~~~~  
On the morning of the next day, when Madeline went out upon the porch, Stillwell, haggard and stern, with a husky, incoherent word, handed her a message from El Cajon. She read:

~~~~~  
El Capitan Stewart captured by rebel soldiers in fight at Agua Prieta yesterday. He was a sharpshooter in the Federal ranks. Sentenced to death at Thursday at sunset.

~~~~~  
"Stillwell!"

~~~~~  
Madeline's cry was more than the utterance of a breaking heart. It was full of agony. It voiced the shattering of a structure built of false pride, of old beliefs, of ignorance of self.

~~~~~  
The old cattleman stood mute before her, staring at her white face, at her eyes of flame.

~~~~~  
"Stillwell! I am Stewart's wife!"

~~~~~  
"Heavens, Miss Majesty!" he burst out. "I knowed somethin' terrible was wrong. Aw, sure it's a pity—"

~~~~~  
"Do you think I'll let him be shot when I know him now—when I'm no longer blind—when I love him?" she asked with passionate swiftiness. "I will save him! This is Wednesday morning. I have thirty-six hours to save his life. Stillwell, send for Link and the car!"

~~~~~  
She went into her office. Her mind worked with extraordinary rapidity

~~~~~  
and clearness. Her plan, born in one lightning-like flash of thought, necessitated the careful wording of telegrams to Washington, to New York, to San Antonio. These were to Senators, Representatives, men high in public and private life, men who would remember her and who would serve her.

~~~~~  
Never before had her position meant anything to her in comparison with what it meant now. Never in all her life had money seemed the power that it was then. She would use every means that it placed at her command—the wires and pulleys underneath the surface of political and international life—the open purchasing value of money, or the deep, underground, mysterious influences moved by gold.

~~~~~  
She could save Stewart. She must await results—deadlocked in feeling, strained almost beyond endurance, because the suspense would be terrible; but she would allow no possibility of failure to enter her mind.

~~~~~  
When she went outside the car was there, with Link, helmet in hand, a bright gleam in his eyes.

~~~~~  
"Link, drive Stillwell to El Cajon in time for him to catch the El Paso train," she said. "Wait there for his return; and if any message comes from him telephone it to me at once."

~~~~~  
Then she gave Stillwell the telegrams to send from El Cajon and drafts to cash in El Paso. She instructed him to go before the rebel junta, then stationed at Juarez, to explain the situation, to bid them expect mes-



she took up such copies as could find and read all the information pertaining to the revolution. Every word seemed vital to her, of moving significant force:

#### AMERICANS ROBBED BY MEXICAN REBELS.

Madera, Mexico, July 17.—Having looted the Madera Lumber Company's storehouses of twenty-five thousand dollars' worth of goods, and robbed scores of foreigners of horses and saddles, the rebel command of General Antonio Rojas, comprising a thousand men, started westward today through the state of Sonora for Aguaymas and Pacific coast points.

The troops are headed for Dolores, where a mountain pass leads into Sonora. Their entrance will be opposed by a thousand Maderista volunteers, who are reported to be awaiting the rebel invasion.

Friction between Americans and foreigners has been at the bursting-point for several days. Horses and supplies were commandeered by the rebels. When they were ordered returned by General Rojas, the rebel soldiers protested that they needed mounts, and five hundred of them will have to travel afoot unless horses can be procured on the way.

General Emilio Campa, who was imprisoned by Rojas, was released today and started westward with three hundred followers.

The railroad south of Madera is being destroyed, and many Americans who were traveling to Chihuahua from Jaurez, are marooned here.

General Rojas, while here, executed five men for alleged offenses of a trivial character. General Rosalio y Hernandez, Lieutenant Cipriano Amado, and three soldiers were the unfortunates.

Washington, July 17.—Extreme agitation exists among the American and other foreign citizens along the line of the Mexican Northwestern Railroad as a result of the retreat of the insurgent army in that direction.

Somewhere in Mexico Patrick Dunn, an American citizen, is in prison under sentence of death. This much and no more the State Department learned through Representative Kinkaid, of Nebraska. Consular officers in various sections of Mexico have been directed to make every effort to locate Dunn and save his life.

Mexico City, July 31.—The Mexican government has taken adequate steps to protect American lives and property on the border along the State of Chihuahua by despatching an army of several thousand men to the scene of the trouble. Such is the substance of a reply transmitted to Ambassador Calero at Washington by Foreign Minister Lascorain.

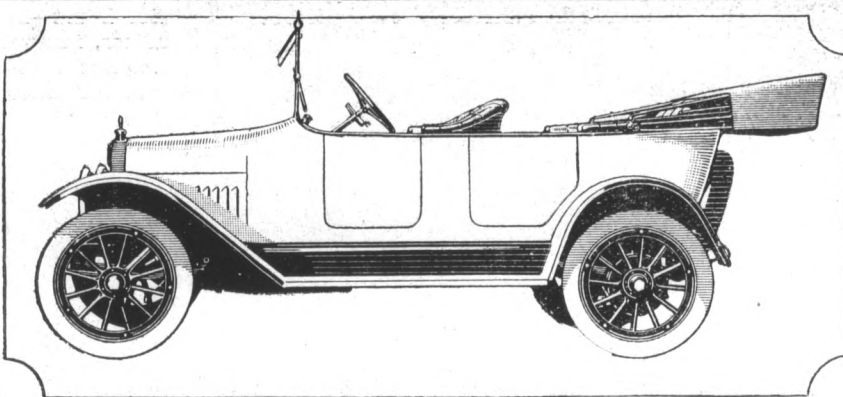
Las Vegas, Sonora, July 25 (by courier to Douglas, Arizona).—Hardships like those suffered by the army of Napoleon in crossing the Alps has been endured by the Federal column of General Sanjines, which has crossed the Sierra Madres and is now within fifty miles of Casas Grandes, the rebel capital of Sonora.

Madeline read on in feverish absorption.

It was not a real war, but a starving, robbing, burning, hopeless revolution. Five men executed for alleged offenses of a trivial nature! What chance, then, had a Federal prisoner, an enemy to be feared, an American cowboy in the clutches of those crazed rebels?

Madeline endured patiently, endured for long, interminable hours while holding to her hope with indomitable will.

No message came. At sunset she went outdoors, suffering a torment of accumulating suspense. She faced the desert, hoping, praying for strength. The desert did not influence her as did the passionless, unchangeable stars that had soothed her spirit. It was red, immutable, shrouded in shadows, terrible like her mood. A dust-veiled sunset colored the vast, brooding, naked waste of rock and sand. The grim



The World's Champion Endurance Car

## Unity

IT may have come to your notice that The Maxwell Motor Company does not base its entire advertising appeal upon the speed of a motor or the foreign lines of a body, or genuine leather upholstery, or the social distinction of its patrons—to the exclusion of every other feature of the Maxwell Car.

It is the Maxwell policy that no essential unit of the Maxwell shall dominate Maxwell Character as embodied in the car and expressed in Maxwell advertising.

The motor, the chassis, the frame, the axles, the spring suspension, the electrical equipment—all the factors in Maxwell Character—have been designed and manufactured for a single fundamental purpose—to create a harmonious and efficient unity.

All the essential Maxwell parts are designed by us and manufactured by us to contribute their full share to the achievement of the maximum comfort, convenience, safety, service and economy.

There is no one important or conspicuous feature of the Maxwell; it is just the Maxwell Motor Car—designed, manufactured, sold and kept running by the Maxwell Motor Company.

**Brief Specifications**—Four cylinder motor; cone clutch running in oil; unit transmission (3 speeds) bolted to engine.  $\frac{3}{4}$  floating rear axle; left-hand steering, center control; 56" tread, 103" wheelbase; 30 x 3 $\frac{1}{2}$ " tires; weight 1,960 pounds. **Equipment**—Electric Head-lights (with dimmer) and tail-light; storage battery; electric horn; one-man mohair top with envelope and quick-adjustable storm curtains; clear vision, double-ventilating windshield; speedometer; spare tire carrier; demountable rims; pump, jack, wrenches and tools. **Service**—16 complete service stations, 54 district branches, over 2,500 dealers and agents—so arranged and organized that service can be secured anywhere within 12 hours. **Prices**—2-Passenger Roadster, \$635; 5-Passenger Touring Car, \$655. Three other body styles.

# Maxwell

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**MEAD CYCLE CO., Dept. D-77 CHICAGO, ILL.**

Chiricahuas frowned black and sinister. The dim blue domes of the Guadalupe seemed to whisper, to beckon to her. Beyond them somewhere was Stewart, awaiting the end of a few brief hours—hours that to her were endless, insupportable.

Night fell; but now the white, pitiless stars failed her. Then she sought the seclusion and darkness of her room, there to lie with wide eyes, waiting, waiting. She had always been susceptible to the somber unrealities of the night, and now her mind slowly revolved round a vague and monstrous gloom. Nevertheless, she was acutely sensitive to outside impressions. She heard the measured tread of a guard, the rustle of wind stirring the window-curtain, the mournful wail of a coyote.

By and by the dead silence of the night surrounded her with leaden oppression. There was silent darkness for so long that when the window casements showed gray Madeline believed that it was only fancy and that dawn would never come. She prayed for the sun not to rise, not to begin its short twelve-hour journey toward what might be a fatal setting for Stewart. But the dawn did lighten—swiftly, she thought, remorselessly. Daylight had broken—and this was Thursday!

Sharp ringing of the telephone-bell startled her, roused her into action. She ran to answer the call.

"Hello! Hello, Miss Majesty!" came the hurried reply. "This is Link talking. Messages for you. Favorable, the operator said. I'm to ride out with them. I'll come a hummin'!"

That was all. Madeline heard the bang of the receiver as Stevens threw it down. She passionately wanted to know more but was immeasurably grateful for so much.

Favorable! Then Stillwell had been successful. Her heart leaped. Suddenly she became weak and her hands failed of their accustomed morning deftness. It took her what seemed a thousand years to dress. Breakfast meant nothing to her except that it helped her to pass the dragging minutes.

Finally a low hum, mounting swiftly to a roar and ending with a sharp report, announced the arrival of the car. If her feet had kept pace with her heart she would have raced out to meet Link. She saw him, helmet thrown back, watch in hand. He looked up at her with his cool, bright smile, with his familiar apologetic manner.

"Fifty-three minutes, Miss Majesty!" he said. "I had to ride round a herd of steers an' bump a couple off the trail."

He gave her a packet of telegrams. Madeline tore them open with shaking fingers and began to read with dim eyes. Some were from Washington, assuring her of every possible service; some were from New York; others, written in Spanish, were from El Paso; and these she could not wholly translate in a brief glance.

Would she never find Stillwell's message? It was the last.

It read:

Bought Stewart's release. Also arranged for his transfer as prisoner of war. Both matters official. He's safe if we can get notice to his captors. Not sure I've reached them by wire. Afraid to trust it. You go with Link to Agua Prieta. Take the messages sent you in Spanish. They will protect you and secure Stewart's freedom. Take Nels with you. Stop for nothing. Tell Link all—trust him—let him drive that car.—Stillwell.

The first few lines of Stillwell's message lifted Madeline to the heights of thanksgiving and happiness. Then, reading on, she experienced a numb, icy, sickening pang. At the last line she flung off doubt and dread and faced the issue in white, cold passion.

"Read!" she said briefly, handing the telegram to Link. He scanned it and then looked blankly up at her. "Link, do you know the trails between here and Agua Prieta?" she asked.

"That's sure my old stampin'-ground! An' I know Sonora, too."

"We must reach Agua Prieta before

## JUNE.

BY J. A. KAISER.

'Tis June; 'tis June: the roses bud once more  
And bloom and shed their sweetness o'er the world;  
And lovers stroll as in the days of yore,  
Through lanes where nature's splendors are unfurled.

'Tis evening, and 'tis June: the robin sings  
His farewell carol to the closing day.  
The lark, holding above on joyful wings,  
Trills out in silver notes, his evening lay.

And red, and pink, and white, the roses blow;  
And where some nook the lengthening shadows fold,  
Two hearts a new and thrilling rapture know,  
And love's sweet story o'er again is told.

For June is June, forever fresh and young,  
Forever fair and winsome to behold;  
And love, the thickets and the birds among,  
Is whispering o'er again the story old.

sunset—long before, so if Stewart is in some near-by camp we can get to it in—in time."

"Miss Majesty, it ain't possible!" he exclaimed. "Stillwell's crazy to say that."

"Link, can an automobile be driven from here into northern Mexico?"

"Sure; but it'd take time."

"We must do it in little time," she said eagerly. "Otherwise Stewart may be—probably will be—shot!"

Link Stevens appeared suddenly to grow lax and shriveled, to lose all his peculiar brightness, to weaken and age.

"I'm only a—cowboy, Miss Majesty." He almost faltered. "That's an awful ride down over the border. If by some luck I didn't smash the car, I'd turn your hair gray. You'd never be no good after that ride!"

Madeline's words flowed in a torrent.

"I am Stewart's wife—I love him—I have been unjust to him—I must save him! Link, I have faith in you. I beseech you to do your best for Stewart's sake—for my sake. I'll risk the ride gladly—bravely. I'll not care where or how you drive. I'd far rather plunge into a canon—go to my death on the rocks—than not try to save Stewart!"

"Miss Majesty, that ride figgers impossible, but I'll do it!" Link replied as the old spirit returned to his eyes. "I'll need mebbe half an hour to go over the car an' to pack on what I'll want."

She could not thank him. Her reply was merely a request that he would tell Nels and other cowboys off duty to come up to the house.

When Link had gone Madeline gave a moment's thought to preparations for the ride. She placed what money she had and the telegrams in a satchel. The gown she had on was thin and white, not suitable for travel, but she would not risk the losing of one moment in changing it. She put on a long coat and wound veils round her head and neck, arranging them in a hood, so that she could cover her face when necessary. She remembered to take an extra pair of goggles for Nels's use, and then, drawing on her gloves, she went out, ready for the ride.

Several cowboys were waiting. She explained the situation and left them in charge of her home. With that she asked Nels to accompany her down into the desert. He turned white to the lips, and Madeline remembered his mortal dread of the car and Link's driving.

"Nels, I'm sorry to ask you," she added. "I know you hate the car. But I need you—may need you, oh, so much."

"Why, Miss Majesty, that's shore all a mistaken idee of yours about me hatin' the car," he said in his slow, soft drawl. "I was only jealous of



Link— an' the boys, they made thet joke up on me about bein' scared of ridin' fast. Shore I'm powerful proud to go. I reckon if you hedn't asked me my feelin's might hev been some hurt; because, if you're goin' down among the greasers, you want me."

His cool, easy speech, his familiar swagger, the smile with which he regarded her, did not in the least deceive Madeline. His face was still white. Incomprehensible as it seemed, Nels had a dread, an uncanny fear of that huge white automobile; but he lied about it in his eagerness to serve Madeline.

She heard the buzz of the car. Link appeared, driving up the slope. He made a short, sliding turn and stopped before the porch. He had tied two long, heavy planks upon the car, one on each side, and in every available space he had strapped extra tires. A huge cask occupied one back seat, and another seat was full of tools and ropes. There was just room in this rear part of the car for Nels.

Link put Madeline in front beside him, then bent over the wheel. Madeline waved her hand to the silent cowboys on the porch. Not an audible good-bye was spoken.

The car glided out of the yard, bounced from level to slope, and started swiftly down the road, out into the open valley. Each stronger rush of dry wind in Madeline's face marked the increase of its speed. She took one lone glance at the winding cattle-road, smooth, unobstructed, disappearing in the gray distance. She took another at the leather-garbed, leather-helmeted driver beside her; and then she drew the hood of veils over her face and fastened it round her neck so that there was no possibility of its blowing loose.

Harder and stronger pressed the wind till it was like sheeted lead forcing her back in her seat. There was a ceaseless, intense, inconceivably rapid vibration under her; occasionally she felt a long swing, as if she were to be propelled aloft; but no jars disturbed the easy celerity of the car.

To Madeline the time seemed to fly with the speed of miles. A moment came when she detected a faint difference in the rush and vibration, in the ceaseless sweeping of the invisible weight against her. This difference became marked. Link was reducing the speed of the car, and soon she realized that the car had slowed to normal travel.

Madeline removed her hood and goggles. It was a relief to breathe freely, to be able to use her eyes. To her right, not far distant, lay the little town of Chiricahua. The sight of it made her remember Stewart in a way strange to her constant thought of him.

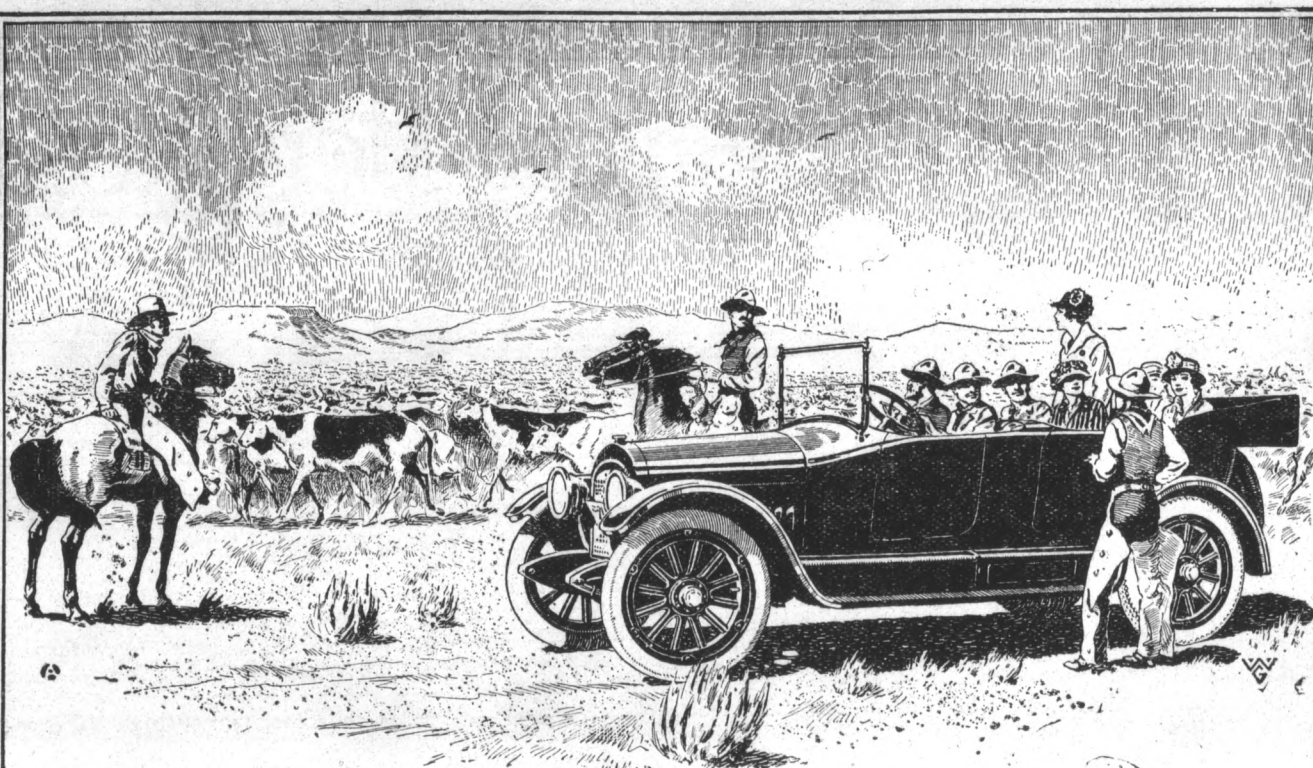
Opposite Chiricahua, where the road forked, Link Stevens headed the car straight south and gradually increased speed. Madeline faced another endless gray incline. It was the San Bernardino Valley. The singing of the car, the stinging of the wind, warned her to draw the hood securely down over her face again, and then it was as if she were riding at night.

Again the moments went by fleet as the miles. Seemingly there was an acceleration of the car till it reached a certain swiftness—a period of time in which it held that pace—and then a gradual diminishing of motion and sound. Uncovering her face she saw that Link was passing another village. Could it be Bernardino? She asked him, and repeated the question.

"Sure!" he replied. "Eighty miles!"

Link did not this time apologize for the work of his machine. Madeline marked the omission with her first thrill of the ride. Leaning over, she glanced at Link's watch, which he had fastened upon the wheel in front of his eyes. A quarter to ten! Link had indeed made short work of the valley miles.

(Continued next week.)



# KING EIGHT CYLINDER

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**W**HY the eight cylinder motor gives the quickest acceleration, practically eliminates gear-shifting, takes all but the steepest hills on "high", banishes vibration, develops great power and speed at small fuel expense, and adds years to the car's life, is explained in the words—**CONSTANT POWER.**

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Oats averaged in 1915 over 45 bushels per acre  
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Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

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# Woman and Her Needs

## At Home and Elsewhere



### The Outside of the Platter

**S**HE is the best neighbor I ever had, and her front porch and parlor are spotless. But my goodness! If you could see the kitchen and cellar! On my honor, that kitchen floor is only scrubbed once a month, and then it's just mopped with lukewarm water, and the basement is so full of old junk and ashes you can't wade through—

The rest of the details were lost as the two ladies left the car, but it set me to thinking of a condition which exists in all too many homes. Too many housekeepers are like the people of old who "made clean the outside of the platter, but within,"—enough said.

It has been said that every housekeeper is slack somewhere, and even the neatest of us must admit it as the truth. If we confess our faults we must admit there is some corner of our abode that would not stand the most rigid search. If it isn't the kitchen it's the pantry or the closet under the stairs, or the dark corners of the cellar, or perhaps the bed-rooms, where we make the beds before we go out to get breakfast and never open a window from October 1 to May 1. There always seems more to do than one pair of hands can find the time to do, and something gets slighted in the best regulated households.

But if we must slight, why slight the things upon which good health depends? And on what does health depend more than upon a clean cellar and clean cookery? A dirty cellar poisons the air of the whole house and it should be spotless and well-aired, if the parlor goes undusted for a week. No rubbish should be allowed to collect below the floor, and decaying fruit and vegetables should be instantly removed as a menace to health. Windows should be screened and opened except in freezing weather, so that the air which comes up from below stairs into our living-rooms is always pure and sweet.

And the kitchen where our food is cooked and our lives really made, how necessary that it should be spotless. For life in all its phases depends upon health and health depends upon pure food and pure air. Air more than anything else. Every housekeeper can have a clean kitchen even if she can not have the latest labor-saving appliances, for soap and hot water can always be secured, and "elbow grease" will do the rest. Yet it is astonishing how slack many women, who pride themselves upon being good housekeepers, are about their workshop. Even so simple a thing as securing clean dishes seems to be beyond them. Everything is tumbled into the pan together, greasy plates with glassware, and all put through the one pan of water, no matter how cold it becomes nor how much refuse swims on the top. It really doesn't take any longer to scrape each dish and arrange in piles, then start with glassware and fine china, silver and dinner plates, and follow with pots and pans, changing the water when the first gets cold or greasy, than it does to stack everything up helter skelter and grab whichever is nearest, be it cut glass bowl or greasy spider. And the satisfaction of having shiny dishes more than repays for the effort it may seem to be to do it right.

The tables and floor can be kept clean, too, with but little extra effort.

It isn't necessary to get down on one's knees and scrub the floor in order to keep clean. Good hot water and a good soap powder, with a ten cent mop, will make the floor white, provided always, that you are not afraid to throw out the water when it begins to get dirty and get a pail of fresh, clean hot suds. A clean floor, clean stove and clean dishes will lead to clean cupboards and clean corners, and clean food is thus assured.

Beds, too, should never be made immediately upon arising. They should be opened up, all bedding removed, the windows opened and bed and room allowed to air at least two hours each morning. Sanitation and health demand these precautions. And yet hundreds of women who can tell you all about the cause and cure of tuberculosis never air their beds or bed-rooms except at spring and fall housecleaning times.

I do not know whether it was Shakespeare, Bacon or a Biblical writer who first said, "Cleanliness is next to godliness," but whoever the authority the wisdom of the remark has never been questioned. Personally I should put cleanliness first, for in my humble opinion godliness can not exist without cleanliness of body, mind and soul.

DEBORAH.

### PLEASING GIFTS FOR THE JUNE GRADUATES.

BY EMMA GARY WALLACE.

Graduation is a momentous occasion for the student either from secondary schools or higher institutions of learning. Graduation marks the satisfactory completion of a long period of study, and the custom of recognizing the climax of effort is not without merit. Those who have lagged, as well as those who have been earnest and conscientious are encouraged to go forward to finer effort, knowing that friendly eyes are bent upon them. One of the advantages of the smaller place over the city, is that young people know that a large circle of the community is interested in them and so are inclined to live up to their best.

The girl graduate is not difficult to provide for, because she has a multitude of feminine wants to be filled at this particular time in her life. Those who choose to remember her now will do well to give something of more than temporary value if their degree of intimacy so warrants, as graduation gifts may be a life-long souvenir of a pleasant occasion. There are many for whom the gift of flowers is entirely appropriate, however, and flowers and graduation always seem to go together.

Among the things which will be appreciated will be articles of personal adornment. Often admiring friends and relatives wish to mark the occasion with something like a ring, a wrist watch, or a slended neck chain and ornament, while other members of the family will bring a dainty carved ivory fan, a cobwebby, lace handkerchief, a gauzy scarf, a fountain pen or other desk accessory, a party bag, or if a journey is meditated, special toilet articles or a compact traveling case or linen holder for necessary articles.

The gift made to the girl graduate need not be expensive in order to be charming. Perhaps several of her friends will club together and fit out a

work basket, one giving the basket and others the scissors, thimble, thimble case, needle case, emery, measuring gauge, etc.

The girl graduate's room is always a center of interest for her and so she will enjoy gifts for this. It may be a dainty pair of candles, or candle shades, a charming picture, a cover for her dresser, a hanger for her graduation gown, or some little, hand-made article for personal wear. A good book which will be a friend throughout the years to come, is never to be overlooked.

Often by this time thoughts of romance may fill our girl graduate's mind and not a few of them will have started a "Hope Chest." Little additions for this, such as an initialed piece of linen, a silver spoon or a souvenir of travel, will find a welcome place.

With boys the task of selection becomes more difficult. For the youth there will be certain needs his family will be sure to meet. They will see that he has a watch, a simple fob, cuff



A Charming Evening Gown for the Miss.

links, scarf pin, and possibly some addition to the electrical equipment which may be his hobby. Outside friends will not overlook the fact that he will be delighted with a camera, pennants for his room, comfortable, usable cushions for his couch bed, a camping outfit, or the many books he longs to possess for his very own.

His older brother who is leaving college will have individual wants peculiar to himself. Perhaps he is a motorist and so nothing will delight him more than a thermos bottle, a picnic kit, or one of the many things to make his joy-riding more comfortable. As he has formed the habits of reading and study, book ends for his reading table, a book-rest for an easy chair, or a pair of field glasses may fill a long-felt want. A traveling bag, a choice picture which portrays his special line of interests will be prized.

With the gift should go the card of the donor, or better yet, a note containing hearty commendation and personal well-wishes.

Any gift given in the right spirit of sure to be appreciated, so let us not forget our friends, if we have nothing other to offer than a letter of well-wishes. After all, material gifts are but the visible symbol of our desire to commend and give pleasure.

### HOUSE-CLEANING.

BY MRS. S. E. M'COY.

Housecleaning may be easily done, and the discomfort of the family avoided, if done systematically. Do not begin the real cleaning too early. Wait until warm enough to let the fires go out, so as not to have dust accumulate, and until the ground is dry enough not to furnish mud tracks. Many things may be done early that will lessen the labor when real cleaning comes.

Our method is to begin on the cellar first, and this we do the first warm days in spring. Cleaning the cellar is a hard job, and if neglected until the rest of the work is done it is liable to remain undone. No part of the housecleaning is so important from the standpoint of cleanliness, or, because it is out of sight more likely to be neglected. Many cases of sickness have been traced directly to an uncleaned cellar. We begin the work by sweeping all dust and cobwebs from rafters and ceilings, removing all empty bins and barrels that have contained vegetables, out doors, exposed directly to the air and sunlight, after cleaning out. Then the ceiling and walls are scalded with boiling water to which has been added sufficient concentrated lye to make it slick when rubbed between the fingers. We then open the windows and scrub the floor, especially digging out the corners.

After allowing the cellar to dry out we begin the campaign again by sprinkling the floor and walls with a solution of copperas water, made by dissolving two pounds of copperas in one gallon of water, using a watering pot with a fine spray. This is a good disinfectant and helps to drive away rats, mice, and other vermin. We complete the job by whitewashing the walls, using plenty of whitewash to which has been added copperas at the rate of one-half pound to every gallon of the wash.

Since learning how to clean wall paper we do not find it necessary to re-paper all the rooms at housecleaning time. If you have a room that needs cleaning, do not despair. Take ten cents worth of liquid ammonia, ten cents worth of oil of sassafras, one teaspoonful of salt, one quart of cold water. Mix the water with the ingredients and stir in flour until the mixture is thick enough to drop from a spoon. Put this in a pan and set in a kettle of boiling water. Cover closely, but stir often so as to cook evenly. If it does not stick to the hands when cool it is done.

Take from the pan and divide into small pieces and knead each piece with the hands for a few minutes. Cover all, except one piece, closely in the pan to prevent the ammonia from evaporating. Take the piece of dough left out and begin the cleaning process by rubbing one way on the ceiling and at every stroke work the dirt into the dough. When very dirty, exchange for a clean piece of dough. When done overhead, begin the side walls and proceed as before. This is easily done, when once learned, and will remove the accumulation of dirt and smoke, leaving the old paper almost as clean and bright as when first hung.

When it is really necessary to re-paper a room care should be taken to select paper that will harmonize nicely with floor coverings, furniture, woodwork, etc. Most farm houses have large rooms; yet some few still have



the small bedrooms. For these the paper should be light in color, for dark paper seems to diminish the size of such rooms. Rooms with a northern exposure get very little sunlight so should be papered in tans and yellows. A cream or other light ceiling will harmonize with almost any side wall paper and is preferable for many reasons. Rooms with a southern exposure require cooler shades and for such rooms there is nothing prettier than pale blue.

Never use red or gaudy flowered paper—small neat designs are much daintier, and one does not tire of them so quickly. Green is a restful color and is lovely for the living-room. Neutral shades with a cut-out fruit border are suitable for the dining-room and kitchen. In choosing wall paper use the utmost care. Never select lavender, pink or the darker shades of green as these colors fade badly. It is not always advisable to use a border with a paper just because it comes with it. It is better not to use it at all, than to have the otherwise pretty effect of the whole room spoiled by so doing.

#### PIN-MONEY METHODS.

BY CASSIE CRAIG.

If a woman has no other vocation for pin money, let her try raising plants for sale. Cabbage, cauliflower, spinach, celery, onion, tomato, or ground cherry, and there are yet others. Also flower plants find ready sale. Make hot-beds or sow the seed in boxes. When a nice lot are ready for sale put out a sign as follows: "Thrifty Plants for Sale, 50c per 100."

You will find plenty of answers to that sign. Pansy plants find a ready sale any time, also shrubs. Raise a few berries also. A woman who had need of a little pin money and lived at the junction of two roads put up a sign: "Fresh Eggs and Butter. Also Bacon." She sold enough to keep the family in provisions and clothes.

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Our latest Fashion Book, containing illustrations of over 1,000 designs of ladies', misses' and children's garments in current fashions, also newest embroidery designs, and articles which give valuable hints to the home dress-maker, will be sent to any address upon receipt of ten cents.



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You up-to-date farmers who own your property—take pride in your home and love your good wife and children—you should have good light.

The day has passed when good light in the farm home could be considered a novelty or expensive luxury. Nor is it a matter of big investment. Today good light is an inexpensive necessity.

## Pilot-Carbide-Outdoor Lighting and Cooking Plants

have totally changed the old fashioned methods of house and barn lighting and cooking in the country home.

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#### So can you afford it.

You can afford that new mowing machine, seed drill, and sulky plow. You can afford all the improvements that make your place a model farm, because they save *you* time and work.

Think of your good wife. She is your business partner. Her duty has been to make your home. She has done it well. She has contributed as much to your success as you have yourself.

The PILOT is going to save *her* a lot of hard work—dirty work—filling, cleaning and carrying lamps about the house—the meanest work a woman has to do. Think, too, what a gas cook stove will mean to her on hot days and when quick meals are wanted in a hurry.

*If you can afford improvements for your farm, surely you can afford this one great improvement for your home—your wife—and your children.* It is the one thing that you and your whole family will enjoy every night—365 times—every year.

Consider the PILOT from every standpoint—safety, comfort, convenience and better living. Your decision will be what 300,000 other country home owners have decided—*you can't afford to be without it.*

Write for illustrated catalogs and descriptive booklets giving all the facts. Find out, *today*, about the PILOT.

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## Milk Producers Hold Enthusiastic Meeting

BETWEEN four and five hundred milk producers met at the Agricultural College May 23 to consider the milk marketing question. No more enthusiastic meeting of farmers has been held in the state than this one. Representatives were present from nearly every important dairy county, and some sections sent large delegations in order to insure a successful convention.

A state association of milk producers was organized and officers were elected. During the session about \$500 was raised to start active work. Local associations are to be enthused, defunct ones revived and new ones organized where such institutions have not existed before.

The recent success of the Chicago milk producers in getting a substantial increase in the price for milk undoubtedly contributed much to the spirit of this meeting. This general interest was greatly augmented by the address of Rodney B. Swift, president of the Northern Illinois Milk Producers' Association and leader of the big movement that forced Chicago dealers to meet the farmers' demands.

While there was much difference of opinion among those present as to the methods to be employed in solving the dairy problem for Michigan farmers, this difference was overshadowed by the splendid spirit of co-operation which was everywhere evident among the delegates. They were all ready to enter into any legitimate scheme that promised relief, and they not only seemed willing to encourage any movement to that end, but offered time and subscribed money to "start the ball rolling."

### What they did in Chicago.

Much credit for the success of the meeting must be given the state Office of Markets, the initiative taken by the Livingston County Milk Producers' Association, and the general publicity of the conditions existing. However, the address of Mr. Swift probably did more to crystallize opinion and inspire the men present with a determination to see the matter through to a successful issue than any other one factor.

He described the work done by the producers of the Chicago district. In that city there are 2,500 distributors and on the farms around the city live 13,000 milk producers. From 65 to 68 per cent of the dairy farmers are living on rented farms, and 56 per cent of these tenants are foreign born. Of the total number 9,000 producers were found who would stand behind a movement to force the distributors to pay a living price for milk.

The reason why so many foreigners had entered into the dairy business was that American farmers absolutely could not produce milk at the price that was paid and maintain themselves on an ordinary plane of living. They could make more by renting the farms to foreigners at around \$4 per acre. These foreigners by reason of their lower standards of living and the employment of all the members of their large families throughout long days in the caring for the stock and milk were enabled to make enough to meet their rent and other fixed expenses, but without a reasonable profit.

### Farmers Forced to Act.

After appeals had been made to the distributors and to the city officials of Chicago asking that an investigation of the conditions existing among the dairy farmers be made and these appeals were disregarded, the farmers felt compelled to do something. Canvassing the situation they found that their only hope of securing attention and getting relief was to refuse to deliver milk into the city. While producers' associations had existed for a number of years, the miserable conditions existing and the determination to carry out a definite program gave new enthusiasm to the old organizations,

and facilitated getting dairymen together in other sections, until every important producing community was well organized and the situation warranted the effort made in March.

Mr. Swift stated that while these meetings were most enthusiastic, it required work to get the 9,000 of the 13,000 producers ready to stand firm when the test came, and here he emphatically stated that it was imperative to keep the organization down close to the local men. They must know and feel that it is their fight, and that success depends directly upon their co-operation and support.

There are local and county branches of the general organization. By virtue of being a member of a local organization, one is a member of the county and the main organization. There is a director over each county association, whose duty it is to assist the local chapters.

### Local Board Sells the Milk.

Each local association selects from its members a board which sells all the milk furnished by the members.

### BETTER PRICES FOR MILK.

The average dairyman is getting less for market milk than it costs to produce it.

The permanency of the industry demands higher prices to producers.

The only hope of securing higher prices is by thorough organization.

In every community where market milk is produced a local organization should be flourishing.

Community organizations can co-operate with each other through the state association just organized.

Without exception, these boards have been found absolutely honest and reliable, and in no instance has their integrity been brought into question. They make contracts and handle all business matters in connection with the sale of milk.

When it became apparent that the farmers must strike before the dealers would listen to their claims, the problem of caring for the tenant farmer who needed every cent of the money received for milk from day to day to meet pressing obligations, was so serious as to cause grave apprehension among the leaders in the movement; but the rank and file of the members met this situation squarely by raising a fund to assist any who might need help during the strike. The loyalty and enthusiasm of the men ran so high at one meeting that they quickly subscribed \$3,520 for this purpose.

When the strike was called men were picketed at every receiving station to persuade farmers who sought to deliver milk, to support the association. It was the effort of the society to have this part of the program carried out without violence, but a few of the men went farther than they were instructed, and some of these acts and the claim that the organization was in restraint of trade gave the dealers a chance to take matters into the federal courts, which they did, but even here the farmers' representatives were successful in defending themselves.

### Dealers Finally Give Up.

The dealers soon saw that it was necessary to do something, as they had no milk to supply their customers, and so through the mediation of a local official and politician, they attempted to draw the farmers into an arbitration arrangement. But the farmers were not to be trapped and they refused to enter into the scheme in that they had

previously offered to place the matter in the hands of an unprejudiced committee, and now that they had the situation so well in hand, they determined to continue until their reasonable demands were granted. When the dealers saw that they could not prevail they willingly signed contracts agreeing to the price asked by the farmers.

Mr. Swift believes that organizations of this kind have a utility aside from the advantages in making contracts with the middlemen. The consumption of milk ought to be doubled and trebled because food units are now purchased more cheaply in the form of milk than in any other, and at the present time milk is consumed as a luxury when it should be considered a common food. He pointed out that in the city of Chicago the people are spending around \$20 per capita for intoxicating drinks and only about \$5 per capita for milk. He believes that a well conducted educational advertising campaign would go far toward increasing the quantity of milk consumed.

### Non-Profit Distributing Organization Needed.

The speaker expressed it as his opinion that the distribution of milk will not be carried on successfully until it is handled by a large non-profit co-operative organization. He does not believe in the farmers organizing a regular corporation for this purpose, but that they should build up a non-profit association that would market the milk at actual cost, and then for the farmers to look for their increased profit from the better prices they will receive for milk.

The Chicago organization proposes to go before the Illinois legislature at its next session and demand a law that will make it a criminal offense for a buyer of milk or cream to return a wrong test or weight with the intention of withholding money that rightfully belongs to the seller.

In closing he stated that selfishness is the great barrier to successful co-operation. This greedy spirit must be overcome. Members should see things, not from their individual standpoint, but from the community standpoint. It takes time to train men to the new order and those who have the matter in charge must work on patiently through many discouragements. The results, however, are worth while and the new conditions open up countless opportunities for larger service and better living.

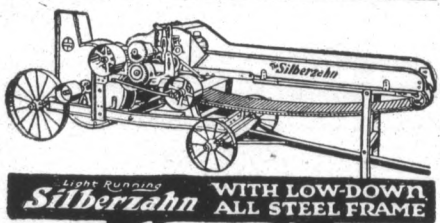
### Ohio Dairymen Succeed.

N. P. Hull, of Diamondale, a prominent Michigan dairyman and now president of the National Dairymen's Association, added to the interest of the session by reciting the success attending the co-operative venture of the dairymen in eastern Ohio. Through successful organization these dairymen instead of being obliged to bow to the impertinence of Pittsburg dealers were enabled to make satisfactory contracts with them, and they also secured better arrangements with the railroads that carry the product.

### Committee's Report.

The committee on permanent organization drafted articles of incorporation and by-laws which were adopted with few alterations. They were substantially as follows:

- (1) The organization shall be known as the Michigan Milk Producers' Association.
- (2) It shall be incorporated under the laws of the State of Michigan.
- (3) There shall be a board of directors consisting of seven members. Any association having fifty members shall be entitled to one representative on a general board and an additional representative for each fifty additional members or fraction thereof.
- (4) The officers of the association shall consist of president, vice-president, secretary and treasurer. There



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**SEED CORN,** Picket Yellow Dent. Germination 98% and better. 1914 crop. Shelled and sacked 7c. per pound F. O. B. Grand Rapids. J. P. Munson, Pres. Kent Co. Farm Bureau, R. R. 9.



shall also be an executive committee of five members, including the president, secretary and three members selected by the board of directors.

(5) The term of incorporation was placed at thirty years and the place of doing business was fixed at the Agricultural Building at East Lansing.

(6) The membership is restricted to persons who are actually engaged in the production of milk. The annual meeting will be held on the third Tuesday in October, which will also be the end of the fiscal year of the society.

(7) Each local association shall pay a fee of \$5 to become a member of the state association, and each member of the local association shall pay a fee of \$1 into the local treasury, 50 cents of which is to be paid to the treasury of the state society.

While these matters were being considered, parties passed through the audience taking contributions for starting such organization work as needs to be done at once. These men collected around \$500 for this purpose.

Officers were elected as follows: President, N. P. Hull, Dimondale; vice-president, R. C. Reed, Howell; secretary-treasurer, Silas Munsell, Howell; members of the board of directors, Silas Munsell; A. R. Harrington, Grand Rapids; John C. Near, Flat Rock; Jas. Kerr, Birch Run; A. L. Chandler, Owosso; John Hull, Dimondale; Milo Godfrey, Napoleon.

During the summer every effort is to be made to build up strong local associations, and at the annual meeting to be held in October a constructive program for improving the quality of milk and for securing more remunerative prices, will be mapped out.

The following resolution to Michigan's representatives in Congress was unanimously adopted: Whereas, there exists at the present time a great discrimination against the dairy interests of Michigan and the United States in the fact that the dairy products of Europe are allowed to enter this country without duty, thus still farther depressing the price of our own dairy products which are now produced at a loss to the farmers and dairymen of this country as is now attested by the investigations being made by the agricultural colleges. Therefore, we, the milk producers of Michigan, 400 in number, in convention assembled on the twenty-third day of May, 1916, at the Michigan Agricultural College do hereby most earnestly petition your most honorable body to bring about such legislation at this session of Congress as shall free dairy products of the unjust discrimination in favor of the dairy interests of the European countries, in the interests of our farms and our homes we will ever pray.

## Crop and Market Notes.

### Michigan.

**Mecosta Co., May 24.**—Pastures are in good condition. Wheat is poor and meadows fair. Seeding late and less oats sown than usual. Scarcely any corn planted. Apple trees are in full bloom, while peaches are not blossoming as full as usual. Apricots blighted. Little or no spraying done here. Potatoes are being cleaned up at 95c per bushel. Butter 23c; eggs 20c; butterfat 28c; cattle 30c; hogs 9c; seed beans \$4.45.

**Sanilac Co., May 20.**—Wheat is small though seemingly healthy. Pastures short; old meadows poor, but new seeding thick and even. Not more than 50 per cent of spring grain put in yet owing to continued rains and cold weather, which will affect the oat crop. Fruit trees budding, but not much spraying done yet. Small pigs quite plentiful and sell for \$6 per pair; wool 35c; butterfat 30c; eggs 21c; beans \$3.60; oats 42c; fat cattle \$7; hogs \$10.

**Muskegon Co., May 17.**—Wheat and rye will probably average about two-thirds of a normal crop, pastures are fairly good. Early gardening in and some early potatoes planted. Fruit trees are looking good so far, and some spraying done. Spring pig crop normal, but no sheep here. Muskegon county now has a county farm advisor. Beef 10c; pork 11c; butterfat 31c; pea beans \$3.75; kidney beans \$4.25; potatoes 90c; wheat \$1.10; rye 75c.

**Kalkaska Co., May 18.**—Fall grain is in normal condition. Not over half the usual amount of spring grain sown owing to continued cold, wet weather, and it will not be favorable for corn planting for at least ten days. Pastures and old meadows look good. Live stock of all kinds has been marketed very closely. Butterfat 31c; eggs 18c; hay \$18; potatoes 70@75c; oats 50c; wheat \$1.15; cows at auctions \$50@80; horses up to \$200.

**Ingham Co., May 18.**—Wheat, meadows and pastures not doing very well, it being too cold and wet. Oats about the only spring crop in, though some farmers did not succeed even with oats. Many orchards destroyed by the scale; very little spraying done. Pig and lamb crops about normal. Wool 20@36c; butterfat 29c; dairy butter 25c; beans \$3.60; cattle \$6@6.50; hogs \$8; lambs \$9; calves \$9; chickens 16c; oats 45c; hay \$16; wheat \$1.15; rye 85c; barley \$1.20 per cwt; potatoes \$1.10 per bushel.

### New Jersey.

**Monmouth Co., May 22.**—Pastures and meadows are in fine condition, as are also wheat and rye. Fruit trees give promise of a heavy crop. Growers are well along with spraying. Spring pigs scarce and high. Butter 30@40c; milk 4½c per qt; cattle 10c; hogs 10c.

### New York.

**Orleans Co., May 17.**—Pastures, wheat and meadows are fine. Very little spring crops in on account of the wet weather. Farmers are becoming discouraged. Very little plowing of any kind has been done. All kinds of fruit is blossoming full. Spraying is general though late. It is getting so late that many are abandoning the idea of oats and talk of planting beans. Pigs not plentiful, but the usual number of lambs.

**Niagara Co., May 17.**—Scarcely any oats sown, and some farmers have not done any plowing owing to continued rains. Unless weather becomes settled, there will be a shortage of oats. Pastures and meadows are especially good. Wheat good. Fruit trees are in bloom with the exception of apple trees. Lime-and-sulphur spraying is all done. But few trees winter-killed. Pigs and lambs a small crop here. Horses the cheapest in years. Many farmers have to buy hay. Calves \$9@9.50; butter 25c; eggs 25c; wheat \$1@1.15.

### Ohio.

**Greene Co., May 17.**—Pastures are good and meadows promising. Wheat has made considerable improvement the past month. More oats than usual put in, the winter-killed wheat ground being mostly sown to oats. Corn planting in progress and a large acreage in. Wool 33@35c; butterfat 29c; cattle \$8.50; hogs \$9.50; wheat \$1.15; corn 70c and scarce.

### Indiana.

**Wayne Co., May 24.**—A large acreage of corn and oats was put in. Work has been delayed by rains. Corn is not all planted. Oats look good and pastures and meadows are fine. Wheat is very poor. Fruit prospects are not promising, and practically no spraying was done. Stock is doing well and the pig and lamb crops were up to average. Wool 38c; butterfat 30c; corn 70c; oats 40c; hogs \$9.50.

### Missouri.

**Phelps Co., May 22.**—Wheat, pastures and meadows are in fine condition. Oat acreage was large, and corn is in. Outlook for peaches and apples is good, and spraying is all done. The pig and lamb crops unusually large. Wool 34c; wheat \$1.05; potatoes retail at \$1.60; butter 20c; hens 13½c; hogs 9c; cattle \$8.50; strawberries 15c per box. Alfalfa is about ready for the first cutting.

**Warren Co., May 22.**—Cool weather has delayed the growth of grass. A large part of fall wheat plowed up. Much corn planted. Many are seeding to sweet clover, Sudan grass and cowpeas for hay. Have promise of a bumper crop of all fruits except peaches. Wool 32½c; butterfat 31c; cattle \$8.60 per cwt; hogs 9c; eggs 20c.

**Vernon Co., May 22.**—Crops are backward excepting pastures. Wheat and oats are not a good stand. Corn planting is about finished, and a fair acreage was put out. Fruit will be very scarce excepting strawberries, which are fair. No peaches at all.

### Colorado.

**Kit Carson Co., May 22.**—Weather is fine with plenty of moisture. Fall wheat and rye show a fairly good stand. Acreage of spring crops large and corn planted. An average crop of pigs has been raised. Butterfat 26c; eggs 15c; corn 60c; wheat 75@90c; barley 50c; oats 40c; hens 13c.

### Minnesota.

**Lyon Co., May 18.**—May opened with nice weather, but the past week has been rainy. The weather has not thoroughly warmed up, and we are threatened with frost. Much corn ground is still unprepared, and scarcely any corn has been planted.

## Heavy Mail at Hickory, N. C.



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Farmers are realizing that three cows with a good cream separator are as profitable as four without one. A good separator is one that gets all the cream down to one drop in each gallon of skim milk. That's efficiency—and that's the reason for the popularity of International Harvester separators, Lily and Primrose.

Lily and Primrose separators skim to this fine standard for years, because they are built on a sane design, strong, simple, reliable, sanitary. The few easy adjustments necessary, anyone can make. The single automatic oiling arrangement takes care of every bearing and sidesteps trouble.

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Champion Deering McCormick Milwaukee Osborn Plano

## BLIZZARD filled it after rival failed

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## BLIZZARD Ensilage Cutter

has unlimited elevating ability because it is designed scientifically right. The catalog explains it all. Other Buzzard certainties are—simple to understand and run—large cutting capacity—even cut silage—steady work—unusual safety—small repair cost—long life.

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## ZYROMETAL SILOS

are positively air-tight—doors and all—made of anti-corrosive NO-CO-RO METAL, the great rust-resistant. You get a handsome silo that stands solid as a monument and lasts a life-time—windproof, fireproof, crackproof, weatherproof, collapse proof, repair proof.

### Easy to erect

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# Markets.

## GRAINS AND SEEDS.

May 29, 1916.

**Wheat.**—Since a week ago wheat recovered some of the recent decline in values, but on Saturday, owing to the holidays and to the promise of rain in some of the southwestern states where lack of moisture was doing serious damage to the crop, a heavy decline resulted. There is no support at present from foreign markets, and because of the heavy supply of wheat at primary markets, the cash trade is a hindrance to the bull side of the market. The continuation of peace talk is also a bearish factor. No. 2 red wheat was selling on the local market a year ago at \$1.35 per bushel. Students who are unprejudiced in their opinion of the wheat market for the coming year believe that farmers should plan on holding their new crop of wheat until the first of 1917 at least. The heavy stocks of the 1916 crop will be used to force values down during the heavy marketing period of July, August and September. This advantage of the dealers can only be counteracted by general holding of the grain by farmers until values have recovered. Conservatism in marketing this summer and fall is certain to increase the farmers' income from this crop. Last week's Detroit quotations were:

|           | No. 2<br>Red. | No. 1<br>White. | May.     |
|-----------|---------------|-----------------|----------|
| Wednesday | 1.15 1/4      | 1.10 1/4        | 1.16 1/4 |
| Thursday  | 1.16          | 1.11            | 1.17     |
| Friday    | 1.17          | 1.12            | 1.18     |
| Saturday  | 1.14 1/2      | 1.09 1/2        | 1.15 1/2 |
| Monday    | 1.13 1/4      | 1.08 3/4        | 1.14 1/4 |
| Tuesday   |               |                 |          |

Chicago.—May wheat \$1.07; July \$1.08; Sept. \$1.08 7/8.

**Corn.**—We have had one ideal week for starting the corn plant, and this has proven a bearish feature to this market, prices having suffered a gradual decline since last Wednesday. Over a large portion of the country farmers have their fields planted, and with favorable weather this week the work will be completed in the northern sections of the corn belt. With continuous warm weather growth should be rapid and undoubtedly will recover almost entirely what it has lost from the lateness of planting. One year ago No. 3 corn was quoted at 76c per bu. Last week's Detroit quotations were:

|           | No. 3<br>Mixed. | No. 3<br>Yellow. |
|-----------|-----------------|------------------|
| Wednesday | 72 1/2          | 74 1/2           |
| Thursday  | 71              | 73               |
| Friday    | 71              | 73               |
| Saturday  | 70              | 72               |
| Monday    | 69 1/2          | 71 1/2           |
| Tuesday   |                 |                  |

Chicago.—May corn 70.4c; July 69.4c per bushel; Sept. 69.4c.

**Oats.**—Warmer weather has been a great boon to the oat fields, and has improved chances so much that prices have declined gradually since last Wednesday. The lateness of the season, however, has cut down the acreage in many sections, and decreases the probability of a crop of high quality. One year ago standard oats were quoted locally at 55¢ to 55 1/2¢ per bushel. Quotations are as follows:

|           | Standard. | No. 3<br>White. |
|-----------|-----------|-----------------|
| Wednesday | 45        | 44              |
| Thursday  | 44        | 43              |
| Friday    | 43 1/2    | 42 1/2          |
| Saturday  | 42 1/2    | 41 1/2          |
| Monday    | 41        | 40              |
| Tuesday   |           |                 |

Chicago.—May oats 39.1c; July 40.1c; Sept. 38.4c.

**Rye.**—This grain is steady and dull with cash No. 2 quoted at 97c per bu.

**Beans.**—A further advance of 10c in the price for cash beans was made last week, the cash price now being \$4.10 per bushel. June delivery \$4.15. At Chicago there is very little doing owing to the small stocks. Prices are unchanged with pea beans hand-picked at \$4.25; sample \$3.75@4; red kidneys \$5 per bushel.

**Clover Seed.**—This product is steady at \$8.85 for prime red and \$9.25 for prime alsike.

**Timothy Seed.**—Prime spot \$3.60 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 \$6.20; seconds \$6; straight \$5.60; spring patent \$6.50; rye flour \$6.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$30; cracked corn \$33; corn and oat chop \$29 per ton.

**Hay.**—No. 1 timothy \$22.50@23; standard timothy \$21.50@22; light

mixed \$21.50@22; No. 2 timothy \$19@20; No. 1 mixed \$16@16.50; No. 1 clover \$13@14.

Chicago.—Choice timothy hay \$21@22; No. 1 do \$19.50@20; No. 2 do \$17.50@18.50.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—The market is 1/4c lower on account of liberal offerings. Extra creamery 29c; firsts 27c; dairy 24c; packing stock 21c.

**Eggs.**—The market is steady at a decline of 1/4c. Price for the week, based on sales is 29c.

Chicago.—The feeling is easy because buyers are awaiting lower prices. Receipts are more liberal but no accumulation reported. Prices are little lower. Extra creamery 28 3/4@29c; extra firsts 28 1/4@28 1/2c; firsts 27 1/2@28c; dairy extras 28 1/2@29c; packing stock 23c a pound.

**Eggs.**—Heavier receipts caused a decline of 1/4c in price. Demand is good. Current receipts are quoted at 21 1/4c; firsts 22 1/4c.

Chicago.—There is an easy undertone, with prices lower. Offerings are liberal and demand good. Firsts 20 1/2@21c; ordinary firsts 18 1/2@20c; miscellaneous lots, cases included 20@21c.

**Poultry.**—Market is firm with no change in prices. Fowls 19c; broilers 35@40c; ducks 19@20c; geese 11@12c.

Chicago.—The market is steady with not change in prices except for hens, which are 1/4c lower. Quotation for live as follows: Hens 19c; ducks 16@18c; geese 10@12c; roosters 11 1/2c; broilers 1 1/4@1 1/2 lbs. 32@35c; 1@1 1/4 lbs. 28@30c.

## FRUITS AND VEGETABLES.

**Apples.**—Apples are in fair demand and good supply. Quotations as follows: Baldwins \$3.50@4; Steele Reds \$4@5. At Chicago business is quiet, warm weather causing small buying. Prices unchanged. Quotations: No. 1 Greenings are quoted at \$2.50@3.25 per bbl; Golden Russets \$3@3.25; Baldwins \$3@3.25; Spys \$3.50@4.50; Ben Davis \$1.75@2.25; Steele Reds \$4@5.

**Potatoes.**—Potatoes are firm at an advance of 15c over last week. Carlots on track \$1.20@1.25 for white. At Chicago the market is slow with prices slightly lower. No Michigan stock is quoted but others sell from 95c@1.05 per bushel.

## WOOL AND HIDES.

**Wool.**—Despite the fact that this is an off season for manufacturers to purchase raw material, the volume of the sales in Boston last week was large. The greatest activity, however, is in the west where dealers are bartering with producers for this year's clip. Prices are considerably higher than a year ago and sales are being made at quotations which will oblige manufacturers to pay above the present range of values when these wools are resold in the east. In the fleece states many growers are holding their wool for higher values and we have reports of prices up to 37c. There is little to discourage those who can hold their fleeces for later marketing.

**Hides.**—No. 1 cured hides 18 1/2c; No. 1 green hides 15c; No. 1 cured bulls 13c; No. 1 green bulls 10c; No. 1 cured veal kip 20c; No. 1 green veal kip 18c; No. 1 cured murrain 18c; No. 1 green murrain 16c; No. 1 cured calf 28c; No. 1 green calf 25c; No. 1 horsehides \$6; No. 2 horsehides \$5; sheepskins as to amount of wool 50c@2.50; No. 2 kip and calf, 1 1/2c; other No. 1 hides 1c off.

## LIVE STOCK MARKETS.

### Buffalo.

May 29, 1916.

**Cattle.**—The receipts of cattle for Thursday, Friday and Saturday of last week amounted to about 20 cars. The market has been about steady with offerings absorbed by the regular demand.

**Hogs.**—Receipts for the above mentioned days amounted to 100 cars. There was a slight decline in values on Saturday, with offerings moving slowly. Heavy and mixed \$10@10.05; yorkers \$9.40@10; pigs \$9@9.25; roughs \$8.75@8.90; stags \$6.50@7.25. These quotations are about 15c below the values of the previous day.

**Sheep and Lambs.**—There were about 60 cars of sheep and lambs delivered here during the last three days of the week. On Saturday the market was dull and prices were ruling below those of the previous day. The quotations were: Lambs \$5.50@10; yearlings \$5@9.90; wethers \$8.25@8.50; ewes \$4@8; sheep mixed \$8@8.25.

**Calves.**—The trading in calves was dull during Saturday's market, and values were a shade below those of the two previous days. They ranged from \$4@11.75 per cwt.

### Chicago.

Cattle took most people by surprise last week when prime beefs boomed to \$10.50@10.75, top the week before having been \$10.35. Fat lots were fully 35¢ to 40¢ higher, and the entire list sold away up, the bulk of the steers going at \$9.25@10.35. Top was paid for a carload of fancy yearlings that averaged 1275 lbs., and prime heavy steers and fed distillery steers brought \$10.65. Inferior lots of thin steers sold in a small way at \$8.15@8.95, while fair killers sold at \$9@9.50, medium grade offerings at \$9.60@9.95, good steers at \$10@10.45 and choice to fancy beefs at \$10.50@10.75. Butcher stock soared higher along with steers, cows going at \$6.10@9 and heifers at \$6.10@9.70, the best prices being paid for yearlings, as usual. Cutters sold at \$5.40@6, canners at \$4.25@5.35 and bulls at \$6@9, yearlings being the highest sellers. Calves were active and higher, with sales of desirable light vealers at \$11@11.75 and sales made all the way down to \$6@9 for coarse to good heavy lots. The market for stockers and feeders was a stiff one, with an adequate supply and irregularly higher prices, sales ranging at \$6.50@9, with very few weighty lots of feeders for sale. The cattle market has reached a point where high prices are likely to result in curtailed consumption of beef, and yet there seem to be slim chances for much lower cattle prices. Everything in the cattle line sells about the highest ever known, prices for canners and cutters and bulls being extraordinarily high. In short, very ordinary cattle sell higher than choice beefs have sold in average years. Should beef cattle go still higher, it is only reasonable for well-bred stockers to join in the upward movement; and in that event buyers of these would be assuming big risks.

**Hogs.**—Hogs were largely withheld from the market by stockmen last week on account of the weakening of prices, but local packers assumed a bearish attitude, taking advantage of the poor demand for prime light heavy hogs for eastern shipment, and sellers experienced no little difficulty in checking breaks in values. Many hogs were carried over from day to day, and they added to the existing depression. Recent receipts averaged in weight 222 lbs., comparing with 216 lbs. a week earlier, 234 lbs. a year ago, 238 lbs. two years ago and 245 lbs. three years ago. Heretofore, hogs have had substantial advances, following bad breaks and most owners are disposed to act accordingly, although the packers are talking larger summer marketings and a lower level of values. At the week's close hogs sold at \$9.30@9.90, with pigs at \$7@9.15, according to weight and quality, the top price for hogs covering prime heavy butcher lots. Prime light shipping hogs brought \$9.85. A week earlier hogs brought \$9.60@10.20.

**Live muttons.**—Made fresh high records last week, with prime woolled Colorado lambs selling up to \$12.90 per 100 lbs., while prime clipped lambs soared to \$11.30. Subsequently the general demand became less urgent, and sharp general declines in values took place. Nearly all the offerings came on the market shorn, with a small representation of spring lambs. Receipts were materially increased, and heavy sheep declined \$1@1.25 per 100 lbs., while dry-fed lambs broke 25¢ to 50¢ and spring lambs 50¢ to 75¢. Spring lambs closed at \$9@12.50 per 100 lbs., and clipped flocks closed as follows: Lambs \$6@10.90; yearlings \$8.75@9.75; wethers \$7.50@8.65; ewes \$2.50@8.25; bucks \$6@6.75.

**Horses.**—Horses were marketed in no more than ordinary numbers last week, and all army horses that passed inspection brought unchanged prices, but otherwise trade dragged, with many offerings not of the better class selling \$10@20 per head lower. Drafters with quality brought \$245@300, while the chunks sold anywhere from \$165@240. Inferior old horses were bad sellers at \$50@85, while farm horses of any quality sold at \$90@125, with mares quoted at \$125@250.

## WORLD CROP STATISTICS.

The April number of the Bulletin of Agricultural and Commercial Statistics published by the International Institute of Agriculture contains information relating to areas sown and prospects of the crops in the northern hemisphere. As regards autumn sowings of cereals (1915-16 crop), the most important of the new figures in the present Bulletin are those of wheat in British India (12,232,262 hectares or 94.4 per cent of last year's area, and 103.5 per cent of the average of the preceding five years) and in Japan (502,107 hectares or 111 per cent of last year's area, and 104.6 per cent of the average of the preceding five years) while the area under barley in Japan is estimated at 1,258,258 hectares or 96 per cent of last year's, and 97.5 per

cent of the preceding five years' average. There are no other important alterations shown as compared with the areas stated in the March Bulletin.

The state of these autumn sown crops is good in Italy, Roumania, and Egypt, satisfactory on whole in France, Switzerland, the United States, British India, Japan and Algeria, but in Great Britain the season is very backward.

Dealing with current harvests, preliminary estimates of the yield of maize in Argentina amount to 40,930,000 quintals or 47.6 per cent of that of last year (an exceptionally abundant crop) and 84.1 per cent of an average of the previous five years.

By including these data from Argentina with the maize crops of the Northern Hemisphere, the total yield of 1915 (and in the Southern Hemisphere of 1915-16) may be stated for the following countries: Hungary, Spain, Italy, Roumania, European and Asiatic Russia, Switzerland, Canada, United States, Japan and Argentina, giving altogether 946,761,150 quintals or 105.7 per cent of last year's yield in these countries, and 109.8 per cent of that shown by an average of the preceding five years.

## LIVE STOCK NEWS.

In a recent week a carload of fancy Angus yearling cattle from 14 to 20 months' old brought \$10.25 per 100 lbs. on the Chicago market. When this is done, it will be seen readily that growing baby beef can be made exceedingly profitable, and it is no wonder that the industry is becoming more and more popular all the time. The stockman who bred and fattened these youngsters said: "I make cattle raising my chief business. My land is high-priced, yet breeding and feeding cattle pays me a fair profit. It must be made to pay, else I could not remain in the business."

Farmers in southern Ohio have marketed the greater part of their fed cattle, and feeders are so high as to discourage purchases at the present time. Corn sells around 65 to 70 cents a bushel and is fed freely to hogs at a substantial profit.

## SPRING CATTLE SHOW.

The Central Michigan Holstein-Friesian Breeders are to hold the second annual cattle show in Lansing on the City Market, June 15-16, 1916.

This is one of the most unique cattle congresses that is held. So far as known it is the only one of its kind in the United States.

Everybody knows that the farms of central Michigan are well stocked with high-class Holstein-Friesian cattle, consequently this show will be the mecca of all up-to-date farmers and all Holstein breeders.

Judging from the entries already made, this show will outclass the one held last year.

Everybody will be there. All cattle lovers should mark the date, June 16, on their calendars and buy a ticket to Lansing.

The Chamber of Commerce of the city of Lansing is to co-operate with the association in making this show a success, because they fully appreciate that central Michigan is a great breeding center for the black and white cattle, and along with the celebrated manufactured products of the city of Lansing, they take pride and interest in the adjacent live stock industry.—Fred R. McDonel, Sec.

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**FRUIT** HIGHEST MARKET PRICE Quick Returns. Write for Stencil. Ship Direct to E. L. RICHMOND CO., Detroit.

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**Binder Twine** Farmer Agents wanted. Get our samples and prices. Theo. Burt & Sons, Melrose, Ohio.



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**For Quick Sale,** will sacrifice \$1000 Company of Saginaw, Michigan, manufacturers of the "Saginaw Silo," for \$500. An exceptional opportunity for investment in old established company. Write, A. C. Christopher, Box 759, Houston, Texas.

**Baird's Heave Remedy** Is guaranteed. Works while animal works. Write BAIRD MFG. CO., Box 627, Purcell, Okla., for particulars.

### THIS IS THE LAST EDITION.

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

### DETROIT LIVE STOCK MARKET.

Thursday's Market.

June 1, 1916.

#### Cattle.

Receipts 1948. The run in all departments was considerably below that of a week ago and the quality not nearly so good. Good service was rendered by nearly all the Detroit roads. Shippers off the Pere Marquette are complaining on account of the time their stock is held in the Delray yards after reaching Detroit. With the service remedied no one will have reason to complain. When stock, especially hogs, are held after reaching the various terminals in warm weather many of them die from the heat and are a serious loss to the shipper unless insured, and it is hoped the service will be remedied.

The cattle trade opened up strong at last week's prices and continued so on dry-fed stock, as high as \$10 per cwt. being paid. Grassers were not so good and all grades were fully 50c lower than they were a week ago. Never in the history of the yards have cattle been so high as at present and packers say they must be bought lower, the dressed commodity being entirely out of reason. Milch cows were scarce and steady. Quotations below are for dry-fed stock; grass grades bring about \$1 below these figures. Best heavy steers \$9.50@10; best handy weight butcher steers \$8.50@9.25; mixed steers and heifers \$8.25@9; handy light butchers \$8@8.75; light butchers \$7.50@8; best cows \$7@8.25; butcher cows \$6@7; common cows \$5@5.50; canners \$3.50@4.50; best heavy bulls \$7.50@9; bologna bulls \$6.25@7; feeders \$7.50@8.25; stockers \$6.50@7.75; milkers and springers \$4@8.00.

Sandel, S., B. & G. sold Mason B. Co. 1 bull wgh 1210 at \$7.25, 1 do wgh 740 at \$6.50, 2 steers av 1150 at \$9.50, 2 do av 1085 at \$8, 2 cows av 935 at \$7.25, 1 bull wgh 700 at \$6.25, 8 butchers av 761 at \$7.75; to Sullivan P. Co. 3 cows av 907 at \$6.35, 1 do wgh 1090 at \$6.35, 3 do av 1130 at \$6; to White 7 stockers av 636 at \$7, 8 do av 651 at \$7, 2 do av 610 at \$6.50, 3 do av 493 at \$6.50; to McPhee 2 cows av 895 at \$5.85; to Mich. B. Co. 1 bull wgh 1060 at \$6.60, 1 cow wgh 790 at \$6, 1 do wgh 880 at \$5.25; to Kamman B. Co. 20 steers av 912 at \$9.50, 2 cow and bull av 975 at \$7.50; to Kamman 7 steers av 1136 at \$9.50, 12 butchers av 766 at \$8, 2 cows av 955 at \$7; to Breitenbeck 4 steers av 870 at \$9.10, 8 cows av 875 at \$7; to Fineman 6 butchers av 666 at \$6.65; to Bresnahan 12 do av 754 at \$8.35; to Kamman B. Co. 3 cows av 1077 at \$7.50; to Sullivan P. Co. 5 cows av 926 at \$6.50, 2 steers av 1045 at \$8.75, 2 cows av 1130 at \$6.50; to Zehner P. Co. 21 steers av 926 at \$9.10; to Kamman 1 bull wgh 1400 at \$8; to Mich. B. Co. 4 cows av 975 at \$6, 2 do av 850 at \$4.75; to Hammond, S. & Co. 4 bulls av 1200 at \$7, 2 do av 1335 at \$7.75; to Fineman 7 butchers av 447 at \$6.25.

#### Veal Calves.

Receipts 1070. Detroit this week was the highest market in the country for veal calves, bulk of the good selling at \$12 per cwt, and a few extra fancy at \$12.50. Common and medium grades \$7@10.50; the market opened and closed strong at these prices.

Haley & M. sold Parker, W. & Co. 2 av 115 at \$9, 19 av 155 at \$12, 3 av 225 at \$11.50, 3 av 170 at \$12; to Mich. B. Co. 6 av 130 at \$11.50, 10 av 161 at \$12.50.

#### Sheep and Lambs.

Receipts 490. There was hardly sheep and lambs enough on sale to establish a market and those offering were 50c lower than they were a week ago, top lambs selling at \$9.75. Best lambs \$9.75; fair do \$6.50@7; light to common lambs \$5.50@6; spring lambs \$11@13; fair to good sheep \$6@6.50; culls and common \$3@4.

Erwin & S. sold Nagle P. Co. 5 yearlings av 120 at \$7; to Parker, W. & Co. 5 spring lambs av 72 at \$13, 2 sheep av 135 at \$6, 5 spring lambs av 48 at \$12.

Haley & M. sold Parker, W. & Co. 18 spring lambs av 55 at \$11, 35 sheep av 100 at \$6; to Mich. B. Co. 2 sheep av 145 at \$6.50.

#### Hogs.

Receipts 7691. In the hog department the market was about 5c higher than on Wednesday on good grades. Pigs and light grassers no higher and on this grade the market is full 50c lower than last week, and grass pigs are not wanted. Good mixed \$9.50; light mixed \$9.25@9.35; pigs \$8.25@8.50.

### LIVE STOCK NEWS.

Wide-spread complaints have been heard for several months regarding the marked increasing aggressiveness upon the part of the big packers in sending buying agents over the live stock regions of the country for the purpose of purchasing hogs and other stock direct from stock feeders. This has been carried on so extensively as to arouse the stockmen of the country, and the subject was handled without gloves during the recent annual gathering at Cincinnati of the National Live Stock Exchange, W. A. Moody, of the St. Louis National Yards, in addressing the convention, said: "We believe this is a disguised movement upon the part of some of the big packers to reduce the price of meat producing animals to a level that will force many out of the business. We use the term, some of the packers, because it is a fact that at least one of the largest packers has refused to join in this attempt to break down the present plan of public markets, where prices are established by open competition." The unanimous belief of the stockmen attending the convention was that if the packers persist in this plan, live stock prices will naturally suffer seriously, while packers' profits will be materially increased ultimately.

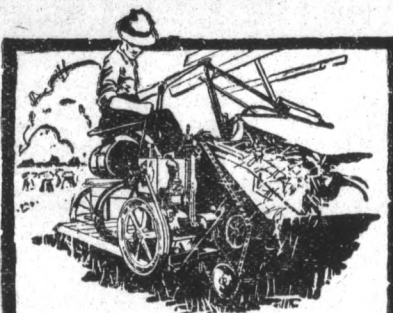
A leading commission firm at the Chicago stock yards that handles sheep and lambs exclusively says in a late circular letter: "From the best information we can gather, the crop of native lambs will be less than last year, and we see nothing in the world to warrant anything but high prices for fat lambs throughout the season. We learn that a great many feeders have been contracting on the ranges at prices about \$1 per 100 lbs. higher than a year ago."

Continued advances in cattle prices in the Chicago market landed prime beefs of good weight at \$10.75 per 100 lbs., or \$1.40 higher than a year ago, with correspondingly higher prices for other kinds. Turning back to May, 1907, it is found that steers sold for \$4.30 to \$6.50. Warmer weather tends to strengthen the demand for fat little yearling steers and heifers, but the call for weighty beefs is still much stronger than is usual on the advent of the summer period.

George B. Smith, of Addison, Mich., recently sold to C. F. Binder of the Central Market, Jackson, Mich., some steers raised from common heavy milking cows at top prices. The steers were sold at 9c to be weighed at home Monday June 5. Mr. Binder stated that this was the highest price he had ever paid for cattle. This is certainly a victory for Michigan farmers in solving a difficult problem, that of getting good steers from dairy cows. These steers were from a pure-blood Aberdeen Angus sire closely related to several International Grand Champions who probably transmitted 95 per cent of the beef qualities to the calves. Mr. Smith stated that the steers are as good as any western steers he has ever fed.

Many stockmen are now engaged in short feeding cattle for the market, and recent experiments made in the experimental stations in Iowa, Indiana and Missouri have been read with unusual interest by stockmen. Such experiments show conclusively that silage is really indispensable. In a recent week 25 head of steers fed experimentally in the Iowa experiment station were sold on the Chicago market for \$10.15 per 100 lbs., their average weight being 1351 lbs. These cattle were fed in five lots, the object in view being to ascertain how much silage and grain can be used most satisfactorily and economically. It was found that during the 120 days' feeding period the heavily fed corn silage lots showed extremely rapid gains.

A recent sale was made in the Chicago market of a carload of prime feeding Angus yearlings which averaged 660 lbs. at \$9 per 100 lbs., another high record. There has been a strong demand of late for high-grade stockers and feeders at unusually high prices, with the packers competing for and securing a good share of the better class. Most sales of desirable kinds took place at a range of from \$8.25 to \$8.85, with not enough of the best lots to go around.



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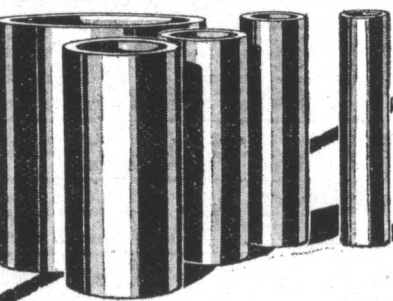
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Sweet potato plants, yellow and red Jersey, white and red Yam, by mail 40c 100. Exp. \$2.50 1000. Veg. plant list free. T. G. Brosius, Tiffin, O.

### Seed Potatoes, Million Dollar Rurals

5c per bushel, F. O. B. Shelby, sacks included. Seed Pea Beans \$4.50 per bushel. Improved Red Kidney \$5.00 per bushel. Graded Winter Vetch 15 cents per pound. C. E. ELLIS, SHELBY, MICHIGAN.

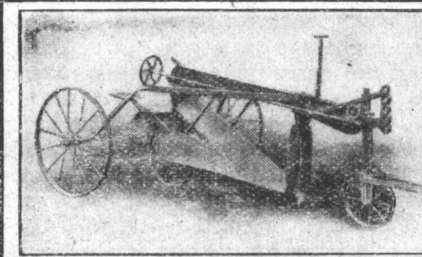
100 Finest Early Cabbage. Round head, 6lb, 100 asters, \$1.00, 100 early tomatoes 75c, salvia, 35c doz., all prepaid. Paul L. Ward, Plant Specialist, Hillsdale, Mich.

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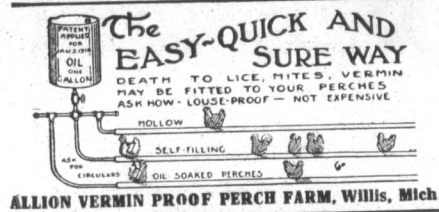




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"This is our experience in raising chicks, last spring. We never hatched out more than a few chicks by the old hen method before, so never considered it any great loss if we should lose a few, but last spring we bought a 144-egg incubator. The first hatch brought about 100 chicks. I was delighted, but in a few days one after another became afflicted with White Diarrhoea, and about half of them had died in ten days. I was discouraged. Sometime later, I came across an ad in a farm paper about Chictone. We sent to the Wight Company for some and it came before I got my second hatch, which brought me 111 chicks. I began giving Chictone right away and never lost one of them. At three weeks, some of them were as big as those from the previous hatch, and I never saw a livelier bunch of chicks. I would no sooner think of raising chicks without Chictone than I would try to raise them without food." Mrs. Clare Rust, Grantsburg, Wis.

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**BARRED ROCK EGGS**—Cock bird 213 egg hen. Pals., 198, 201, 206, 221, 237 egg hens, 15, \$3.00. Extra choice utility, \$1.15. **FINE KNOLL, BOX 391, SHELBY, MICHIGAN.**

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**JOHN'S** Big, beautiful, hen-hatched Barred Rocks. Eggs, 30, \$2.50; 100, \$7.00. Select matings 15, \$4; 30, \$7.00, all postpaid. Photos. Circulars. **John Northon, Clare, Mich.**

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\$0.00 for 1916 from Standard Bred S. C. White Leghorns, \$9.00 per 100. \$85.00 per 1,000. S. C. Brown Leghorns \$9.00 per 100, \$85.00 per 1,000. Our strains are heavy layers and are sure to please you. We guarantee their safe arrival. Catalog on request. **Wolverine Hatchery, Zeeland, Mich., Box 2221**

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**Eggs** for hatching—From pure bred White Plymouth Rocks, Pekin and White runner ducks. White African guineas. **H. V. Hostetler, R. 1, St. Johns, Mich.**

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**LILLIE Farmstead Poultry.** B. P. Rocks; R. I. Reds; W. Leghorns. 15 eggs \$1; 25 eggs \$1.50; 50 eggs \$2.50. P. P. delivery free. **Colon O. Lillie, Coopersville, Mich.**

**ORPINGTONS**—White, Single-Comb Kellersstrasse. 100 eggs \$5. 10 hens, 1 cock \$20. **M. E. THOMPSON, Redford, Mich.**

**PINE Crest** S. C. White Orpingtons—2 and 3 months old cockerels for sale. Hatching eggs and stock from pens, one half price. No baby chicks. **MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.**

**RHODE ISLAND REDS and PLYMOUTH ROCKS.** Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00, 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys, 8 to 36 lbs. according to age \$6 to \$25, 10 eggs \$5. **A. E. Cramton, Vassar, Mich.**

**R. I. Reds, Both Combs, Most Popular** strain in Michigan for hatching. Baby Chicks. Write for catalog. **INTERLAKES FARM, Box 39, Lawrence, Michigan.**

## June Reminders for the Poultry Yard

JUNE is the month of most work on many poultry farms and the general farm finds much to do at this time. Hatching is practically over but if one has had poor success with the incubators or the hens it is not a bad plan to bring off a hatch or two in June, provided the chicks can have fresh quarters and clean runs in which to start life. If the early hatches have depleted the green food in the runs and if the brooders and coops have become contaminated the late hatches will start with a handicap that is very hard to overcome. The best plan is to clean things up after each hatch and place each succeeding hatch on new soil. If one has time to properly care for these late hatched chicks and they can be kept where the older fellows will not over-run and crowd them away from the necessities of life they can be made to pay a nice profit.

One should have several springers for sale this month as the price is usually good. In selling the surplus stock do not aim to sell the best. They are the ones that you will need. Sell those which do not come up to your ideal of good pullets and cockerels and keep the better ones for your own use. The early pullets will lay early and those husky young males will attract buyers who need breeders if you are raising pure-breds—and if you are not you ought to be. Many of the old hens can be marketed to an advantage at this time. The market is usually as good as at any other time in the year and you will probably need the room for growing stock.

### Keep Some of the Old Hens.

Do not make the mistake of selling every old hen on the place for the one-year-old hens often pay a nice profit. In some places the practice of keeping one-half of the yearling hens and replacing the half that is sold with pullets each year. This is a good plan in many respects for it allows close culling and the keeping of the tested breeders. Then the older hens will supply the home table, with some to spare, while the pullets are maturing. It is a poor plan to sell your own needs however. The late hatches will not pay a profit from egg money until the following spring at best, and it is good policy to keep the best. As a breeder you are entitled to the best and should be content with none other.

### Look Out for Lice.

Lice will work their ravages this month if the premises are allowed to go without a thorough cleaning and everything from the brooder to laying house should be cleaned and disinfected unless this has a place in the regular routine of poultry work. A good lice powder used on both the old and young stock at frequent intervals, and clean quarters will prevent loss from this source. Shade should also be provided and if there is no natural shade in the chick runs try to arrange so they may have the use of some growing crop like corn or the orchard. We have found the practice of using colony coops along the edge of the corn field to be a good one, as the chicks do not injure the crop and have the benefit of shade and are enabled to pick up much of their living. The orchard is also a good place and chicks delight to wallow in the loose earth about the berry vines. Fresh water is also essential for the hot days soon cause water to become unfit for use and it is surprising the amount of water that the youngsters will consume.

### Feed Liberally.

Do not stint the feed at this time for although much food may be found on the range the variety is not sufficient and the quantity is not great enough to produce proper growth. Try the open hopper method, using bran as a basis of the ration, and I think you will agree that the method is a profit-payer. A ration of wheat bran and ground corn in equal parts, with one-half part meat scrap and one-half part

ground oats, will give satisfaction. If one has plenty of skim-milk the meat scraps can well be omitted, for it takes the place of the necessary animal food and is much cheaper than the meat. In some localities enough natural animal food can be found by the chicks but unless this is the case the milk or beef scrap cannot well be left from the ration. Too much stress cannot be laid on proper growing of chicks for it is upon this phase of poultry raising that the foundation of success is builded, and a steady, consistent growth from the brooder to maturity means a well-developed flock and one that will bring the best returns.

Indiana.

W. C. SMITH.

### HOW MANY HENS TO A PEN?

It is a matter of importance to determine how many laying hens may be profitably and practically kept in a poultry house. This is more true in a climate where the weather demands a carefully constructed building for winter housing. The opinion is quite generally held that when kept in yards or allowed to roam at will hens do best in flocks of about 40 to 50, and that when confined in winter quarters each laying hen requires about 10 square feet of floor space.

The size of the flock which may be profitably kept in a pen of definite size has been reported by the Maine Experiment Station. The station poultry building contained 15 pens alike in size and arrangement of window space, and gravel, bone, and water dishes. The pens were 10x16 feet, and the entire floor space, 160 square feet, was available, since the walk used by the attendants was elevated above the floor. The tests were made with four lots of 15 pullets each, four lots of 20, four of 25 and three of 30. The breeds selected were Braham and Barred Plymouth Rocks, there being eight lots of the former and seven of the latter. With each breed the lots contained from 15 to 39 individuals. The experimental conditions would give the lots containing 15 pullets 10.6 square feet of floor space each, and lots containing 20 pullets eight square feet each, those containing 25 birds, 6.4 square feet, and those containing 30 fowls 3.5 square feet.

Care was taken to have the individuals in the lots as uniform as possible in form, size and vigor. All the pullets were hatched early in May, with the exception of the one with 15, which was hatched about two weeks earlier. The test began in November and continued for six months. Careful records of the egg production, etc., were kept. The results with the different lots of the same size were found to be quite uniform.

The lots containing 20 hens gave a greater total net profit per lot than did those containing any greater or less number of hens. Lots of 25 hens gave slightly greater net returns than did the 15-hen lots. The lots that had 30 birds each gave very much less net returns than did any others. The average net profit per hen, however, steadily decreased as the number of hens per pen increased, being 80 cents per hen during the six months with the lots of 15, and only 30 cents with the lots of 30. This would indicate that for best results we should allow each hen from eight to ten square feet.

New York.

EARL W. GAGE.

### SUGGESTIONS ON RAISING DUCKS.

Young ducks must have plenty of shade. Where there is no natural shade artificial shade should be provided. They also require dry shelters while young, and careful looking after during the season when showers are frequent, as getting wet before they are full feathered is very detrimental to ducklings. Cleanliness in their quarters is absolutely essential and it is

more difficult to maintain cleanliness with ducks than chickens.

A movable duck park made of fine mesh poultry netting is a great help to the duck raiser. We have one 12x12 feet, made in two parts so it can be easily moved. Frequent moving of the park gives the ducks fresh grass all the time without spoiling the yard. It is not very safe to turn young ducks loose. The little critters go on and on, absorbed in bug hunting and often fail to find their way back home. If there is swimming water near they soon discover it. Turtles are sure to get some of them and they are liable to drown while very young and in their down. Besides we find they grow and fatten better and their meat is more tender when they do not have water to swim in. But plenty of fresh water to drink at all times is an important factor and the water in drinking vessels must be deep enough for them to immerse their heads. A little fine clean sand in drinking water is good for them. A tablespoonful of air-slaked lime to a gallon of water makes a good bowel regulator for ducks.

It is not surprising that ducks grow faster than other fowls. They eat from the long troughs we provide for them until it seems they could not find room for any more; and go to the drinking vessel and then go back to stuffing again. We never leave feed to sour in the troughs as sour food causes bowel trouble.

Indiana.

FRANCES WOOD.

### THE POULTRY MITE.

Everyone knows the gray poultry mite which takes on a distinct reddish cast after the meal of blood. It is commonest in dark, damp, dirty poultry houses where it thrives upon filth, and the best remedies are sunshine ventilation, and cleanliness. The hen house should be so constructed that it can easily be kept clean and that there will be no cracks or crevices in the roosts or elsewhere to furnish hiding places for the mite during the daytime when they are not on the fowls. They feed at night, crawling from fowl to fowl, so that one infested bird may introduce them into the entire flock.

Sunshine is one of the best disinfectants as well as a great foe to the mite, and it should be given access to just as much of the hen house as possible. Regular spraying with kerosene emulsion, strong tobacco solutions, or commercial stock dips will help greatly. Commercial lime-sulphur and miscible oils put on the market in such form that they mix readily with water for use in spraying orchards are also helpful in combating the mite.

Kerosene emulsion properly prepared at home will give as good results as anything which can be purchased. Following are the directions for making it: Dissolve half a pound of laundry soap, or a pound of lye soap, in a gallon of soft water; take the solution off the fire and add two gallons of kerosene before cooling. Mix them thoroughly by churning ten or fifteen minutes and use one part of the emulsion to eight or nine parts of water when ready to apply.

One part boiled lime sulphur made exactly as for orchard spraying may be mixed with eight parts of water, and the commercial stock dips may be used in accordance with printed directions usually furnished with them. Strong tea made by boiling tobacco stems in water gives good results, and whitewashing should not be neglected.

Spray pumps of many different sizes and types will give good results. Bucket pumps, knapsack sprayers, and automatic sprayers will be useful in the garden and orchard as well as in the hen house, although a longer hose or extension rod will be needed in the orchard. A barrel pump or power sprayer may be used with good results if it is already on hand, but is more expensive than the average farm needs for hen house work.—Mo. Col. of Ag.



## Grange.

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

### INTERESTING CHILDREN IN THE GRANGE.

(Continued from last week.)

There are such loads of nice things to do. Commence with the simple things—games, story telling; reward them for punctuality and attendance for a certain number of meetings. These prizes might consist of a song book with easy, singable songs. Then why not start a chorus? Organize a kindergarten band, using simple instruments, such as bells, tambourines, fifes, drums and triangles. Have a musical program. Get them interested in nature study, give books for prizes that will help them in the study. Have guessing contests; have days for the discussing of the upbuilding of character and moral courage and let this work be still more far-reaching by getting them to use their influence to have their little friends read books that are uplifting, noble and inspiring.

Have garden-making talks and offer a prize to the boy who has the best vegetable garden and to the girl who has the nicest flower garden. Have one flower program and plan a flower show for the fall. Have sewing contests and baking exhibits; teach them how to set the table properly and allow them to do this in mites of banquets. Have plays and drills for them. If your Grange has no one to drill them, employ someone who can teach them correctly. This would be far better than having the children drifting around and wishing their folks did not belong to Grange. Then think what this would mean to a lecturer—such a lot of nice things always ready for her programs, and stretch your imagination if you can to what your Grange would grow to be if your children were made a part of the work. By the time they were old enough to become members they would already be patrons, familiar with all the workings of the Grange and you would have leaders in numbers to be called out for every line of work. Not only that, but soon outsiders would be seeing and saying what wonders the Grange is doing for its little folks and asking to join that their children could have these advantages. Let us do some of these things for the little lives that are so impressionable and they will repay us many times for our efforts.—Bernice M. Curtis.

### AMONG THE LIVE GRANGES.

Emma Grange recently held a double shower for two newly-wed couples. This is the seventh time that occasion has arisen to provide a shower for some of the members, but the first time a double shower has been given. The worthy lecturer, Mae Johnson, made the most of the opportunity and had the hall beautifully decorated in wild flowers, white and green predominating in the hall; while the social committee used pink and white in the dining-room. The program consisted of the oratorical contest participated in by Edward Wade, Leita Johnson, Delton Mitchell, Henry Pelton, Della Powers, Harold Nye and James Mahan. The judges were L. A. Parr, J. D. Tolbert and Carl Perry. Because of the merit in all of the essays it was with difficulty they could decide. The prize was awarded Leita Johnson. The contest was interspersed with music by Marjorie Bishop and Eula Johnson. Then followed the program pertaining to the shower. Recitations by Carl Perry, Lee Fisher, and James Mahan, and duet by Nahum and Zoe Barnett. Brothers Cooley and Fisher then escorted the bridal couples, Mr. and Mrs. Howard Bryan and Mr. and Mrs. Ira Faulkner to seats before a bank of flowers where Mae Johnson, in well chosen words, presented the gifts in behalf of the Grange and congratulated them. After examining the presents all were invited to the dining-room to partake of the refreshments

provided by the social committee and to discuss the probability of another shower.

The Chicora Grange served a banquet to their new members Saturday evening, May 13, in their hall, that was fully enjoyed. Over 50 members were in attendance at the close. Dr. Flinn presided as toastmaster. H. Y. Finch responded to "The Farmer," reviewing briefly the creation through the ages up to time of the advent of man. He brought out the thought that all this work had been done with one object of fitting a place for the home of man as the great masterpiece of all creation; and that, as the creator placed man in rural surroundings for his own good, so the farmers' surroundings are best intended to develop what is best in mankind. F. G. Barbee followed with "Our Order," giving the number of members of Chicora Grange as about 60. There are within two miles of the hall at least 300 residents who should be active members of the Grange, and as they come to understand the object of the Grange more fully the Order will increase. The subject given O. C. Flanagan was "Looking Forward." The greatest objective point, in his opinion, for the Grange is co-operation, not only financially but socially, encouraging more direct selling as well as buying, citing an instance where he was offered 85 cents per hundred for No. 1 apples at Pullman and the same day he saw not so good ones selling in Kalamazoo for 45 cents per peck.

## Farmers' Clubs

### Associational Motto:

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

### Associational Sentiment:

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

### MID-SUMMER CLUB ACTIVITIES.

Far too many Farmers' Clubs fail to make any use whatever of the mid-summer season for the advancement of their organization. Quite a number of Clubs take a vacation during the summer months because of the difficulty of securing a good attendance of members during the season of active farm work. While it is true that a good many of the Clubs which do hold summer meetings fail to get a large attendance of men at the regular meetings, at least one mid-summer event can be made of sufficient general interest to bring out a good attendance, even of busy farmers.

This is quite generally accomplished by the summer picnic, which is made a general vacation day for the people of the community, accompanied often by sports which are ever popular. Frequently speakers from a distance are secured for these occasions, but quite often the topics discussed are not of a nature which prove to be either very instructive or entertaining to those who attend.

A suggestion which may add interest to the mid-summer picnic or rally meeting is to have a discussion of the advantages accruing to the farmers of any county from the establishment of an agricultural bureau and the appointment of a county agricultural agent. The state leader in county work, and his assistant and possibly one or more county agents to describe the details of the work which they are carrying on, could be easily secured for such a midsummer rally by the members of any Farmers' Club. If such speaker or speakers were secured and the meeting made the occasion for inviting in not only the members of other Clubs in adjacent territory but the people of adjoining communities generally, much valuable information could be secured with regard to the county agent work which is now being conducted in more than twenty counties of the state. It would also be a good idea to ask one or more farmers from counties where agricultural bureaus are in operation to be present and discuss the advantages which have accrued to the farmers of their localities

through the inauguration of this work.

With liberal and annually increasing appropriations available from the Federal Lever fund, and constantly increasing state funds being devoted to this form of extension work, the people of any county who do not take an interest in this proposition are not living up to their opportunities and will be among the last to receive the benefit of this aid in the betterment of their agriculture.

The county farm bureau and the county agent work is no longer an experiment. Its efficiency has been demonstrated. Within a few years it will be in operation in every county in the state. What better medium than the Farmers' Club can there be for the discussion of the advantages of this work and the starting of a movement looking toward its inauguration in any county which does not now enjoy its advantages.

### CLUB DISCUSSIONS.

**Discuss Bean Situation.**—Members of the Ellington-Almer Farmers' Club enjoyed an uncommon treat at the home of Mr. and Mrs. John McAllister at the May meeting, when W. J. Orr, president of the Michigan Bean Jobbers' Association, gave them a short talk. In introducing him to the company, Mr. McAllister said that Mr. Orr was at one time reputed to be the owner of more beans than any man in the world; that it was a happy circumstance that caused the market to advance sharply at that particular time, enabling Mr. Orr to sell the beans and be left holding the bag—full of money. Mr. Orr complimented the members on their wisdom in forming an association for the promotion of their business interests and said if they would put the same energy into their affairs that the members of the Bean Jobbers' Association do into theirs, that they would astonish themselves and all beholders by the success they would make. He has traveled much abroad, studying the markets and sources of supply in the old world as well as in this country, and gave it as his opinion, based on a thorough knowledge of the conditions of the bean markets of the world, that no farmer need take less than \$3.50 per bushel for good beans during the years of the great war, or for two or three years after its close. The war will doubtless make a great change in the condition in Hungary, he said. Heretofore beans have been raised there as a side issue, planted among the corn, and were all exported. This war will teach the natives there the value of beans for food, and thousands will have become accustomed to their use. He feels, therefore, that most of the beans raised there for years to come will be consumed at home, leaving a better market in America for the Michigan pea bean, acknowledged the best in the world for canning purposes. From an experience of over thirty years as a buyer of beans, Mr. Orr said that certain growers of his acquaintance had for a number of years never brought to him a crop which would "pick" more than two pounds to the bushel. In seeking for a cause he had become assured that it was a question of good seed, planted in good ground that was well prepared. If he were to go about raising beans, he said, he would not hesitate to take the time and trouble to go through fields of ripening beans and from hills showing the greatest vigor, he would pick by hand the best filled pods containing the best rounded beans having the best appearing germs. He would then hand-pick them after they were shelled and throw out all flattened specimens and plant three pecks to the acre in suitable ground, well prepared. Some of the members asked him if he would undertake such a task in case he had 50 acres to plant, and he said most assuredly he would. That it would mean only 37½ bushels of seed and he would feel certain that he would get much higher pay for the time and labor spent than for the plowing and other labor that must be performed. For several years after its organization, the association of jobbers had been looked upon with suspicion, as enemies of the bean growers, but he wanted to assure those present that their meetings are open to growers and anybody who chooses to attend. That through the rules of inspection and trade customs that his association has established, great benefits have been derived by growers as well as dealers and without which the industry could never have attained the vast proportions it now assumes.



## Landseeker's summertime Excursions

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To California only \$72.50 round trip from Chicago, \$70 from St. Louis and \$60 from Missouri River. On sale May 1 to Sept. 30; final limit, Oct. 31. Still lower fares June 9 to 16 and July 23 to 30; final limit, two months. Excursion fares from other points also.

California has a delightful summer climate—cool by the sea and in mountains—right time to see growing crops. In vineyards and orchards one finds delicious grapes, apricots, peaches, figs and Valencia oranges. Berries and melons come early; almonds and pears come later. Harvesting wheat and cutting green fields of alfalfa are other June-July activities. Personally-conducted parties in tourist sleepers enable you to make the journey in comfort and with economy.

Fred Harvey meals and lunches—good eats—low cost. Write me for full details of land seekers' excursions, and especially ask for that "Farmers' Special" picture book.

C. L. Seagraves, General Colonization Agent  
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R. and S. C. R. I. Reds, eggs and breeding stock for sale at reduced prices for bal. of season. Belgian hares very reasonable. O. E. Hawley, Ludington, Mich.

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Eggs \$1 per setting, \$5 per 100. W. China Geese 25 cents each. CLAUDIA BETTS, Hillsdale, Mich.

**RHODE ISLAND WHITES** win at the National Egg Laying contest. Cold weather don't stop them. Eggs \$1.50, 2 settings, \$2.50. H. H. Jump, Jackson, Mich.

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**Ferris Leghorns**—200 Egg Strain—Eggs, chicks, 8 week-old pullets from hens with records up to 264 eggs. Prize winners at all times of the year. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. FERRIS LEGHORN FARM, 934 Union, Grand Rapids, Mich.

**Heavy Winter Layers**—Long, large Leghorns, Wyckoff strain. Eggs \$1.00 per 15, \$3.00 per 50; \$5.00 per 100. H. A. Magoon, R. 3, Ann Arbor, Mich.

### A FINE TIME TO BUY S. C. REDS

Let us sell you a trio (pen) of this year's breeding stock at half the price you pay at other times of the year. A good chance to start with well-bred stock. Hatching eggs ½ price after May 15th. Order chicks now. Remember this, (Satisfaction or your money back.) Babcock & Son, Battle Creek, Mich., R. D. 4.

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**ROSE and S. C. R. I. Red eggs** by mail \$1.50 per 15 or 20c per egg from special pens; \$5 per 100. Hens for sale. JENNIE BUELL, Ann Arbor, R. 3, Mich.

**IMPROVE your poultry.** My Young's strain S. C. White Leghorns great money makers. Strong, vigorous, free-range stock. Baby chicks \$9 per 100. Satisfaction guaranteed. Free catalogue. W. Van Appleton, Holland, Michigan

**S. C. WHITE LEGHORNS**, bred for size, shape, vigor, egg production. 14 years' experience breeding Leghorns. Hatching eggs \$4.50 per 100. Baby Chicks \$10 per 100. A. O. HOWARD, Tecumseh, Mich.

**Tom Barron** S. C. W. Leghorns. Large, vigorous stock. Eggs \$5.00 per 100, \$1.25 per 15, post paid. No Chicks. Bruce W. Brown, Mayville, Mich.

**Buff Wyandotte and Barred Rock Cockerels** \$2.00 each, eggs for hatching \$1.00 per 15. Mrs. R. W. BLACK, Caro, Michigan

**SILVER GOLDEN and WHITE WYANDOTTES**. Eggs from all matings, 1.50 per 15, \$2.50 per 30 until July 1st. C. W. Browning, R. 2, Portland, Mich.

**White Wyandotte** Cock & Cockerels. Eggs \$1, \$2, \$3, per 15, \$4 per 50, \$7 per 100. DAVID RAY, 232 Forest Ave., Ypsilanti, Michigan.

**WHITE WYANDOTTES**, Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock. A. FRANKLIN SMITH, Ann Arbor, Michigan.

**White Wyandotte Eggs Half Price** balance of the EGGADAY POULTRY RANCH, Marshall, Michigan.

**"PREMIER" PARTRIDGE WYANDOTTES** 80% winter layers. Eggs \$2.00 per 15. W. H. BACON, Petersburg, Mich.

**Wanted Thoroughbred B. Minorca Baby Chicks**, "Rose combs." Mrs. S. Wallace, Sandusky, Mich.



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HERD ESTABLISHED IN 1900.  
TROJAN-ERICAS and BLACKBIRDS only.  
Also breeders of Percheron, Hackney and Saddle Horses.  
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**Guernsey Bulls** of service age and calves from choice. Adv. reg. breeding.  
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**AT Farmers' Prices** Registered Guernsey Bull calves from A.R. dams and dams being tested. If interested write for photo, breeding and price. Byers & Barnes, Coldwater, Mich.

**Guernseys**—Bull calves sold, they were beauties, every one pleased, 3 cows to freshen this month, better write now for a good one. J. M. Williams, No. Adams, Mich.

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Containing blood of world champions.  
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ALLEN BROS. PAW PAW, MICH.

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**HOLSTEIN BULLS FOR SALE**  
Four of them from 12 to 17 months old by 31 lb. sire dam's A.R.O. Price \$100.00 to \$150.00. Younger bull calves from \$50.00 up.  
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Whose sires have as high as 31 lbs. of butter behind them. As they are young, will make a low price on them. **BIGELOW'S HOLSTEIN FARMS,** BREEDSVILLE, MICH.

**HOLSTEIN Bull Calf:** Born Nov. 8th. A nice individual, well grown, about evenly marked. His dam and sire's dam have A.R.O. records that average 74 days 24.83 lbs. Milk 563 lbs. W. B. READER, Howell, Mich.

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Herd headed by grandson of King Segis Pontiac, and tuberculin tested annually. A few choice young bulls from dams having official records.  
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**For Sale:** Big Holstein Bull 2 yr. old. Good breeding. Reg. bulls and heifers 10 mos. old.  
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## Duroc Jersey Herd Boars

**Special Offering of High Class Fall Boar Pigs. Breeding and Individuality good enough for breeders who appreciate the best.**

Also some good farmer's boars. This is the best lot of fall pigs we have ever had to offer. A cordial invitation is extended to visit the farm and inspect the stock. If you wish one of the best young Jersey bulls in Michigan we have him for sale. For further particulars, address,

**Brookwater Farm, Swine Dept., Ann Arbor, Mich.**

## Bargains In Registered Holsteins

For The Next 30 Days

5 Heifers for 2, 4, 5, 7, 8 months old for \$500. 3 heifers 12, 20, 24 months old, bred to famous bulls for \$400. Priced separately on same scale.

**A. R. Eastman, Howell, Mich.**

**75 gets Hazel-let grandson of Maplecrest De Kol** Parthena and Pontiac Maid 30.2 lb. Born March 25. Traces to De Kol 2d 17 times. Dam Pontiac Hesperia 2d, a Pontiac Korndyke, Pontiac Cornucopia and Pontiac Burke combination. M. L. McLaughlin, Redford, Mich.

**I Have Holstein Bulls,** Bull Calves and Cows that I offer for sale. I can show breeding, records, individuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

## "TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality, of serviceable age, at moderate prices. Information, pedigrees, etc., on application. McPHERSON FARMS CO., Howell, Michigan.

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

**REG. Holstein-Friesian cows and heifers,** some fresh and some ready to freshen \$125. Reg. bulls \$30 up.  
Frank Staffen, R. 3, Box 38, Howard City, Mich.

**Holsteins:** See my consignment at the Detroit sale, June 8-9. A 31 lb. daughter of a 30 lb. cow, her three daughters and three granddaughters, also, a 27 lb. granddaughter of Pontiac Butter Boy. Hobart W. Fay, Mason, Mich.

## WANTED

Six good men to buy pure bred **HOLSTEIN BULL CALVES.** Good notes on a year's time accepted in payment.  
**GEO. D. CLARKE, VASSAR, MICH.**

**For Sale** My entire herd of high grade Holstein Cows and Heifers. Also one Reg. 3-yr. old Percheron stud colt, or will trade for Reg. Holstein cows. Arthur N. Birkholz, New Buffalo, Mich.

**CHOICE HOLSTEIN BULLS**—all from A.R.O. dams. Entire herd on Semi of test for yearly work. Jr. 2-yr. old just finished year's record of over 15,000 lbs. milk over 1000 lbs. butter record in a mature class. Cherry Creek Stock Farm, M. E. Parmelle, Prop., Billiards, Mich.

**FOR SALE** Reg. Holstein females, Pontiac Korndyke and Hengerveld DeKol Breeding. Price right. 1 to 5 years. John A. Rinke, Warren, Mich.

## 6 Holstein Bulls

Ready for service, at farmers' prices. All have high testing A. R. O. daughters from world Record Sire, nothing better at any price. **LONG BEACH FARM,** Gull Lake, (Kalamazoo Co.) Michigan.

**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.

**Hope Farm Jerseys** **FOR SALE**—3 yearling bulls, 2 bull calves, 2 bull calves, 2 bull calves.  
**GEORGE C. BORCK, Grand Haven, Mich.**

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

**One Jersey Bull READY FOR SERVICE,** and several Heifers and Calves for sale.  
**NOTTEN FARM, GRASS LAKE, MICHIGAN.**

## Grade Jersey Herd For Sale

FORTY COWS

The result of twenty years careful breeding and selection, are now offered for sale. Individual milk records have always been kept and are open for inspection. If interested write for particulars and if possible visit and examine the herd and their record. Delivery will be made at any time desired during the spring or early summer. A few registered Jerseys also for sale. Address Geo. A. True, Armada, Mich.

**The Wildwood Jersey Herd** Majesty Breeding herd now on R. of M. test. No females for sale. Choice young bulls for sale from Dams that are on test for Register of Merit. Write your wants or come and see them before buying.  
**ALVIN BALDEN, Capac, Mich.**

**Hillside Farm Jerseys** A 10 mos. old, solid color bull now offered for sale. Dam is a R. of M. cow with record of 546 lbs. of butter as a 3 yr. old. He is a fine individual. Price right. C. & O. Deake, Ypsilanti, Mich.

**Maple Lane** R. of M. JERSEY HERD offers for sale, and bull calves backed by several generations of R. of M. breed. **IRVIN FOX, Allegan, Michigan.**

**JERSEY BULL CALF FOR SALE**  
Ready for service. Majesty—Raleigh breeding. Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.

**Bargains** in registered Jersey bull calves from high producing dams, write for information. C. S. Bassett, 430 Drexel, Kalamazoo, Mich.

**FOR SALE:** Our herd bull, Jacoba's Fairy Emanon age 4 years, kind, quick and sure. Must be seen to be appreciated. Reason for selling, must change sires. Also two yearling bulls from him. **SMITH - PARKER, R. D. No. 4, Howell, Michigan.**

## BIDWELL SHORTHORNS

**For "Beef and Milk"**  
Registered bulls, Scotch-topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & I. R'y.  
Address G. R. Schroeder Mgr. **BIDWELL STOCK FARM** Box B, Tecumseh, Mich.

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

**DAIRY Bred Shorthorns** of best Bates strains. No more females for sale at any price.  
J. B. Hummel, Mason, Michigan.

**FOR Sale**—12 Reg. Short Horn Bulls by Maxwalton F. Monarch 2nd, a son of Avondale, from 5 to 9 mos. old. **John Schmidt, Reed City, R. No. 5, Michigan**

**Shorthorn Cattle.** Five cows, Ten heifers. Five bull calves; also herd bull for sale. Write. Wm. J. Bell, Rose City, Mich.

## SHORTHORN COWS FOR SALE:

No Bulls at present.  
R. R. Station, Elsie. H. B. PETERS, Carland, Mich.

**Shorthorn AND POLLED DURHAMS FOR SALE.** Have red roan and white. Have over 100 head in herd. C. Carlson, Leroy, 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.

**Two yr. red shorthorn Bulls.** Roan Calf 9 mo. old. **Two Angus Bull calf,** 8 mo. old, not reg. Priced to move quick. **CHASE'S Stock Farm,** Mariette, Mich., R. 1.

**2 Loads feeders and two load yearling steers.** Also 2 can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shantum, Fairfield, Iowa. R-8

**Brown Swiss—One Bull Calf.**  
**ORCHARD LAWN DAIRY, LAWTON, MICH.**

## HOGS.

**Royalton Bred Berkshires.** Male and female pigs October boars and gilts, registered with papers. Satisfaction guaranteed. D. F. Valentine, Supt., Temperance, Mich.

**Berkshire Hogs** Sows bred to farrow in April. Best of breeding. Maple Place Farms C. S. BARTLETT, Prop., Pontiac, Michigan

**Berkshires** of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, R. 2, Bloomingdale, Mich.

## SWIGARTDALE FARM

**BREEDERS OF HOLSTEINS AND BERKSHIRES**  
Stock for sale at all times. Berkshires of unsurpassed quality and breeding, at reasonable prices. A choice bull calf, nicely marked, five months old, sire's dam with record of over 27 pounds. Dam of calf a grand daughter of Hengerveld De Kol. Price \$50.00.

**Swigartdale Farm, Petersburg, Mich.**

**Berkshires,** I have two choice Boars for sale six mos. old, also a nice lot of fall gilts I am just breeding.  
**A. A. PATULLO, R. 4, Deckerville Mich.**

**Boars for Sale** One yearling; two 10 mos.; two 6 mos.; first class specimens.  
**J. H. BANGHART, East Lansing, Mich.**

**DUROC JERSEY BOARS** A choice lot of spring boars not akin. **W. C. TAYLOR, Milan, Michigan**

**Duroc Jerseys**—Fall and spring pigs either sex, from choice sires. **S. C. STAHLMAN, Shepherd, Michigan.**

**DUROC JERSEY** Bred sows and gilts all sold. Booking orders for spring pigs. E. D. Heydenberk, Wayland, Mich.

**DUROC Jerseys**—Fancy fall pigs (either sex). Buff Rock eggs \$1.25 per 15; S. C. W. Leghorn eggs \$1 per 15. John McNeill, R. 4, Station A, Bay City, Mich.

**Duroc Jersey**—Sept. boars ready for service also open Sept. E. H. MORRIS, MONROE, MICH.

**DUROC JERSEYS**—all sold out for the present. Wm. W. Kennedy, Grass Lake, Michigan.

**DUROC JERSEYS**—A few fall boars for sale. **Carey U. Edmonds, Hastings, Michigan.**

**Duroc Jerseys** I have some good last September Boars and gilts. Gilts will be bred for September farrow.  
**H. G. Keesler, R. No. 5, Cassopolis, Michigan**

**DOBSON'S DUROCS** Combine size, quality, breeding. Boars for sale. Pigs at weaning time. Registered Jersey bull. Orlo L. Dobson, Quincy, Mich.

**Heavy Bred Durocs** For Sale, Bred Sows, Spring Pigs. M. A. Bray, Okemos, (Ingham Co.) Mich.

**Duroc Jersey Boars** Ready for service. Big, smooth, long thigh fellows. Grand Champion blood lines. Gilts bred for Sept. farrow. **F. J. DRODT, R. 1, Monroe, Michigan.**

**DUROC JERSEYS,** with quality, fancy fall sows, a few spring boars sired by Principal 4th, 8wks. old. **J. ROBERT HICKS, R. 3, ST. JOHNS, MICH.**

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**O. I. C. Swine**—A nice lot of spring pigs. Write your wants. **Midway View Stock Farm, Holland, Michigan. R. R. No. 5.**

**O. I. C.** October boars weighing 200 lbs. at \$25 each for April shipment.  
**C. J. THOMPSON, Rockford, Michigan.**

**O. I. C. Boars for service.** Gilts bred for May and June farrow. 1 prepay express.  
**G. P. ANDREWS, Dansville, Mich.**

**O. I. C.** Serviceable boars and bred gilts all sold. Booking orders for Spring pigs, \$10.00 each.  
**H. W. MANN, Dansville, Michigan.**

**O. I. C. Swine.** I am booking orders for Spring pigs. One yr. old Holstein bull for sale.  
**Elmer E. Smith, Redford, Mich.**

**O. I. C.** bred gilts all sold, am offering Sept. boars and gilts, large growthy ones, and booking orders for spring pigs. A. J. Barker, R. 1, Belmont, Mich.

**O. I. C's** 50 Mar. and Apr. pigs, pairs and trios no akin, 15 bred gilts to farrow in Aug. 3 Holstein Bulls. Cloverleaf Stock Farm, Monroe, Mich. R. No. 1

**BIG TYPE O. I. C's and Chester Whites.** Special prices on all boars and fall pigs either sex. These are sired by Abo 2nd, this boar sired our unbeaten breeders young herd at every state fair we showed this year, other sires are Wonder Boy, White Hall and Allen, this boar was junior champion at Wis. State Fair last year. Now Mr. Buyer our pigs are all sired from champions, our price is no higher than other breeders and the Express Co. charges just the same for a poor pig as it does for a good one. Get our catalog and see where the good ones are. We are booking for Spring pigs sired by Seth colmaster, the highest priced boar of the breed and five times G. Champion. We Reg. Free and ship C. O. D. Rolling View Stock Farms, Cass City, Mich.

**O. I. C's.** A few bred sows to farrow in April, May and June. I have 20 last fall boars to offer, also gilts. Have them not akin. All good stock.  
**Otto B. Schulze, Nashville, Mich. 1/4 mile west of depot.**

**O. I. C's** Some extra good fall boars; also gilts. Satisfaction guaranteed.  
**A. R. GRAHAM, Flint, Michigan.**

**O. I. C.** Spring pigs, both sex, \$10.00 each at weaning time. Booking orders now. Record of sale. Satisfaction guaranteed. Julian P. Claxton, Flint, Mich. R. 8.

**O. I. C's Strictly Big Type**  
Two Sept. boars, three 1915 July gilts, bred for July farrow, sired by Lengthy Prince, No. 3811, bred to Wonder 4th, No. 3327, he by Wonder 18069, one of the most popular boars of the breed. Have the finest lot of Spring pigs I ever raised. Can furnish in pairs not akin. **NEWMAN'S STOCK FARM, R. 1, Mariette, Mich.**

**O. I. C. September pigs,** both sex. Bred E. B. MILETT, Fowlerville, Michigan.

**O. I. C. SWINE:** If you are interested in you with a choice pair or trio, not akin, or a gilt, due to farrow about September first, write to  
**A. J. GORDEN, R. No. 2, Dorr, Mich.**

**O. I. C. PIGS** for sale, \$10.00 each, registered either sex and good breeding. **JAY. J. NEFFY, PLYMOUTH, MICH.**

**Boars at Half Price**  
We still have a few big boned, big type Poland China boars ready for service, weighing up to 250 lbs. not fat at \$20 & \$25 each. Registered in buyer's name. Also registered black Percheron Stallion 2 years old \$250.00. **J. C. BUTLER, Portland, Mich., Bell Phone.**

**Big Type Poland China** Pairs and trio not akin out of large litters.  
**G. W. HOLTON, Route 11, Kalamazoo Michigan.**

**Big Type Poland Chinas**—Boars of August farrow, booking orders for spring pigs. **A. A. WOOD & SON, Saline, Michigan.**

**FOR SALE** P. C. Sows, "Big Type" bred for Sept. farrow, extra good 7 months boar. March and April pigs. S. C. B. Minors, R. W. Mills, Saline, Mich.

**Poland China Spring Pigs**  
Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big, stretchy, splendid individuals, with best breeding. Pigs from such matings will please you. Get our prices.

**HILLCREST FARM**  
KALAMAZOO, MICH.

**Large Strain P. C.** A few choice fall boars ready for service, and 1 May boar. Gilts for early farrow all sold, a few choice Gilts to farrow in Aug. and Sept., bred to black Wonder and Oakland Equal Jr. H. O. Swartz, Schoolcraft, Mich.

**Large Type P. C.** Gilts and sows. Bred for Mar. and April farrow. Sired by Big Des Moines, Big Knox Jr., and Giant Defender. Bred to Big Knox Jr. Smooth Wonder 3 and Big Junior, four great boars in state. Come or write. W. E. Livingston, Farm, Mich.

**BIG Type Poland Chinas,** Sired by Big Type King, our 1000 lb. boar. Spring pigs, sired by big type King, Fessmeyer A. Wonder Jr., and Mow's Big Bone. W. Brewbaker & Sons, Elsie, Michigan.

**For Sale Poland Chinas** either sex, all ages. Something good at a low price.  
**P. D. Long, R. F. D. No. 8, Grand Rapids, Mich.**

**Heavy Bred** Poland Chinas. Fall and Summer Pigs. Sows Bred. Eggs from big Barred Rocks \$1.00 for 15. **ROBERT NEVE, Pierson, Michigan.**

**Large Type P. C. Sows & Gilts** all sold. Have 3 extra good spring boars. Sired by Big Defender. **W. J. HAGELSHAW, Augusta, Michigan.**

**Large Yorkshires** August September pigs. 2 spring boars. Prices reasonable. **W. C. COOK, Route No. 1, ADA, MICHIGAN.**

**GROWTHY THE DISEASE PROLIFIC "MULEFOOT" RESIST- PROFITABLE HOG ING**

**WE ARE NOW BOOKING ORDERS FOR SPRING PIGS**

**THE CAHILL FARMS**  
KALAMAZOO - - - - MICHIGAN

**HAMPSHIRE SWINE** spring pigs registered. John W. Snyder, R. 4, St. Johns, Mich.

**Hampshire Swine.** Bred Sows and gilts for August and September farrows. Spring pigs, both



## Veterinary.

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

**Heaves.**—Is there any real cure for heaves? I have a valuable horse that is wind-broken? E. R. S., Port Hope, Mich.—Chronic heaves is very often incurable; however, you will obtain fairly good results by giving your horse any of the commercial heave remedies that are regularly advertised in this paper. Furthermore, I would suggest that you feed no clover, or dusty, musty, badly cured fodder and only a limited quantity of bulky food. Grain and roots and a small quantity of well-cured timothy is the best food for winter and grain and grass the best summer feed. A broken-winded horse should be kept in a clean and well-ventilated stable that is well supplied with fresh air; besides, they should have daily exercise.

**Bloat—Foreign Body in Stomach.**—I would like to know where to tap a cow for bloat and would it benefit or injure a cow that is bloated to move them? When a cow happens to swallow a nail, is it possible to remove it from the stomach by a surgical operation? A. J. B., Ionia, Mich.—High up on the left flank where the bloat is most prominent is the proper place to open into paunch by means of a trocar and canula, or knife. Every dairyman should own a trocar and canula, because it does not require skill to use it and it saves the lives of many cattle. It is not considered good practice to attempt to remove a nail or foreign body from the stomach of cattle.

**Limpas—Out of Condition.**—My ten-year-old horse has rather a poor appetite and is not in very good working condition. He tires easily and the roof of his mouth is swollen. I have been feeding corn fodder, oat hay and millet. We have no Vet. in this locality, but one visits here monthly. N. B., Grass Range, Montana.—I do not believe that a swollen gum prevents him from eating; however, the grinder teeth may perhaps require floating. You should change his feed. Give him 1/2 dr. of fluid extract nux vomica, 1/2 oz. tincture cinchona (comp.), and 1/2 oz. Fowler's solution at a dose three times a day.

**Roarer.**—I have three-year-old mare that blows a good deal when exerted, but has a good appetite and does not appear to be sick. Is peach butter a proper remedy for heaves? H. F. S., Danville, Mich.—Rub her throat with camphorated oil twice a day and avoid feeding her too much bulky food. Peach butter will neither do a broken-winded horse any good or any harm.

**Contracted Hoof.**—I have a three-year-old filly that hurt her shoulder about a year ago; has seemingly recovered from his shoulder trouble, but now has contracted hoof and when traveling on rough uneven ground he flinches. H. L., Hamilton, Mich.—Apply a wide-webbed shoe and rub on some wool fat once a day.

**Mare Passes Water Frequently.**—I have a mare that I am inclined to believe has kidney trouble for she passes urine almost every 30 minutes; she is due to foal the third of June. What had I better give her? G. E., Waukegan, Mich.—Give her 1/2 dr. of ground nux vomica and 1/2 dr. of potassium iodide at a dose in feed twice a day. Medical treatment in this sort of a case is not very necessary.

**Loss of Appetite.**—I have a horse that I bought in Chicago ten days ago, since he reached home his appetite has not been very good. M. F. B., Murky, Mich.—Give him a dessertspoonful of tincture gentian, a dessertspoonful of tincture cinchona and a teaspoonful of Fowler's solution at a dose three times a day.

**Weakness.**—We have a Holstein heifer two and a half years old that had a calf two months ago. She is in fair flesh and giving a good mess of milk, is running on pasture during the day and stabled at night. In the morning I find her covered with perspiration. She stands in the stable with 14 other cattle, but this one, while breathing, makes a noise. E. W. V., Ewart, Mich.—Apply to throat equal parts of turpentine, aqua ammonia and olive oil three times a week. Give her 20 grs. of quinine at a dose two or three times a day. If she does not recover and continues to have fever and show weakness, have her tested with tuberculin to ascertain if she suffers from tuberculosis. Open windows and doors to stable.

**Paralysis.**—We have a calf three months old that has lost the use of his legs; the front legs seem to be most affected, but his appetite is good. We have been feeding part new and part separator milk. We are inclined to believe that this sickness was brought on by exposure to cold and wet, leav-

ing it out all night. G. C., Decatur, Mich.—Keep your calf warm and comfortable, be sure that the bowels are kept open and give it 15 drops fluid extract of nux vomica, 15 grs. of potassium iodide and 15 drops of dilute hydrochloric acid at a dose three times a day. Rub foreshoulders and legs with alcohol twice a day.

**Bruised Udder.**—I have an eight-year-old cow that came fresh two months ago and one quarter of udder is swelled considerable and the adjoining quarter is also affected. The swelled part is sore, it hurts her to walk or be milked. Have applied camphor and lard. E. J., Delton, Mich.—Apply one part fluid extract phytolacca, one part fluid extract belladonna and nine parts lanolin to udder twice a day. Give her a dessertspoonful of fluid extract phytolacca at a dose in feed three times a day.

**Piles.**—I have 46 pigs about nine or ten weeks old. They are apparently doing fine, but suddenly become afflicted with protruding piles. I am feeding tankage in a self-feeder, shelled corn and for slop two parts white middlings, three parts ground oats and they have unlimited pasture of clover, timothy and June grass. One thing I noticed all afflicted pigs so far have come from one litter. Is it the feed, or is it apt to be inherited, or is it contagious and can it be cured? S. S., Jasper, Mich.—You are feeding your pigs intelligently. Those that have piles inherit a predisposition to this ailment. Dissolve 4 ozs. of powdered alum, 3 ozs. of acetate of lead in a gallon of clean water and apply to protruding parts twice a day. Costiveness is an exciting cause of piles and usually the veins in this portion of body are dilated.

**Poor Appetite.**—I have a pig about one year old that will drink some milk, but refuses to eat solid food and I am inclined to believe it has a light attack of thumps. J. R., Prescott, Mich.—Feed your pigs, altogether, on slop made of milk and ground grain. Give a teaspoonful of ground gentian with each feed.

**Grub in the Head.**—Thinking perhaps that my experience in the treatment of my sheep for grub in the head might be of some future benefit to the readers of your paper, I might say that 17 years ago I started to winter 86 ewes. They all did fairly well until the first of February; then they began to die and by the fifth of March I had only 46 left. I consulted an old doctor, who told me to syringe one-quarter of an ounce of turpentine up the nostrils of each sheep, but before doing so to lay the sheep on its back, keep the mouth open and let the turpentine run up into the head. The nozzle of syringe should be about five inches long and each treatment should require about five minutes time or longer, and mouth should be kept open until she is placed on her feet, then the turpentine will run out of her nose. Out of 46 that I treated, every one of them lived. My boys treated one successfully which I thought was past recovery, but this one got well. E. F. C., Woodlawn, Mich.—This is altogether too heroic treatment. Doubtless turpentine, if it reached the grub or grubs nestled in the nasal chambers of head, would kill them; but think of the harmful effect it must have upon the sensitive, delicate membranes of the air passages. You will obtain equally good results by blowing Scotch snuff up into the head, causing violent sneezing; besides, it will do the sheep no harm. Furthermore, injecting turpentine into the head of animals would be considered malpractice and cruelty to animals, and perhaps be inviting prosecution for above offense.—Ed.

**Chronic Indigestion—Looseness of Bowels.**—I have an old mare that is troubled with looseness of the bowels which has been going on for a considerable period of time and I would like to know if she can be cured. L. P. L., Custer, Mich.—Her teeth may need some attention. Mix together equal parts powdered catechu, ginger, gentian and charcoal; give her a tablespoonful or two at a dose in feed two or three times a day. Doubtless you can regulate her bowel movements by changing her feed, or perhaps feeding her ground grain and avoid watering her too soon after feeding grain; besides, she should not be driven fast.

**Chronic Cough—Eczema.**—Have a valuable horse that has been troubled for the past three months with cough and when drinking water a portion of it returns through nostrils which washes out some mucus. I have given him pine tar twice a day for six weeks and I have also fed some ginger, licorice and muriate of ammonia three times a day; but he does not improve much. This horse has been fed oat straw twice a day, hay at noon and two or three quarts of oats at a feed twice daily. I also have a five-year-old horse which I bought last summer that has been worked very hard, but he has gained in flesh, does not appear to be

sick, but is troubled with a skin eruption causing considerable itchiness. H. D., Columbus, Mich.—Apply equal parts tincture iodine, camphorated oil to throat every day or two. Discontinue feeding oat straw, also admit more fresh air into stable and keep it clean. Give 1/2 dr. fluid extract lobelia, 1/2 dr. fluid extract belladonna and two doses of Fowler's solution at a dose three times a day.

**Diarrhoea.**—I would like to know how to stop the diarrhoea on my mare. I have given her raw linseed oil, castor oil, brown flour and rolled crackers, but it has only a temporary effect in controlling her bowel movements. Sometime ago I had her teeth fixed and she appears to grind food all right. C. A. P., Atlanta, Mich.—Careful feeding and watering of an animal of this kind and if exercised at all, it should be not faster than a walk; then give her a teaspoonful of powdered sulphate iron, a dessertspoonful of powdered catechu and a tablespoonful of ground gentian in feed three times a day.

**Sores on Back.**—I have a nine-year-old horse that has several sores on back which are about the size of the end of my finger, but the horse does not appear to be sick. O. J., Freeland, Mich.—Apply one part iodine and nine parts vaseline to sores every day or two and give a dessertspoonful of Donovan's solution at a dose two or three times a day.

**Warbles.**—Several of my cattle are troubled with grubs in back and some of the grubs seem to have eaten holes through skin. How shall I treat them? C. H. F., Doster, Mich.—Enlarge opening in skin with a clean pen knife, squeeze out and kill grub, then apply tincture of iodine occasionally to the sores.

**Pigs Born without Hair.**—I would like to know the cause of my sows giving birth to pigs without hair. Mr. A., Wayne County.—Feeding an unbalanced ration to sows and lack of exercise is perhaps the most common cause.

**Roup.**—I found one of my hens with both eyes gone and matter running from the socket and in looking the balance of my flock over found another one becoming affected in similar manner. There is a swelling around the eyes and matter runs from this bunch. N. S., Algonac, Mich.—Your fowls suffer from the ocular type of roup and the treatment consists in correcting any bad sanitation or hygiene which may have been acting as a predisposing cause. Your hen house should be well ventilated, kept dry and free from drafts; furthermore, it should be cleaned and disinfected daily. Every badly diseased bird should be killed and cremated. Wash out the nasal passage with a 20 per cent solution of common baking soda, using a small syringe as this fluid must be forced through the nasal passage into the mouth. Follow this with an injection of peroxide of hydrogen. Mix 1 dr. of oil of thyme in 2 ozs. of oil of petrol and inject some of this into the inflamed parts. With the thumb and finger the eyelids should be pressed open and the mucus wiped out with absorbent cotton. You will obtain the best results by using disinfectants, and paying strict attention to the feeding and management of your poultry.

**Sore Back.**—I have a cow that had a small scab appear on her back and the sore has gradually spread until it is now of considerable size. I thought at first it was mange, but I find mange remedy does not seem to affect it. About a year ago one of my neighbor's cows died and she had a similar ailment. O. A. R., Thompsonville, Mich.—You will obtain fairly good results by applying tincture of iodine every day or two; also give cow a teaspoonful of sulphur at a dose in feed twice a day.

**Indigestion—Inflamed Knee.**—I purchased a horse about a month ago which was in a run-down condition; soon after I had him the knee swelled and was soon followed by soreness and lameness; rest seems to make him better. I might add that I noticed a small wound on knee. W. H., Frankfort, Mich.—Dissolve 1 dr. permanganate of potash in one pint of water and apply to wound on knee twice a day. Give him 1 dr. ground nux vomica, 1 dr. of powdered nitrate of potash and 2 drs. of ground gentian at a dose in feed twice a day. If the leg is sore and swollen, apply spirits of camphor twice a day.

**Weak Back.**—I have a two-year-old filly whose back is weak. When backing or turning short she wabbles. Have doctored her for kidney trouble, but what I have done fails to help her. R. L. B., Oak Grove, Mich.—Give your filly 30 grs. of ground nux vomica, 60 grs. of acetate of potash and 30 grs. of powdered sulphate iron at a dose in feed three times a day. Rub her back with alcohol twice a day. Her bowels should be kept open and this is best done by feeding her clover, roots and adding some molasses to her feed.

## Dr. Hess Dip and Disinfectant



### Kills Disease Germs Destroys Foul Odors

Nothing better for disinfecting stables, barns, sinks, troughs, garbage cans, outhouses, etc. Good alike for home and stable.

For scab, mange, hog lice, ticks on sheep, fleas on dogs, and all parasitic skin diseases of horses, cattle, sheep, dogs, hogs and poultry.

Pint bottles, quart, half-gallon and gallon cans and barrels. One gallon can, \$1.00 (except in Canada and far West). Smaller packages as low as 25c.

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Doesn't gum, color or blister. Makes stock comfortable. At your local dealer's.

DR. HESS & CLARK, Ashland, Ohio

**Warranted to give satisfaction.**

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A safe, speedy and positive cure for

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As a **HUMAN REMEDY** for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

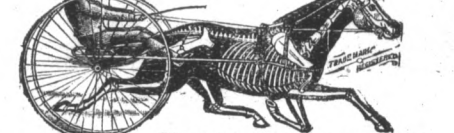
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**NEWTON'S** Heave, Cough, Distemper and Indigestion Cure.

Some cases cured by 1st or 2nd \$1 can. Three cans are guaranteed to cure heaves or money refunded.



The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 34 years sale and veterinary use.

**CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND CONDITIONER AND WORM EXPELLER**

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post.

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**Having Lost Two** of my largest horse barns by fire May 6, I offer for sale two well bred and fine Recorded Percheron Stallions two years old last fall. At prices not much above that of work horses. These colts are sound and right and will make fair sized horses. Both are sired by Plaisante Horace No. 52787, now owned by the State, and kept at the Jackson Prison Farms. EDSON WOODMAN, FAW FAW, MICHIGAN.

**Registered Percherons**  
Brood mares, fillies and young stallions priced to sell. Inspection invited.  
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MID-YEAR MODEL  
73 NEW IDEAS

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SIX

\$1325 F. O. B. RACINE  
WITH 26 EXTRA FEATURES

## 2000 for New York

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The first Mid-Year Mitchells arrived in New York about April 15.

This model brought out 73 new attractions. It combined all the best ideas from 257 new-season designs exhibited at the January Shows.

It had 26 extra features which other cars omit. No car on the market, we think, has more than four of them.

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The first question asked when men see this car is, "How can Mitchell do it?"

How can we give such size, power and luxury for \$1325? How can we afford to combine in one car all the new details and touches? How can we add these 26 costly extras without any added price?

Our answer is, John W. Bate.

#### Due to Efficiency

John W. Bate, the great efficiency engineer, has completed here a model automobile plant. It covers

45 acres, and every building is of his designing.

He has equipped these buildings with 2092 up-to-date machines. The total investment is nearly \$5,000,000.

We build in this plant 98 per cent of the car. We build it for half what it would have cost under old-time methods. All of our extras—things you don't find in other cars—are paid for from these savings.

#### John W. Bate's Ideas

Mr. Bate also applied his efficiency methods to the Mitchell car itself. He stands for simplicity, lightness and strength. And our last two models show the final result.

Castings are almost eliminated. They are heavy and brittle. Instead, the New Mitchell has 440 drop forgings and steel stampings. They are tough and stanch and light.

The car has a wealth of Chrome-Vanadium steel. It has a new-type steering gear fitted with ball bearings. It has the "Easy gear-shift."

**\$1325 F. o. b. Racine**  
**For 5-Passenger Touring Car or 3-Passenger Roadster**  
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High-speed economical Six—48 horsepower—127-inch wheelbase. Complete equipment including 26 extra features.

These make it the easiest car to drive.

It is the only car with Bate cantilever springs, which make country roads like pavement. There was never a car so comfortable.

It has a power tire pump, reversible headlights, dashboard engine primer—all the known conveniences.

It has a 22-coat body finish—ten-inch seat springs—soft-finished leather upholstery.

Mr. Bate once said, "Never shall my name be connected with this car until it gives a matchless value." Now that time has come.

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The engineers' ambition used to be to build a five-year car. Now Mr. Bate has aimed at a lifetime car.

We know of six Mitchell cars which have averaged 164,372 miles each, or over 30 years of ordinary service. One Mitchell has 218,734 miles to its credit.

In the past two years many great engineers have selected the Mitchell for their personal car. Your dealer has a list of 37—men of national fame—who have done this.

So you will find here the handsomest, most complete car on exhibit. You will find a mechanical masterpiece. Behind this car is an 82-year-old concern, which has spent 13 years to develop a car like this.

If you don't know the nearest Mitchell dealer, ask us his name.

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