

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXLIV. No. 21
Whole Number 3834

DETROIT, MICH., SATURDAY, MAY 22, 1915.

50 CENTS A YEAR.
\$2 FOR 5 YEARS.



Jos. Bertrand.

A Successful Historical Pageant

By HELEN G. ROTH

Since a wide interest is now being taken in Rural Recreation the following article which describes in detail a Historical Pageant given at Bertrand, Mich., as a part of a "Safe and Sane" program for the celebration of Independence Day, will be eagerly read. The experience of this Social Center Club will furnish suggestions that can be successfully adopted by most rural societies.



Bertrand's Guide.

THE executive committee of the Bertrand Social Center Club were discussing plans for the Fourth of July celebration. There were to be races and contests, the boys had challenged the married men to a game of base ball, and someone had undertaken to raise a fund for a "band," and of course there was no question about the picnic dinner. The location of refreshment stands was a subject for lively discussion when someone suggested a "play."

"Oh, yes, do let's give a play. I want to be in it," was the approving response.

"With all our natural beauty of scenery on the banks of the St. Joseph river, we ought to be able to put on a very attractive out-door play," contributed one of the members. She was immediately made chairman of a committee to take charge of that part of the celebration, and attention returned to the subject of ice cream stands.

After much consideration and research the chairman conceived the idea of giving an historical pageant. Now, Bertrand is rich in historical lore, but as is often the case, it had not been considered of enough importance by the older inhabitants to pass on to their children, and the newcomers knew nothing whatever about it. Consequently interest and pride in local history had to be aroused before the idea of a pageant could be presented.

So it came about that a regular monthly meeting of the club was given over to the discussion of Bertrand's early history. Judge Cooledge, of Niles, and Judge Howard, of South Bend, Indiana, both authorities on subjects of historical interest, gave valuable talks, tracing the history of the locality from the days of Spanish possession, two hundred years ago, to the decline of Bertrand's prosperity in 1848. Miss Machin, who had lived in Bertrand as a child, and later taught the village school, recalled the early days in a paper full of spirited reminiscences. Relics and photographs loaned by the Northern Indiana Historical Society were on exhibit, adding much to the interest of the occasion.

While in the early forties Bertrand was a thriving French town of one thousand inhabitants, had seven

stores, whose largest trade was in dry goods; several taverns, a distillery, smithy and other places of business, it had slowly but surely sunk into decay, until at the beginning of the twentieth century there was nothing left but a few scattering ruins and houses near the river. Older and larger than South Bend, or Niles, Bertrand's business life was killed by the greed of a company of eastern capitalists; and also by the building of railroads through the two neighboring towns, thus leaving the station on the old stage route between Chicago and Detroit, a thing of the past. St. Mary's Academy, too, founded at Bertrand,

was eventually moved up the river to its present location near the University of Notre Dame.

So the old town died a gradual and a peaceful death. With the exception of three or four, its broad streets intersecting the main highway were swallowed up in the fields which have obliterated all traces of the original city blocks. The ruins of the old brick church in the cemetery, long a place of interest to the pilgrim historian, were removed within the past five years. Here and there are small houses on five to ten acre tracts. Beyond is the little red brick school house, and from the hill may be seen the out-

lying homes of the prosperous farmers of the region. The main road leads to the St. Joseph river, which winds in and out, around great curves and small ones, its vine-covered banks resplendent with the alternating bloom of dogwood, sweet brier and flaming sumach.

Situated midway between South Bend and Niles, Bertrand became a popular resort for picnickers, who found its beaties irresistible and in about 1909 or 1910 city people began to build country homes in the vicinity. Most of the newcomers are commuters, working in South Bend, setting out their few acres to fruit and gardens and sending their children to the Bertrand school.

To meet the demands of this growing community, the Bertrand Social Center Club was organized in October, 1913, from the members of which were recruited the actors of the pageant. The chairman of the committee directed the performance, and no help was obtained from outside. While the plan and general outline was the work of the director, there was no play written, nothing cut and dried to be rigidly adhered to. The scenes as finally presented were the crystallization of the composite ideas of director and actors; the entire performance being the spontaneous creation of the people of the community. Young men came to rehearse after a day's hard work behind the cultivator or in the factory. The women and girls had been just as busy, but there were no complaints. Each one was eager to do his part to make the whole a tremendous success.

In order to realize some financial profit, souvenir booklets were prepared for sale. These contained enough advertising contributed by Niles and South Bend merchants to pay for the printing. Besides notes of the pageant, they contained a brief history of Bertrand, the story of the Social Center Club, advantages of being a Bertrand citizen, program of the day, and cuts of the old buildings, with a portrait of Joseph Bertrand, the founder, on the cover.

The item of expense connected with the pageant was so small that it deserves mention. The bill for grease paint for "make-up" was the only one turned in to the club treasurer. Two

(Continued on page 599).



Publishing the Treaty of 1833.—Act. I.



Indians Leaving for Kansas Reservation.—Act. II.



Society of the Early Days.—Act III.

The Michigan Farmer

Established 1843. Copyright 1915.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 455.

NEW YORK OFFICE—41 Park Row
CHICAGO OFFICE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
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TERMS OF SUBSCRIPTION:

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

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.

RATES OF ADVERTISING:

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) per insertion. No ad't in inserted for less than \$1.20 each insertion. No objectionable advertisements inserted at any price.

Mem Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as second class matter at the Detroit, Michigan, postoffice.

DETROIT, MAY 22, 1915.

CURRENT COMMENT.

On another page of this issue appears an article descriptive of a historical pageant successfully given by local talent at Bertrand, Michigan, as a part of an Independence Day program. In recent years there has been general criticism of the manner in which we celebrate our national birthday. The practices have grown to be so threatening to life and property that instead of being a holiday to look forward to, a very large number of the citizens of our country breathe a sigh of relief when the day is over. This criticism and dissatisfaction have given rise to the discussion and suggestion of celebrating in a "safe and sane" manner. It is probable that the pageant above referred to meets the new idea admirably. Here is a type of entertainment that not only has educational value and creates an interest that will inspire patriotism and loyalty, but it also gives the community an opportunity to discover and realize the possibilities of local talent. Such a program would displace much of the objectionable in the old method of celebrating and it would direct the minds of the younger generation along channels where as much or even greater ingenuity will be asked and required of them as in burning explosives. It happened that the Social Center Club of Bertrand found itself in possession of local historical matter well adapted to this type of entertainment. It is probable that most communities would find upon careful research incidents of similar merit that would offer considerable dramatic possibilities. However, if nothing of importance can be found in local history, events in our state or national history could be used instead. These, well worked out, would certainly stimulate patriotic interest and thereby perform the very purpose we hope to gain through the celebration of this day. Such an entertainment coupled with a program of athletic contests, base ball games and fireworks in the evening, would give the day a new significance to our youth and render it a more enjoyable one to all American people.

Among the new laws passed by the Legislature which recently adjourned, as noted in our last issue, was one extending to the boards of supervisors of the various counties authority to appropriate money for the payment of a bounty on rats not to exceed five cents per head. This law is not likely to be acted upon by boards of supervisors unless there should be a definite expression of sentiment in favor of such action

on the part of the people who elected them.

This law is one which is worthy of the serious consideration of the citizens of any county, and particularly of the farmers. Much has been said and written regarding the economic waste caused by the ravages of these loathsome rodents. This waste is said to run well into the millions, but we cannot give accurate statistics regarding it, nor is this necessary to make the average farmer appreciate the extent of such loss.

The menace of the rat from a sanitary standpoint is even greater, particularly adjacent to seaports where its agency in the spread of dangerous communicable diseases has long been recognized. The same charge against the rat is probably equally well founded in the interior of the country. The rat is undoubtedly an active agent in the spread of communicable stock diseases, such as hog cholera, and may readily be the medium through which other germ diseases are spread from points of infection.

Without question the extent of this possible bounty is but a fraction of the economic benefit which would result in the destruction of the rats on which such bounty was paid, and if the payment of a bounty of this kind would bring about the general destruction of the pest, it would be a wise expenditure from the standpoint of both producers and consumers. The question of making the law operative in any county is at least worthy of the thoughtful attention of the farmers of every agricultural county in Michigan and a discussion of the proposition by farmers' organizations would be both desirable and profitable, to the end that public sentiment on the question may be crystallized.

Indiana has recently conducted a series of road schools in rural districts under the supervision of the College of Agriculture. So far as we have been able to follow the work done at these schools, it has been conducted along broad general lines relating to the best methods of building permanent highways. The idea suggests itself that an effort of a similar nature in our own state designed to teach local highway officers the best method of caring for earth roads and disseminating similar knowledge among the farmers of various sections would be most desirable. There has undoubtedly been a marked improvement in the character of the work done in permanent road construction, particularly in counties where the county road system has been adopted in recent years. This work is not, however, confined to such localities. The article appearing in another column of this issue relating to the work which is being done in several townships of Hillsdale county in the construction of permanent roads shows what is being done in progressive localities not under the county system.

There is, however, great need of improvement in methods of caring for earth roads and those partially improved under the road district plan. We have in mind a stretch of very good road, several miles of which were gravelled but a few years ago, which is rough and comparatively unserviceable to what it might have been made with a few hours' work with a King drag or light grader used at the proper time this spring. This is but typical of thousands of miles of similar road, to say nothing of the clay roads in the state which might be put in excellent condition by proper methods of care each spring.

True, some work has been done along this line by our state highway department in the education of local highway officers, but highway officers are changing each year, and the only way to secure generally good results is the betterment of the earth roads through the medium of an educated

public sentiment. For this reason it is to be hoped that a modified plan of road schools having this object in view may be adopted in our own state in the not distant future.

Substitute Forage Crops.

Considerable has been published in our columns lately with regard to forage crops which may be substituted for clover in the crop rotation where there has been a failure in securing a satisfactory clover seeding. The use of such substitute crops is sometimes a necessity upon very many farms, but such use of crops other than legumes should be limited to cases of like emergency. Because they can be grown with a fair degree of satisfaction where clover has failed, this is no good reason why clover should be abandoned for these substitute crops in future years.

On farms where there is repeated difficulty in getting satisfactory stands of clover, steps should be taken to put the land in condition to again grow the clover satisfactorily. This is ordinarily a more simple matter than is realized by the average farmer. Quite generally failures to get clover seedings are attributed to dry summers or unfavorable winters, when as a matter of fact, in probably a majority of cases, the failure is due rather to the fact that the soil has gotten into an unfavorable condition to make a fit home for the bacteria peculiar to the plant and necessary to its successful growth. The application of lime and the improvement of the physical condition of the soil by the use of green manure crops will overcome this condition, and this should be the aim of every farmer who has had difficulty in growing clover, rather than the continued use of substitute crops.

Just about ten years ago the first cow-testing association was organized in the United States was organized in one of Michigan's western counties. From that little beginning, cow-testing associations have multiplied until last year there were 168 of these organizations in the country. Several Michigan communities have undertaken this work with varying success. In a few communities where the work has been carried on for a year or so, interest has languished largely because of the difficulties attending the getting of a competent tester, but in the communities where this work has been conducted for a number of years, the results have been so highly beneficial as to leave no room for doubt that there should be a cow-testing association in every dairy farming community in the state of Michigan.

Through this medium the dairy farmers will not only be able to learn which are their best producing cows, but as well which cows are simply boarders which should be discarded as unprofitable. Very much information can be gathered through the testing work relating to the efficiency of dairy rations as well. This is an item of greater importance than is appreciated by many dairy farmers who have not given the propositions involved the very closest study.

In a recent issue appeared the summary of a year's work in one of the newer Michigan cow-testing associations. In an early issue we will publish a comment on the work of the first association to be organized, in the hope of stimulating greater interest among Michigan dairy farmers in cow-testing work. Unfortunately the interest in the promotion of this work has in recent years devolved very largely upon breeders of pure-bred cattle who desired to make semi-official tests of individuals in their herds. There is, however, just as much reason why the dairy farmer who keeps common cows should know what these cows are doing for him as there is why the breeder of pure-breds should gather the same data relating to the individuals

of his herd, and we sincerely hope that the time may come, and at no distant date, when cow-testing work may be more generally carried on in this state where it was first tried out in America.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The point of greatest activity during the past week has been along the battlefield from Arras in northern France through to the Belgian coast. Here an offensive movement by the Belgian and English forces met with success, and German trenches of considerable length were captured. But the opposition was stubborn and the casualty list is said to be very high. Farther to the east artillery duels are reported but no changes in positions of importance have been made. In the eastern theatre the Austrian and German forces appear to have succeeded in driving the Russians from Hungary with heavy losses. However, at present the Czar's forces have checked the Teutonic drive and have confidence of maintaining their present stand in Galicia. Battles are now being fought in the western and southern parts of that province. Toward the north little of importance has taken place according to reports. In the attack on the Dardanelles and the Bosphorus the Allied forces appear to be having the advantage. The armies landed have been driving back the Turks and the fleets are making some headway against the forts along the water-course. The Russian fleet is doing effective work at the Black Sea end of the channel.

Italy appears to be war mad. Last week when Premier Salandra, who is in favor of declaring war against Austria, handed in his resignation there occurred in the important cities of Italy many war riots. King Immanuel, however, has refused to accept the resignation and war between that country and Austria appears more probable now than at any time since the European war began.

There is a revolt on at Lisbon, Portugal, where the reactionary party commanding three thousand troops is preparing to storm the city. Already a number of persons have been killed or wounded and property belonging to loyalists has been pillaged. The reactionists declare they are going to restore the republic to the republicans.

National.

President Wilson will review the Atlantic fleet in New York harbor on Tuesday of this week.

There has been a great deal of uncertainty regarding the probable outcome of relations between Washington and Berlin, due to the sinking of the Lusitania and the American steamship Gulfight by German submarines. President Wilson's note to Germany appears to have the united support of the American press, and while it does not bind this nation to go to war in case Germany refuses to agree to the conditions of the note, the language is very firm and will undoubtedly be considered with great respect on the part of Germany. There is a belief that a compromise may be affected whereby Germany will insure safety of passengers on the high seas, while the United States will prohibit carrying of explosives on passenger ships leaving this country.

Notwithstanding the fact that business men have been giving much attention to the relations between Washington and Berlin and the probable outcome thereof, business conditions in this country last week showed the strong position the country now occupies. If we may consider the stock market as a gauge of other business, this country has by its increasing financial strength discounted every opposition to its advancement that has arisen during the present crisis, save that of entering into war itself, and it is believed by financiers that even such a state of affairs can be discounted to a very large degree. More gold is being imported to balance exchange between this country and Europe and the money market remains undisturbed. Added to this is the promising condition of American farm crops.

On May 12 the conductors and motormen of Detroit United Railways walked out on strike because one of their number had been discharged without sufficient cause, so they claimed. The following day an agreement was reached and service restored.

Judge James Phelan, who has been prominent as judge of the recorder's court of Detroit since 1899, died at his home in this city last Saturday morning. His body lay in state in the City Hall over Sunday and was viewed by about 25,000 people.

Mrs. James Schermerhorn, wife of the publisher of the Detroit Times, died suddenly at her home in Detroit Sunday morning. Besides her husband she is survived by four children.

Thick vs. Thin Planting

Last year on the Michigan School for the Deaf farm, we raised some very good corn. We drilled in 35 acres of corn with a check row planter. Twenty acres of this was used to fill the two large silos which hold about 300 tons, the remaining 15 acres was husked and put into the crib.

Last Year's Results.

Twenty-six acres of this corn was drilled in rows three feet six inches apart and the corn was drilled seven inches apart in the row. This corn was used to fill the silos and the remaining six acres was husked. We husked 898 crates of corn off this six acres. Nine acres of the corn was drilled 12 inches apart in the row. This was also husked and we got only 100 crates to the acre on this field. There was no difference in the quality of the corn grown in these two fields.

The length of the ears in the thicker planted field was shorter than those raised in the field where the corn was not so thick. The ears from the six acres averaged from seven to nine inches in length while the ears in the nine acres averaged between nine and 11 inches in length. The corn in both fields were well filled out and mature when harvested. The fodder from the six acres was the best because the stalks were smaller in diameter and were not so coarse as was the other. The height of the stalks was about the same.

Comparative Conditions.

The six acres was planted on May 26 and was cut on September 28, while the nine acres was planted on June 1 and was cut on October 3. Thus the growing period was practically the same for both fields. Each field was well fitted before planting and each field was cultivated four times with the double horse cultivator. One of the main things in drilling corn is to kill the weeds before putting the corn in the ground. Drilled corn is hard to keep clean, but if the land is well worked for several weeks before planting most of the weeds are killed before the seed is put into the ground.

Plant for the Average Season.

From the results which we had last year, it would seem as though the close planting of the corn was by far the more profitable. But one year's experience is not at all reassuring. We had a very good season, with plenty of rain-fall when we needed it and lots of warm weather and sunshine. Perhaps if the weather and other conditions had not been so good the other field would have been the better. It seems reasonable that if it had been too dry the thinner planting would have been the better. However, we do not generally plant our crops for the adverse seasons and we do not plan on those kind of seasons. We plant the crop for the average season and find that in the long run that the results will be better than as though we planned on an ideal season or an adverse season.

A Local Problem.

I am not giving this result as conclusive proof that you can get better results by drilling the corn closer together than is generally the rule. It is just the actual experience that we had last year and the actual results that we obtained. I planted the corn the same way the year preceding and was sure in my own mind that the corn was the best where it was drilled closer together but I did not keep track of the results and so decided to watch it more closely this last year. In my own mind, I am convinced that for our land and our conditions corn drilled seven to nine inches apart in the row is more profitable than if it was drilled 12 or more inches apart in the row. However, under other conditions and upon other types of soil, the conditions may be reversed. We intend to try the same thing out again

this year and perhaps for several years to come, and try to find out whether my conclusions are correct when taken for a series of years. This is one of the things which we have to work out for ourselves and the more we study our crops and the crops of our neighbors, the better farmers we will become. Each man must work out the rules for his own individual conditions and needs.

Lapeer Co.

L. S. BRUMM.

ALFALFA ON THIN SOIL.

I am moved to write you in view of the advice I have so often read, that alfalfa should only be seeded on soil well supplied with humus, and of good quality, and that no success could be expected from any other practice. Farmers should seed their best land to alfalfa.

I don't pretend to know anything about it, but would like to tell what I have done and ask someone who knows better, to reconcile it with the above doctrine.

Experience on a City Lot.

Some fifteen years ago I bought about two acres of land in Ann Arbor in a strip about four times as long as it is wide. Near the west end was a hill, and near the east end was a ravine. To improve it for city residence lots, I let a contract to fill the ravine from the hill, and later a street was cut through the hill. This hill was nice clear sand, a little too coarse for plastering sand in places (though a good many loads were sold for that purpose) and a little too fine for grout. After the land was leveled I tried to get it seeded to grass; but there was not enough substance there to make anything grow. The best it would produce was a few stunted ragweeds. Considerable water has been accustomed to run down the gutter since the street was put through where the hill was. This water coming down after snowstorms, brought some sweet clover seeds, which lodged and grew in the gutter. In pulling these up to get rid of the pests, I discovered that the roots were loaded with nodules. This fact suggested to me the idea of trying to seed the soil stripped land to alfalfa.

Method of Inoculation.

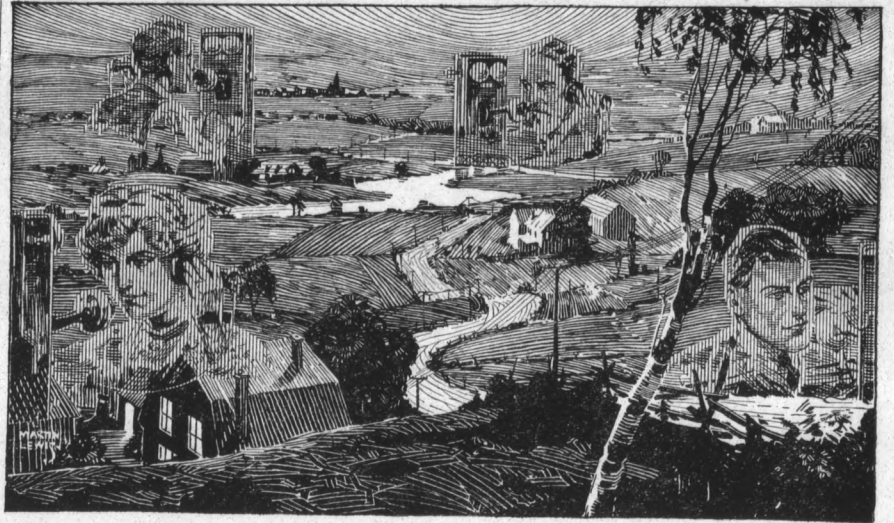
Last May I took some of the sand from where the sweet clover had been growing, cultivated it into this area, and seeded to alfalfa, without any nurse crop or fertilizer, covering the seed well with a pin-tooth drag. Except in places near the edge of the stripped area the alfalfa made only a weak growth, all summer. It turned yellow, and I thought it was going to die. The ragweeds came as strong or better than ever. They were clipped with a scythe three times; once the middle of July, once the last of August, and once about September 20. As the fall rains came on the alfalfa began to take courage. By the time growth was stopped by freezing weather the ground was pretty well covered, and the color was much darker.

Good Growth of Alfalfa.

With the first warm days this spring the alfalfa began to grow; and now, May 10, it is a very dark green, stands about 15 inches high, and fills every available inch of ground. This growth is made on land where there is no soil at all, and where to the depth of about eight feet (the depth of the trench for the sewer in the street) if not more, there is nothing but sand.

This experience prompts the question: Why could not the same thing be done on the despised "blow-sand" which most people consider hopeless? If it can be done, why has not somebody tried it?

Washtenaw Co. JOHN R. ROOD.



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Township Stone Roads

SOME two years ago, the writer first contributed to these columns, an article on the crushed stone roads of Fayette township. Other articles followed later, called out in part, by comment and inquiry concerning the subject. Since the first contribution was published, giant strides in permanent road construction have been made in various parts of Michigan. In Fayette township and its neighborhood, the work has steadily progressed, and the territory in which macadam roads are being built, has been very materially enlarged. So much interest is manifested in these roads, that a few paragraphs dealing with progress during the past year and with prospects for the future, will be found of pertinence and value to all concerned with the good roads movement.

Fayette township was the pioneer in crushed stone construction. But she no longer carries on the work alone. Three of her neighbors, Litchfield, Allen, and Scipio, now own complete outfits for building these roads. This in itself is proof enough of the efficiency and advisability of the construction of such roads. These last named townships waited till Fayette had tried out the experiment, and the fact that they considered it a success is proved by their subsequent action.

Farmers' Roads.

In considering the subject of stone road building in these four townships, let it be borne in mind that the area represents a territory essentially agricultural. No cities are embraced within the townships, and in two townships, there is not even an incorporated village. This work of permanent road improvement, therefore, is being carried on by, and with the hearty support and commendation of the farmers. The farmer's vote and the farmer's money are back of the work, and prove that the farmer's heart is in the project. The attitude of the farmers in these townships does away once and for all with the assertion so often made to the effect that farmers do not want macadam roads. Where these roads have once been introduced, the farmer has been the first to recognize their merits. After hauling his wheat and other farm products for years, through sticky clay or deep sand, the benefits of the stone road are realized at once and heartily appreciated.

Ten Miles of Road.

In dealing with the subject under consideration, a few facts concerning the present status, will be of interest: Three of the townships, Fayette, Allen and Litchfield, will construct, this season, about three miles each, of crushed stone road. In Scipio, the voters are paying for their outfit, and only about one mile of macadam road will be built. The total will amount to ten miles. As these townships comprise the northwestern corner of Hillsdale county, and are compactly situated, it will readily be seen that even at the rate of ten miles per year, the roads of this district will very soon change very materially for the better. At the end of the season Fayette township alone, will have ten miles of this stone within its boundaries. Three of the townships named are traversed by the Detroit and Chicago pike, a road much traveled and notorious in the locality in point, for stretches of deep sand. These bad places on the pike are being converted into stone road. As this is a state road, permanent improvement made in the future will constitute the so-called trunk line road. The crushed stone road-bed on this trunk line road will be 16 feet in width instead of nine as on other roads, and the townships will receive double state reward for its construction. All three townships will build some of this trunk line road, this year, and as several miles of macadam have al-

ready been built on this highway, its unenviable notoriety for sand and hills will soon be a thing of the past.

In the progress of permanent road improvement in these townships, the attitude of the voters toward the repair of roads has changed. The farmers realizing that repair work in the township must be performed by themselves, while in permanent road improvement they have the assistance of village taxpayers and of the state, are in favor of cutting down so far as practicable, the expense of repairing. In Fayette township, for instance, \$5,000 was voted this year, for permanent road construction, and less than \$1,000 for repair work. Of course, some repair work each year is absolutely necessary, but the tendency is to carry on as rapidly as possible, the work of permanent improvement.

The Best Type of Road.

In the four townships under consideration, plenty of stone for crushing is available at almost any point. Indeed, these stones which are being converted into macadam highway, are a great nuisance to the farmers who part with them gladly. With an abundance of the material available, it has become evident that crushed stone road is the most economic kind of permanent road improvement for these townships to make. Good gravel being available only in widely separated neighborhoods, and the expense of hauling coupled with the lower state reward, makes the construction of gravel roads less practicable. Time is an essential factor in determining the wisdom of any kind of public work. So far, time seems to be very decidedly on the side of the advocates of the crushed stone road, and the work is growing more popular year by year.

Hillsdale Co. J. A. KAISER.

LILLIE FARMSTEAD NOTES.

Disking for Corn.

A Saginaw county subscriber of the Michigan Farmer writes me advising against depending upon disking without plowing for corn. He says that in the spring of 1913 he disked a field that had been to beans the year before and the corn crop was not what he thinks he had a right to expect. Great pains was taken to do a good job of disking, and the land was worked up in fine shape. He had a fairly good yield of ears, but the stalks only grew about two-thirds as tall as they should. The land like mine was sod plowed down for beans. He advises plowing for corn. One thing he should have done, and that is plowed a portion of the field; that would have settled the question at least for that season under those conditions. But this he did not do, and we are not sure that he would have had any better corn if he had plowed the ground. I wish he had plowed a strip.

His letter has reminded me of the necessity of doing this very same thing. We will plow an acre or two down through the field, enough to give the question a thorough test, then we can form a more intelligent opinion of the matter. I am confident I should have neglected this, had it not been for this timely letter.

Influence of Weather Conditions.

I am certain that if it holds as dry as it is now and has been all spring, if we plow the corn will be very spotted on our soil. Where we have clay cropping out to the surface the soil will dry out so much in spite of all we can do that the corn will not come up well and we will not get an even stand. If the weather should change from now on and we have an abundance of moisture, perhaps an excess during the summer, as we do have some years, then I should expect the crop to do better on plowed land for the drainage would be better, but if it

remains dry, or if we only have a normal amount of rain from now on, it being so dry now, I believe the crop will stand a chance to be better on disked land, for the reason that the plants can get more moisture from the subsoil, and also because there will be a less amount of water lost in preparing for the crop. A portion of the field plowed, however, will be a fine experiment.

Fitting Fall Plowed Land.

It has been a splendid spring to work land and destroy grass and weeds. One sod field plowed last fall is fitted in splendid shape by once disking with the engine and then harrowing with spring-tooth harrow. I expected this field would require considerable more work than this to prepare it, and it would had the season been wet, because it was a sod of two years' standing, something we rarely have as all our hay is clover or alfalfa and we only mow the clover one season. We always sow timothy seed with the clover, because it usually fills in a few places where the clover stand is not so good and makes a better yield of hay. Always, however, when we seed I hope that the clover will so establish itself that we will never see any timothy. I think it is well worth the expense of the timothy seed, as there are generally a few spots where the timothy does better or as well as the clover.

On the greater portion of this field I have applied a half ton of hydrated lime per acre; this is where I will plant lima beans. The balance of the field will be planted to potatoes, and there we applied no lime. The weather is not settled sufficiently yet for planting lima beans, and we will occasionally harrow the field until it seems proper to plant, probably not until about the twentieth of the month. At the present writing we are drilling fertilizer broadcast on this field as it had no stable manure. That portion of the field intended for potatoes we can plant now any time that would seem advisable.

Effect of Fertilizer on Wheat.

Last fall on one field of wheat back of the barn we left a few strips the width of the drill without using any fertilizer, that is, we simply threw the fertilizer part of the drill out of gear so it would not sow, just to see if the fertilizer made any difference in the growth of the wheat. In some places



Unfertilized and Fertilized Wheat.

it looks as if the fertilizer really performed a miracle. No one would believe it made so much difference or could make so much unless they actually knew about it. It certainly looks as if 250 pounds of fertilizer per acre had more than doubled the crop. Where fertilizer was used the crop looks good for 30 bushels per acre; on the strips where not used no one would say the yield would be over 10 or 15 bushels, and on some spots not that much. How can a little fertilizer make so much difference? This land is rented land and somewhat run, but it is as good as lots of land in this section of the county. It is a heavy clay loam and in 1912 produced a good crop of clover, in 1913 a fair crop of corn, and last year an ordinary crop of peas. It would seem that a little fertilizer makes a stronger, thriftier and more vigorous plant, and this plant so invigorated has the power to help itself to other plant food in the

soil that is in such a condition, that the weaker plant has not the power of utilizing, or else perhaps the soil lacks one or more elements which is the limiting factor, and the plant can only make growth in proportion to the supply of this element. The added supply enables it to make a normal growth. It may be the soil lacks a sufficient amount of two elements or of all three in available form and the fertilizer supplies enough with that already in the soil in available condition to make a vigorous plant. All the theories seem reasonable to me. The condition of the soil makes any one of them possible.

COLON C. LILLIE.

FAVORS PLANTING BIG KERNELS OF CORN.

As it is about corn planting time please give me space in The Farmer this week for an item that may help to make the corn crop better this year than last year, if the farmers will try an experiment.

For planting part of your corn field this year select, not the largest ears of corn, but the ears with the largest, thickest kernels for seed. We plant good sized potatoes so why not plant large kernels of corn? The large thick kernels will furnish more food for the young corn plant till the roots can begin to get its food from the ground than a small kernel will, and you have noticed that a strong, early plant always makes the best corn.

I tried all large kernels two years ago and got better corn, so last year I sent to the factory and had extra thick disks made so as not to split the extra thick kernels and they seemed to be all right, as we had a much better stand and the best corn I ever raised—nearly all good sound corn with much larger, thicker kernels than usual. I planted it with a two-horse planter in rows three feet four inches wide and one kernel in a place about 15 inches apart and drilled home mixed fertilizer in the row at the same time. It was all right for the corn but I made the fertilizer too strong for the beans. It was my first time of mixing fertilizer at home.

I plant the rows three feet four inches so the cultivator will keep the middle between the rows clean. Try at least a part of your field and report to The Farmer in the fall.

Allegan Co. A. L. ROCKWELL.

DETROIT BANKS OFFER PRIZES FOR CORN.

The People's State Bank, the First and Old Detroit National Bank, and the Union Trust Company have appropriated \$300 to be given as cash prizes for the best bushels of corn raised in 1915 in each of twenty counties of Michigan. A first prize of \$10 for the best bushel of corn and a second prize of \$5 for the second best bushel of corn will be given to farmers in each of these counties. The appropriation is announced by George E. Lawson and W. T. Bradford, members of the committee of agricultural development of the State Bankers' Association.

The corn is to be exhibited at the Michigan State Fair at Detroit, September 6-15, and the awards are to be made by the state fair judges. The twenty counties eligible to share in the competition are Wayne, Macomb, Oakland, St. Clair, Sanilac, Huron, Tuscola, Genesee, Livingston, Washtenaw, Monroe, Lenawee, Hillsdale, Jackson, Ingham, Shiawassee, Saginaw, Gratiot, Clinton and Eaton.

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

Horticulture.

THE APPLE CURCULIO.

The curculio is a little fellow that is not being so much talked about as the aphid, but he is present with us and does considerable damage every year to the apple crop. At harvest time little punctures may be seen in the skin of the apples, some of them apparently not extending quite through the skin, while some are deeper. Where Bordeaux is used in spraying the punctures are not quite so pronounced as with lime-sulphur, as the latter causes a sort of leathery condition just beneath the skin and a discoloration around it. Apples that are thus injured are not strictly first-class stock and are really unfit for storage, as the break in the skin affords an opening for the attack of the rot fungus. Entomologists tell us these punctures are made by the curculio and are made in feeding. This damage is considerable. I noticed some of it in the apples on the exhibition tables at the meeting of the State Horticultural Society at Kalamazoo last December. The curculio also attacks several other kinds of fruit besides apples. Their damage in peaches and plums is frequently serious.

Methods of Control.

There are several methods of combatting the curculio, none of which seem to be very successful. Either the kerosene emulsion or nicotine sprays should afford a rather unpleasant experience for them, as both of these sprays kill by contact. Perhaps the addition of the arsenate of lead at the time of the "pink" spray might kill some of them, as they are said to be eating the foliage at that time. About the most effective means yet found is perhaps the jarring method. Sheets are spread under the trees and the branches jarred with a mallet with a muffled head in the cool of the day, when the insects will play possum and fall on the sheets and may be brushed up and destroyed. This is quite effective with smaller trees but it must be followed up every day as long as the curculio can be caught in any considerable numbers. It is therefore somewhat laborious. But this method is not feasible with large apple orchards. Perhaps if chickens were quartered in the orchards and encouraged with a little feed to thoroughly cover the ground they might pick up a good many. Prof. Hammar, of the U. S. Department of Agriculture, found that this insect pupates in the ground in August, and at that stage is quite tender and that by stirring the ground with a lead pencil he could kill 70 per cent of them. From this he gathered that in cultivated orchards the harrow would destroy many of them at just the right time. Another method that has been suggested is to provide some sort of trash about the orchard early in the fall, as it is known that they seek some such covering in which to hibernate, and by furnishing them the proper conveniences they can at the approach of winter be burned.

Allegan Co. EDW. HUTCHINS.

TROUBLE DEPARTMENT.

Asparagus Beetle.

Please advise me as to how to eradicate the asparagus beetle. The pest is a tiny black beetle with tiny white spots on back, strong mandibles that suck the moisture from the asparagus stalk and ruin it, the eggs of the beetle look like tiny green spikes stuck on the stalk of asparagus. I must eradicate the beetle or the asparagus will be ruined.

Huron Co.

A. P.

The most satisfactory way to control the asparagus beetle is to destroy all volunteer plants so that they may

not be a source of infestation, and then keeping the patch well cut down. It is also an advantage to leave a row or two around the outside as a lure to the beetles where they may be killed with arsenical sprays. Five ounces of Paris green and one pound of lime to 50 gallons, or two and one-half pounds of arsenate of lead to 50 gallons will be sufficient to kill the beetles on these rows. Dusting the plants with freshly-slaked lime before the dew has disappeared in the morning is also an effective control measure, and poultry allowed to run in the patch will help to get rid of a great many of the beetles.

As the beetle appears during the cutting time, it cannot be controlled by spraying, except on the few rows left for trapping them. One must use care in not getting the spray material on the shoots which are to be cut for eating purposes. It is by the use of the several methods mentioned that this insect is controlled rather than by the use of any single remedy we know of.

Growing Spinach.

Would like some information about spinach, which we have been rather unsuccessful in raising. Some times the seed fails to come and when it does come up the young plants begin to form seed pods almost before the leaves are large enough to be picked. Leelanau Co. Mrs. A. W. M.

Spinach is probably the most popular plant grown for its use as early greens in spring. It is a cool weather plant and is not very good for use during the hot months. Being raised for its green foliage, it should be planted on soils rich in nitrogenous material, or should be liberally fertilized with barnyard manure or nitrate of soda. It is often started early under cover and then transplanted when the danger of frost is over, or it may be planted in late August, given slight protection during the winter and be in good condition for early spring use. When spinach is started late in the spring the growth is dwarfed and the plants are likely to go to seed before the foliage becomes of usable size. The main thing, then, to prevent the formation of seed pods is to start the plants early. If one desires greens for use during the entire summer, Swiss chard is a very good substitute for spinach. It should be planted in the spring, and is good for use throughout the entire growing season.

Keeping Birds from Cherry Trees.

Can you give me a remedy for keeping birds away from cherry trees? I had a dozen trees well loaded with cherries and they ate them just as they ripened. There are no farms near ours. It is all standing timber. Houghton Co. Mrs. J. C.

We regret to say that we know of no satisfactory way to keep the birds from eating the cherries. In places where there are only a few trees, netting put over the trees is often used as a means of protection. In larger orchards some of the early varieties, such as the Governor Wood, are set for the purpose of appeasing the birds' appetites for cherries, and in that way protecting the main crop to a great extent. Mulberries are also set to detract the birds from the cherry trees. The use of scarecrows to keep the birds away is a failure, as they soon become accustomed to whatever might be used for this purpose. While we have never seen it tried, we have heard recommended the use of thread as a means of keeping the birds away from the trees. The thread is draped over the tree either up and down or around, so that the birds will become entangled in it. It is said to frighten them so that they will leave the tree alone thereafter.

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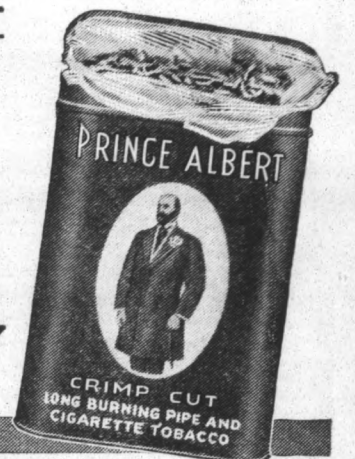


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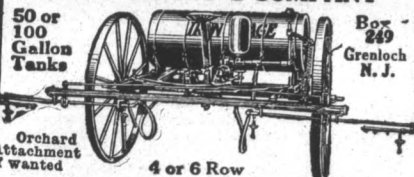
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8	34	30	3, 3 1/2, 3 1/2, 4 1/2, 5 1/2, 6, 8			7 1/2 lbs.	23	22
8	34	16	3, 3 1/2, 3 1/2, 4 1/2, 5 1/2, 6, 8			6 lbs.	18	17
8	45	16	4 1/2, 5, 5 1/2, 6, 7, 8, 9			6 1/2 lbs.	19	18
9	42	16	3, 3 1/2, 3 1/2, 4 1/2, 5 1/2, 6, 8, 8			6 1/2 lbs.	20	19
9	42	30	3, 3 1/2, 3 1/2, 4 1/2, 5 1/2, 6, 8, 8			8 1/2 lbs.	25	24
10	50	16	3, 3 1/2, 3 1/2, 4 1/2, 5 1/2, 6, 8, 8, 8			8 lbs.	23	22
15	50	24	1 1/2, 1 1/2, 1 1/2, 1 1/2, 2, 2, 2 1/2, 3, 4, 5, 5, 6, 6, 7			12 lbs.	35	33
18	58	24	1 1/2, 1 1/2, 1 1/2, 1 1/2, 2, 2, 2 1/2, 3, 3, 3 1/2, 4, 4, 4 1/2, 5, 5, 6, 6, 13 1/2			13 1/2 lbs.	39	37

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The Importance of Grooming

COMPARATIVELY speaking, few and should be removed; it also re-moves the dried sweat and dirt from the hair, at the same time, if used with a light hand, it arouses the nerves and blood vessels into healthy action. It may be said, however, if the currycomb is not used rightly it would better not be used at all.

After the currycomb comes the stiff dandruff brush, which is also a most useful article to start grooming the hocks and other parts of the legs which often become gummed up. Like the currycomb, the dandruff brush, being composed usually of stiff whale-bone bristles, should be used with a light hand. It is the body brush, however, that may be used to the best advantage to put the horse's skin into a healthful condition. It should be used vigorously and with a good pressure in order that the various tissues, glands, blood vessels and nerves may be thoroughly massaged while the coat is being cleaned.

The finishing touches of a thorough grooming, which experienced groomers of show horses regard as the most important part of their work are not usually given to the farm team except when the teamster happens to belong to that class now and then found among farm hands and generally al-luded to as a "horse crank."

The Object of Grooming.

And yet these finishing touches which put a horse's skin and coat into the perfect bloom of health are very easy to give, and the only instrument needed in the work is a linen cloth. We have all noticed the glossy hair beneath the harness on horses whose coats in other places look dull and rough. These glossy places are due to the continual pressure of the harness on what may be called the pomade glands of the skin, which brings out the secretions of these glands when this pressure is exerted.

This is exactly what the groom does who, after the pores of the skin have been opened and the coat relieved of the dirt and dried sweat, uses the rubbing cloth briskly. The use of the linen cloth causes the exudation of the natural oil or "pomade" and distributes it well over the surface of the coat, giving the horse the glossy, healthful look which proclaims to all observing persons that he is well groomed.

Every neighborhood possesses one, or perhaps a few teamsters whose horses always have glistening coats and whose ribs are never visible through their coating of flesh.

The longer period of usefulness which a team cared for by a man of this kind will endure, as compared with the that which marks the team never or seldom groomed and then not properly, will surprise anyone who will take the trouble to make comparisons, and such comparisons may easily be made in almost any neighborhood.

Methods of Grooming.

Grooming should be done in some portion of the stable absolutely free from draughts. The feet and legs should receive the first attention, the hoofs cleaned out and the hair below the knees freed from all dirt. In case the hair on the legs is matted with mud it will be well to wash it out with warm water, drying the legs thoroughly afterwards.

A thorough grooming once a day—after work—should keep a farm horse in the best of condition but it should be thorough. After drying the legs the currycomb should be used, not harshly or roughly, for it will inflict pain if used in that way. Use it with care, especially upon horses that show nervousness under its use. Rightly used the currycomb is a valuable aid to proper grooming as it loosens the partially exfoliated and used-up dandruff which is of no further use

While every stockman who is interested in the hog growing industry knows that hogs are selling at much lower prices than in recent years, they are very apt to forget that in most past years swine sold at much lower prices than are paid at the present time. Eleven years ago hogs reaching the Chicago stock yards were selling for \$4.25 to \$4.95.

Opinions differ as to just where the boom in prices for fat sheep and lambs will stop, but no one expects to see otherwise than fancy prices for a long time. The country is greatly short of flocks of sheep, and a mutton famine is fast approaching.

Dairy.

CONDUCTED BY COLON C. LILLIE.

EFFICIENCY ON THE DAIRY FARM.

(Continued from last week).

Not only is this much so, but hundreds of dairy farmers are buying annually tons of mixed feeds of doubtful feeding value, because they contain an excess of the very elements they already have on their farms. So many brands of ready mixed feeds (guaranteed to meet every requirement of the animal regardless of its condition, age or sex), are on the market that one need not wonder at the bewilderment of the dairy farmer who is unacquainted with feed analysis, composition and values. For example, White has plenty of clover hay and matured corn silage, but he finds that by feeding a few pounds of grain he can nearly double his milk yield, so he buys a few tons of bran and malt sprouts, but when he examines his cost sheet at the end of the month he finds that the increased flow of milk has cost him as much as it sold for. He begins to study the feeding problem, consults with one of the best feeders in his locality and finds out that he is paying out his good money and forcing his cows to consume more of some of the elements than they can digest and assimilate. He begins to see that to buy a ton of bran at \$30 that is pure, contains only 240 pounds of protein, when a ton of cottonseed meal contains nearly 800 pounds of protein, and costs only \$40, is to part with one's money without reasoning. In the bran the protein costs less than 14 cents a pound, in oil meal six cents and in the cottonseed meal five cents. He decides to try out the new idea and finds that by feeding his cows two and one-fourth pounds of protein a day, all that they can make efficient use of, that these two concentrates, oil meal and cottonseed meal, fed with silage and clover hay, fill every requirement of the ration, and, as oil meal and cottonseed meal counteract each other's peculiarities, his cows do better than when he was feeding them the diluted mixed feeds that cost almost as much per tons as the straight concentrates. As he studies the problem further he finds that there is a credit of nearly one-fourth the cost price due these richer and more valuable concentrates for their fertilizing value. The result is that White has cut down the cost of feeding his herd more than one dollar a day through intelligent feed buying. It is very likely he would have been another member of the great army of men who are wondering what is the matter with the dairy industry, had he not begun to study his business from the efficiency standpoint. There is a necessity that the dairy farmer study the feed problem so that he will always make judicious investments and not bring on to his farm a lot of cheap mixed feeds that contain an excess of the very elements he already has in excess.

Finding Suitable Markets.

One of the greatest problems in dairy farming is that of finding the best markets for the products. The location of the farm to suitable markets and railroad facilities must necessarily govern the kind of products produced and the methods of selling, although it is difficult to convince many dairymen of this fact. For example, two men with whom I am personally acquainted, have different views on this important question. One of these men lives five miles from the shipping station and hauls his milk that distance every morning past a creamery within one mile of his farm. On the way to the station he meets

the other farmer who lives but one mile from the station with about the same quantity of milk, hauling it to the creamery a distance of about three miles. A little figuring will show these men that the efficiency problem is not being applied to their business.

In deciding between selling his milk to the creamery, cheese factory, condensery or city milk trade, one should be guided by the prices paid for milk and butter-fat, and his convenience for raising young stock. Any good feeder will find it possible to realize from 20 to 30 cents per hundred pounds from skim-milk by feeding it to calves, pigs or poultry of the common sorts, and higher values if fed to pure-bred animals intended for breeding purposes. Whey has a food value of about 10 cents per hundred pounds. The selling of whole milk to the city trade or condensery leaves no by-product on the farm. Therefore, in figuring a reasonable scale of prices I submit the ones below for comparison and it is my judgment that they are approximately correct: Creamery \$1; cheese factory \$1.10; city trade or condensery \$1.25. The prices paid by creameries seldom vary more than 10 to 15 cents per hundred pounds from those paid by cheese factories, because most of the progressive factory owners have the equipment necessary to make butter in case the market goes below that for butter.

New York. W. MILTON KELLY.

COMFORT IN THE STABLE.

Much is said by some of the writers of the farm press, concerning cold stables in winter, stables with cracks in the doors, loosely fitting windows, etc. Although this is undoubtedly uncomfortable for stock, I cannot think that they suffer more than when confined in close, ill-ventilated stables in hot weather.

Many stables that I know of have either no means of ventilation except the doors and windows, or else they are so open that there is a current of air passing in every direction. A great help to proper ventilation is a louvre on the roof. This is our method of ventilation—a sort of cupola protected by slat blinds through which the air passes, thus carrying off the foul gases.

A great help to pure air in a stable is to allow no such thing as a manure pile at the door. We haul to the field or orchard, summer or winter. By deodorization a great benefit is gained. For this work many purchase land plaster, but finely pulverized clay or loam are sometimes used instead. By this means the liquids are absorbed and the saturated portions are removed.

Some preach against basement stables. I wish such could visit ours and see how thoroughly the stock enjoy it—cool in summer and warm in winter. During the day in summer the doors are kept open, being protected by screen doors which admit the air and at the same time keep the poultry outside, for they, having free range, often manifest a liking for nesting places in the mangers, and this is contrary to the rules laid down on our farm.

Opposite the door is an alleyway leading to the cellar, so none of the stock stand in a draft. Overhead in the barn floor is a trap-door—some six feet long (over a stairway) which is open day and night in warm weather, which with the fresh air admitted through the screen door and the escape of foul gases through the roof makes the stable well ventilated.

We think the thermometer almost a necessity in regulating the temperature of the stable in winter, as it quickly tells if we get it too warm or too cold, when ventilators can be opened or closed—as the case may require. I believe the well-being of our stock depends largely on the comfort they enjoy in the stable. Stock that

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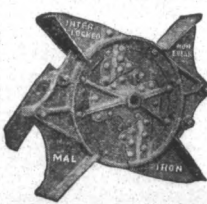
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THE FEEDING QUESTION.

This old world we inhabit has stood a long time, and for a long time people have been feeding and milking cows, and yet the subject of economical cow feeding is a good way from being definitely settled. Some men of experience and good judgment advise feeding a liberal grain ration, while other good men of wide experience think there is little economy in feeding cows a large amount of grain, with such a disagreement among doctors, who shall decide—rather, how shall the little fellow decide? It is a question presenting two sides.

Liberal Feeding Pays.

That it pays to feed young and growing animals well and bring them to a full and vigorous maturity there is no question. Last winter the writer visited two herds of cows not far apart, both of the same breed. One was raised and owned by a young man with little experience in such work and the other by a man who is evidently a dairyman. One had evidently been fed enough to keep the calves alive and growing, while the other herd had been well fed and pushed. The contrast between the two herds was striking. One would hardly suppose there could be the difference in two herds of the same breed, although neither had been "stunted." Last winter I bought a nine-months-old Jersey bull calf that had been fed a good mess of separated milk all his life, and he was as large and vigorous as most yearlings of the breed.

The Individual in Feeding.

Now, the question arises, at what stage in the animal's life is it wise or economical to change this policy and feed less than the individual can digest and assimilate. If a cow is fed a liberal but judicious ration there are three possible ways in which she can dispose of it. She can deliver it in the pail, she can store it in her back or, if fed in excess, she can waste it. If the voidings are normal the presumption is that she is making good use of the feed—either storing it up in her body for future use or delivering it in the pail or foetus. Nor can the question of profit be determined by present production. If a cow has been well fed the past winter she will do much better the coming summer, and if well fed the coming summer she will do better next winter, so the amount of milk or butter produced just now does not determine whether the cow is being profitably fed or not. Certain it is that she cannot create anything but must produce milk and butter from what she eats.

If we feed a ration of grain on the basis of a pound daily for every pound of butter-fat produced in a week we shall feed seven pounds for every pound of butter-fat produced. If grain is worth \$30 per ton, (and in quantities it should be bought for not much more than that), and butter-fat is worth 30 cents per pound, we shall feed 10½ cents worth of grain for every 30 cents worth of butter-fat we sell. As grain is the more expensive part of the cows' ration it would seem that it will pay to feed about all the cow will consume and digest. But this is one side of the question.

The Cost of Feeding.

On the other hand, the cow does not always turn seven pounds of grain into a pound of butter-fat. If we have a cow that produces 300 pounds of butter-fat in a year she would require on this basis 2,100 pounds of grain. This grain would cost say, \$30, and would require 100 pounds of butter-fat at 30 cents a pound to pay for it. Would 2,100 pounds of grain make a difference of 100 pounds in the butter-

fat any ordinary cow would produce in a year? On the face of it it looks doubtful, but how is one going to tell? Surely a series of tests would be required to determine this matter definitely which the ordinary dairyman is hardly prepared to make.

Mr. Lillie's figures in the Michigan Farmer of May 1 are interesting along this line. Last year his cows consumed \$1,172.70 worth of grain, and produced 12,313.8 pounds of fat. He no doubt bought his grain in carlots, and if he paid around \$27 per ton he fed just about seven pounds of grain for every pound of fat produced. Mr. Lillie's figures show a handsome profit—\$1.49 for every \$1 in feed consumed, including roughage of course. But what might have been the corresponding profit if the grain had been partially or wholly left out? If, now, some of the men who claim a larger profit without grain would come up with their figures we might have a basis for comparison, perhaps.

The writer assumes that he is only one of many who are interested in this question of cow feeding, and would like to see it discussed.

Allegan Co. EDW. HUTCHINS.

SOY BEANS WITH ENSILAGE CORN.

I have read a great deal about either cowpeas or soy beans in your most valuable paper. Now I would like to know if I could sow them in with my corn to any advantage to increase the tonnage, and also the feeding value of silage? If so when should they be planted and how much seed with six or eight quarts of corn per acre? Also where could I get the seed?

Oakland Co. W. K.

By actual weight the yield of ensilage has been increased 4,550 pounds per acre by adding soy beans to the ensilage corn. There is not only an increase in yield but there is an increase in the total amount of protein in the silage. It is claimed that the corn even is richer in protein than that grown alone for the reason that the soy bean furnishes more nitrogen for the corn. The soy beans should be inoculated.

The best way to plant, if you use the two-horse planter for the corn, is to go at once over the rows again with the same planter and plant about the same amount of soy beans per acre as you planted corn. A planter is now made, I understand, that has double equipment, dropping both corn and beans in same row.

HOW MUCH GRAIN TO FEED FOR EACH POUND OF MILK.

I have four cows which look as if they would make very good producers if they had a good mixed, well balanced ration. Three of them have not come in yet but are due soon. I have lots of good bright oat straw, mixed hay and a few cornstalks for roughage. Now I would like to have you give me a table of well-balanced rations in pounds, which will include ground corn, oats, wheat bran, oil meal, cottonseed meal, and any other grain which you think will make a feed for these cows. Prices of grain here are about the same as in Detroit. How many pounds of grain should be fed for each pound of milk?

Gratiot Co. W. W.

If you choose to feed both oil meal and cottonseed meal (and this would be a good practice where you have no silage and no roots of any kind to feed), I would feed one and a half pounds of oil meal in the morning and one and a half pounds of cottonseed meal at night to each cow. Mix cornmeal, wheat bran and ground oats, equal parts by weight, and feed a sufficient amount of this mixture to give each cow one pound of grain for every four pounds of milk if it does not test above three and one-half per cent, and one pound of grain for every three pounds of milk if it tests above three and one-half or four per cent. Feed all the roughage the cows will eat up clean.

GRAND RAPIDS HOLSTEIN SALE.

The fourth annual consignment of registered Holstein-Friesian cattle was held May 4 at the West Michigan State fair grounds, Grand Rapids, by the West Michigan Holstein Breeders' Association. There was a very good attendance of men and women interested in black and white cattle and while the stock, especially the young heifers, in some cases went considerably below their real value, the results were fairly satisfactory. About 90 head of cattle were sold, the sales totaling \$16,000, or an average around \$190 per head.

The highest price paid at the sale was \$1,050 for a bull owned by John M. Tobin, of Allegan, and purchased by Ben Hanchett, of Grand Rapids, who will place him at the head of his valuable herd at Jenison. This animal was born June 8, 1914. The sire, Johanna McKinley Segis, is one of the greatest bulls of the present time. One of his sons sold recently for \$12,500. The dam is an A. R. O. daughter of King Segis and Segis Beets De Kol Salo, she being from a 32-lb. daughter of Paul Beets De Kol. Johanna McKinley Segis 3d is sure to give a good account of himself.

The female bringing the most money was K. S. P. H. Houwtje Maid, born in October, 1912, owned by Butth Bros., of Grand Rapids, and sold to J. J. Bennett, of Fremont, for \$400. Her sire is by King Segis Pontiac, from a good record daughter of King of the Pontiacs. Her dam is a bull who derives 75 per cent of his blood from Pontiac Korndyke and who is therefore three-fourths brother to the sire of the \$25,000 bull, Rag Apple Korndyke 8th.

Col. D. L. Perry, of Columbus, Ohio, was auctioneer and was assisted in the ring by N. C. Thomas, of Caledonia. S. T. Wood was manager of sale and W. R. Harper business manager. The sale committee included W. R. Harper, M. W. Willard, E. W. McNitt, John M. Tobin and P. Butth.

Prices secured were very good, in view of general conditions, the prevalence of tuberculosis and the scare over hoof-and-mouth and other diseases. All cattle over six months old were tuberculin tested and still there were Holstein breeders at the ring-side who would not make a single bid for stock, stating that they had never found any re-actors on their farms and they did not want to take any chances.

Kent Co. ALMOND GRIFFEN.

MEETING OF JERSEY MEN.

The executive committee of the Michigan Jersey Cattle Club met at Jackson April 24. Those in attendance were Dr. G. A. Waterman, of Ann Arbor, chairman; Mr. H. F. Probert, of Jackson, Mr. G. H. Jewett, of Allegan, and Mrs. P. H. Walker, of Kalamazoo. All regretted that Mr. R. R. Smith, of Howell, the president of the club, was unable to be present. Remarks were made by Mr. Jewett and Mr. Probert, both outlining plans of work that might be taken up by the club, to promote the Jersey enterprise in Michigan. Mr. Jewett told of the splendid work being done in the Allegan Jersey Cattle Club and in the Allegan Cow Testing Association. Mr. Probert told of the work being done on his farm, illustrating what can be done by having energy, push and ability, not only for his own profit and also for the interests of the Jersey throughout the state. Mrs. Walker then gave her report, telling of the work that has already been done by the club. Many letters have been written in an effort to come in touch with every Jersey breeder in the state. A man was sent into Berrien county, where the foot-and-mouth disease raged and a week's work was spent trying to interest the people in Jerseys. "The editor of the Berrien County Record lent his assistance, publishing a special Jersey edition of his paper illustrated with pictures of famous Jerseys and containing articles written by several of the prominent Jersey breeders of Michigan. There were also a number of Jersey cattle advertisements in the paper. The report was accepted."

It was arranged to hold the summer meeting of the club at the college at East Lansing some time after June 15. The secretary was instructed to arrange for Jersey booths at as many of the county fairs as possible, these booths to be made attractive by decorations and pictures, and also to be stocked with an abundant supply of Jersey literature for distribution and to be placed in the care of someone who knows and loves Jerseys and who has the knowledge to state the facts concerning them. It was decided to make use of the various farm papers in a publicity campaign to boost the Jersey and that Jersey breeders over the state be asked to assist by contributing articles of interest for publication from week to week throughout the year.—P. H. Walker, Sec.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

BILLY BE BY BO BUM was as proud as a turkey cock. Yes, sir, he was just as proud as a great big turkey gobbler strutting around the barnyard with his tail spread out like a fan for all the chickens and hen turkeys to admire. For you see, his father had given him a brand new compass, and Billy was just itching for a chance to put it to use.

So after he had filled the wood box and helped his mother feed the chickens, he started off for the White Forest where he knew Tinker Teedle Tee, the merry little elf, would be waiting for him. And sure enough, as he wriggled through a hole in the stump fence that separated the cow pasture from the big woods, he saw Tinker perched on a toadstool, the weeny copper kettle that served him for a hat cocked on the back of his head.

"Oh, Tinker, see what daddy gave me," cried the boy, as the elf, who had spread his wings and flown to meet his little friend, alighted on Billy's shoulder.

"A sure enough compass, and a beauty, too," said Tinker, polishing the glass front of the compass with his tiny handkerchief. "But tell me, Billy Boy, do you know how to use it?"

"Father said the needle always

Land O' Nod Stories.

By HOWARD T. KNAPP.

Tinker Explains the Compass

pointed to the north, but I don't see why, do you Tinker?"

"Magnetism makes it do that," replied the elf.

"What's magnetism?" demanded Billy, who was rather surprised that such a tiny fellow as Tinker, who, you know, was only about as big as a minute, should use such a big word as magnetism.

"Well, that's mighty hard to answer," replied Tinker, scratching his chin with the point of one tiny boot. "Wise men who have studied it all their lives don't know just what it is, except that it is a form of electricity. But you know what a magnet is, don't you Billy Boy?"

"Sure I do," Billy replied. "It's a little steel horseshoe that picks up pieces of iron and nails. Santa Claus put one in my stocking last Christmas, but I lost it."

"Well, the needle of this compass is a magnet," said Tinker. "Now, if you

will get out your jack knife, I'll show you a trick with a hole in it. Just hold the blade near the compass and see what happens."

Billy did as Tinker told him, and the needle, which had been pointing straight toward the north, turned around until it pointed at the blade of Billy's knife. As soon as he took the knife away, the needle went right to where it was before. Then he held the knife over the compass, and what do you think happened? The needle spun around and around for all the world like a puppy chasing its tail.

"You see, Billy, the needle is really a little magnet, and it wants to pick up your knife," explained Tinker Teedle Tee. "But the knife is too heavy, so the needle does the next best thing, it tries to go to the knife."

"But even if the needle is a magnet I don't see what makes it point toward the north," said Billy.

"Well, you see, the whole earth is

a kind of magnet," replied the elf. "One end is called the North Pole and the other the South Pole, and the little magnet in your compass always tries to go to the North Pole when there is not a piece of iron or steel near by to pull it the other way. So as long as you have your compass with you, you will never get lost, no matter how far from home you may be, for the needle always tells you which way to go. It's funny, but when anyone gets lost in the woods without a compass to guide them, they always walk around and around in a circle."

"Why do they do that?" asked Billy. "I should think they would keep on going straight ahead until they found their way out of the woods."

"That's what they intend to do, but somehow or other they always come back to the place they started from."

"But the chief use of the compass," continued Tinker Teedle Tee, "is to help sailors steer their ships across the wide ocean. With the aid of that little needle, a sailor can sail his vessel almost as straight as though it was on a railroad track."

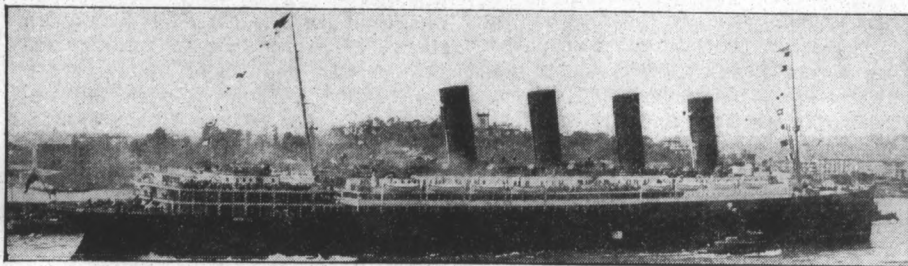
"But how did the sailors steer their ships in the days before the compass was invented?" asked Billy.

"They had to depend on the sun and stars," replied Tinker. "And on

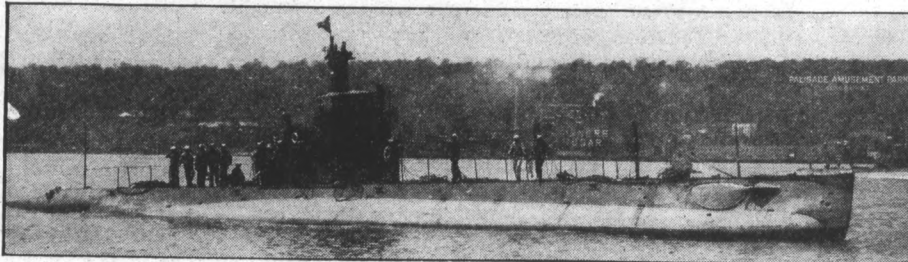
WORLD EVENTS IN PICTURES



Yuan Shi Kai, President of the Chinese Republic.



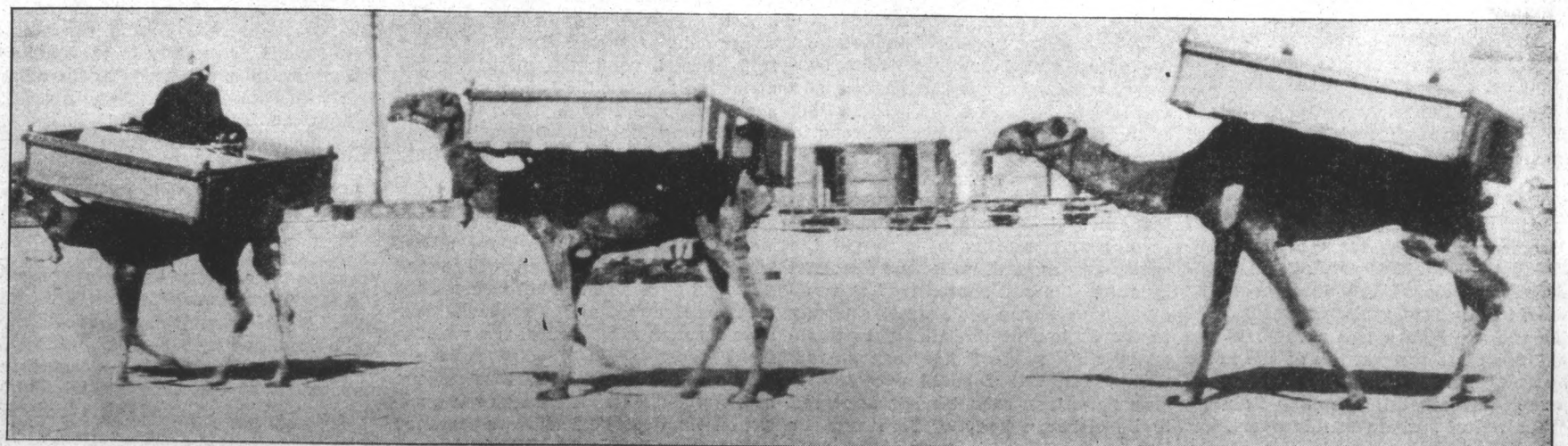
The ill-fated Lusitania Leaving New York on Last Voyage.



The K-6 of U. S. Submarines Arrives in Hudson River.



Elbert Hubbard Goes Down with Lusitania.



The Camal Ambulance; an Ingenious Method Employed by Armies Operating in the Orient, of Carrying Wounded Soldiers Across the Desert.

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a clear night the stars as true a guide as a compass, for no matter in what part of the world you may be, the north star is always in the same position, pointing out the right direction."

"How in the world can you tell the north star?" demanded Billy, "when there are so many thousands of stars in the sky, and every one looking just like the other."

"But they don't all look alike," Tinker replied. "You know the big dipper when you see it, don't you, Billy Boy?"

"Sure I do," Billy answered. "It's that group of stars arranged exactly in the shape of a tin dipper. My father

showed it to me one night last summer."

"Well, sir, the next time you see the big dipper, just look straight ahead in the direction the handle is pointing, and the first star you see after the last one in the handle of the big dipper, is the north star. No matter in what part of the sky you see the big dipper; no matter if it is upside down or standing on end, the handle always points to the north star."

"If it is clear tonight I'm going to look for it," Billy declared, and just then he heard the supper bell ring, so he said good night to Tinker Tee-dle Tee and scampered off home.

THE RED MIST.

By RANDALL PARRISH.

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CHAPTER VII.

Shelter from the Storm.

IT was a hard tramp, the notch in the hills farther away than I had reckoned upon, and the ground between extremely difficult to travel over. At times an impenetrable tangle of brush turned me aside, and I was obliged to skirt numerous ravines which were impassable. Yet I held stubbornly to the course, seeing no other way out from the tangle, and stumbling steadily forward, my body aching from fatigue, and growing weak from hunger. It was considerably after the noon-hour before I came upon the first sign of human life—an old logging road. Weed overgrown, and evidently long abandoned, it was nevertheless a most welcome discovery, and I limped on between its ruts, animated by new hope. The weather had turned colder, and there were whirling flakes of snow in the air. The direction I traveled compelled me to face the storm, and the wind whipped my face cruelly. An hour more of struggle brought me suddenly on a dismal shack of logs in the midst of a small clearing. I hesitated at the edge of the wood, peering through the snow. The scene was a desolate one, the clearing overgrown with weeds, the hut barely fit for habitation. Yet the very desperation of my situation compelled me to chance its occupancy, and I pushed a way forward through the weeds, discovering no path, until I attained the door. It was closed, but unfastened, and, revolver in hand, I opened it softly and stepped within. There was but one room, and that bare, except for an empty box or two, and a few discarded garments hanging from pegs against the wall. A gun with broken lock stood in one corner beside an axe, and a rudely constructed fireplace occupied one end. There was no other entrance, and the single window was securely closed. The light streaming in through the door revealed these details, and that the room was unoccupied. Yet someone had been there, and not so very long ago for there were scraps of food on one of the overturned boxes, and a faint, barely perceptible curl of smoke arose from the black ashes on the hearth.

Whoever the former occupant might be, or where he had gone, was of small moment to me just then. It was enough to be assured that he had departed. The sight of those food fragments renewed my consciousness of hunger, revived my sense of chilly discomfort. I glanced without into the storm and closed the door, changing the interior into twilight gloom. Using the axe I soon had a cheerful fire going, and as the warmth of the flame became perceptible, began eager search for something to eat. I almost despaired of success in this effort, but by chance pushing aside one of the garments on the side wall, discovered a haversack in which remained some

hard bread and a bit of home-baked bacon. Unappetizing as these appeared, I sat down before the fire and ate heartily. I dared not sleep, and indeed felt little inclination to do so, my mind busy with recollections of the night's adventures, and planning my future course of action. I thought of Fox, and his men, wondering who among them all had fallen during the fight, and what might be the fate of the others. It was Cowan, no doubt, and his mountaineers, who had attacked, and there would be little mercy shown. This hut likely was the abode of one of the gang, and I gazed about in renewed disgust. It would be well for me to be away before the owner returned, yet I lingered, seduced by the warmth of the fire, and dreading the storm without. The fellow would not come back probably until the snow ceased. Nor did I in the least know where I was to go—except that I must push along to the north, out of Cowan's country. Once in the neighborhood of Lewisburg, I would be on more familiar ground, and could proceed with the work assigned me. If there were Federal troops there I would boldly report the fate of Fox's detachment, proclaim my own purpose as a recruiting officer, and request protection. My papers, my intimacy with Captain Fox, and the knowledge throughout the district that a Lieutenant Raymond had been detailed to this service, would disarm all suspicion. And in my judgment Lewisburg was in that valley ahead—might indeed be visible at the other end of the gap.

I got to my feet somewhat reluctantly, and opened the door. The storm had ceased, but the ground was white, and the wind still whipped the snow viciously. There was no excuse, however, for not going forward, and closing the door securely behind me I ploughed through the tangle of weeds back to the road. A hundred yards below I came to a pike, along which a wagon had passed since the fall of snow. The vehicle had been drawn by mules, and their narrow hoof marks pointed to the valley. I followed cautiously, making no effort to overtake the outfit, and thus, just before sundown, emerged from the narrow gap and looked down into the broad valley of the Green Briar. It was a scene to linger in the memory, and at my first glance I knew where I was, recognizing the familiar objects outspread before me. The road led downward, turning and twisting as it sought the easier grades, and no longer obscured by snow, the soil showed red and yellow. The wagon was already nearly to the bottom of the hill, distinguished by its spread of dirty canvas top. Other than this I could perceive no moving object, except what appeared to be either a body of horsemen, or bunch of cattle, far away to the left. Lewisburg lay beyond a spur of the hills, invisible from my position, al-

though distant spirals of smoke indicated its presence. A few log huts appeared along the curving road, the one nearest me in ruins, while a gaunt chimney beside a broad stream unbridged was all that remained of a former mill. Beyond this, in the midst of a grove of noble trees, a large house, painted white, was the only conspicuous feature in the landscape. I recognized it at once as the residence of Major Harwood.

My gaze rested upon it, as memory of the man, and his fate, surged freshly back into mind. The place had been spared destruction; it remained unchanged—but from that distance there was nothing to indicate that the house was still occupied. It had the appearance of desertion—no smoke showing above the broad chimney, no figures moving either about the main house, or the negro cabins at the rear. This condition was no particular surprise, for Harwood's daughter, scarcely more than a girl to my remembrance, would not likely remain there isolated and alone during such troublesome times, and the servants had doubtless long since disappeared in search of freedom. The young woman would doubtless be with friends, either in Lewisburg or Charleston; and that the mansion, thus deserted, still remained undestroyed was, after all, not so strange, for the Major's standing throughout that section would protect his property. He would retain friends on each side of the warring factions who would prevent wanton destruction. I moved on down the steep descent, losing sight of the house as the road twisted about the hill, although memory of it did not desert my mind. Some odd inclination seemed to impel me to turn aside and study the situation there more closely. Possibly some key to the mystery of Harwood's murder—some connection between him and old Ned Cowan—might be revealed in a search of the deserted home. Fox had said that his party halted at the house on their march east toward Hot Springs. Some scrap of paper might have been left behind in the hurry of departure, which would yield me a clue. If not this, then there might be other papers stored there relating to military affairs in this section of value to the Confederacy. Harwood was the undoubted leader of the Union sympathizers throughout the entire region; he would have lists of names, and memoranda of meetings, containing information which would help me greatly in my quest. An exploration could not be a matter of any great danger, and might yield me the very knowledge I sought.

I had almost determined on this course when I came to the cross-road, which I knew ran directly in front of the house. It was already growing dark, clouds hanging low over the valley, and, as I paused irresolute, a cold drizzle set in, the north wind sweeping the dampness into my face. Determined by this I turned aside into the new road, and pressed forward, only anxious now to find shelter. The road twisted about along the bank of a small stream shadowed by trees on either side. I passed the ruins of the mill, but beyond the night closed about me so dark that objects became shapeless, and I even found difficulty in following the path, although it was seemingly a well traveled road. Only detached sections of rail fence remained standing, and I should have stumbled blindly past the very place I sought but for the high stone pillars which marked the place where the gate had once been. These guided me to the driveway, and I groped a passage through the grove of trees to the front steps.

The great house loomed before me black and silent. If I had ever questioned its desertion its appearance lulled every suspicion. Nor had it escaped unscathed from the despoliation of war. At a distance, gazing from

the side of the mountain, I could perceive no change. But now, close at hand, even the intense darkness could not hide the scars left by vandals. The front steps were broken, splintered as if by an axe, and the supporting pillars of the wide veranda had been hacked and gashed. The door above was tightly closed, yet both windows to the right were smashed in, sash and all, leaving a wide opening. I crept forward, and endeavored to peer through, but the darkness within was opaque. The only sound was the beating of rain on the roof overhead. Occasionally the swirl of the wind drove the cold drops against me where I crouched listening; I was wet through, chilled to the bone, my uniform clinging to me like soaked paper. At least the inside promised shelter from the storm, a chance for a fire, and possibly fragments of food. And I had nothing to fear but darkness.

My revolver was under the flap of my cavalry jacket, dry and ready for use. I brought it forward, within easy grip, and stepped over the sill. My feet touched carpet, littered with broken glass, and I felt about cautiously, locating an overturned chair, and a cushioned settee, minus one leg. My recollection of the interior of the house was vague and indistinct—the remembrance only of one brief visit made there years before, a boy of ten with my father. I had never been in this room, which must be the parlor, but I knew a wide hallway led straight through from front door to back, bisected only by a broad stairway leading to the upper story. The library would be opposite directly across the hall, and the dining-room behind that. I had been in both these apartments, and they had seemed to me then spacious and wonderful; quite the most remarkable rooms I had ever seen. I groped along the inside wall, seeking the door, making no particular effort to be noiseless, yet rendered cautious by fear of stumbling over misplaced furniture. The apartment was evidently in much disorder, glass crackling under my feet, and a breadth of thick carpet torn up, so that I tripped over it, and nearly fell. Yet I found the door at last, standing wide open, and emerged into the hall. The way was clearer here, and there came into my mind the recollection of a bracket lamp, on the wall at the foot of the stairs. Perhaps it was there still, and might contain oil. If this could be located, a light would be of great assistance, and could not add very much to my peril of discovery. No one would be abroad in this desolate country on such a night of storm, and the house was utterly abandoned. Besides, the heavy blinds at most of the windows were closed tightly. My remembrance of the position of the lamp was extremely vague, yet my fingers found it at last, and lifted it from the bracket. The globe contained oil, and, in another moment, the light revealed my immediate surroundings.

Except for a broken stair rail the hall remained in good order, a storm-coat hanging beside the front door, and a serving table and low rocker occupying the recess behind the stairway. I could see nearly to the further end, where a bench stood against the wall with some garment flung over it, and up the stairs to the blackness of the second story. The total desertion of the place was evident; the destruction which had been wrought was plainly the work of cowardly vandals, who had broken in after the Harwoods left. Convinced of this truth I proceeded fearlessly to explore, seeking merely the warmth of a fire and food. The library, a large room, the walls lined with bookcases, afforded no encouragement, but I stopped in amazement at the door of the dining-room—the light of my lamp revealing a table at which someone had lately eaten, apparently alone. There was a

(Continued on page 600).

A Successful Historical Pageant

(Continued from first page).

of the leading actors rented Indian costumes at personal expense. Indian braves wore khaki suits trimmed with gay fringes. The Indian maidens' costumes being made of cambric or cheesecloth, beaded and fringed to the wearer's taste. The priest and nuns were clothed in borrowed college gowns, with cap and bonnets of home manufacture, and many were the comments on the accuracy of their attire. The "gay-lifers" had no trouble in procuring hoop-skirts and ruffled gowns, long-tailed coats and tall hats. One of the United States Commissioners wore an up-to-date derby which escaped the director's notice until it was too late to change, and there was one little pale-faced Indian. However, it is well to consider that there were only three weeks in which to rehearse, and it was not possible for the director, who also took the part of an Indian maiden, to be in every spot at once and see that sixty people were all properly arrayed at the last moment.

The last moment came all too soon. On the rise of ground under the trees near the bridge was a steadily increasing crowd of spectators. It had been expected that the audience would sit to view the performance, the natural amphitheatre making it possible for every one of the vast crowd to see the stage. But such is the perversity of human nature that they all stood crowding as near as they could to the water's edge.

The broad river with its vine-covered, tree-crowned opposite bank formed an effective background for the stage, which was a long, narrow, grassy strip of land, separated from the mainland by a little bay of shallow water, fifty to one hundred feet in width. Two giant maple trees, in each of which nine or ten boles spring from a common base, marked the extreme right and left, and two large trees at the back, and one to right of center, completed the natural setting of the stage, which was carpeted with grass of velvety green. Willows at either end of the peninsula provided partial shelter for the actors between scenes.

As the hour for opening drew near, the actors began to arrive, being brought in boats from the opposite shore. The waiting audience had the added pleasure of seeing the stage set. A "priest of the Holy Cross," with his robe tucked under one arm, assisted an "Indian" in setting up wigwams. The "landlady," in voluminous skirts, was seen to hide a basket of properties behind a tree. Some of the gentlemen of the "gay-life" and the "Indian Chief" and his "Squaw" sold souvenir booklets among the spectators.

At length all was in readiness. The actors, inspired by the presence of the large crowd, were aquiver with impatience to begin. To the front of the stage advanced a "French" gentleman in the cocked hat, ruffles and kneebreeches of early days. With the aid of a megaphone (which was not in "character," though quite essential) he announced each scene, giving an outline of the plot.

ACT I.

The stage as set presented to the audience a peaceful scene of Indian camp life. To the right center sat Topenebee, Chief of a tribe of Pottawatomies. His squaw was mending the fire under a large copper kettle in front of their tepee, while little brown children played near by. At the left, in front of another tepee, was a group of Indian maidens. Indian rugs, pottery and baskets added to the realistic effect. The quiet was immediately broken by the shouts of Indian braves returning from the hunt. They brought exciting news. A white man had been seen on the river! The camp was thrown into confusion as all hurried to the river bank to watch for the

stranger. Presently he came into view—a keen-faced, sharp-eyed man in coon-skin cap, his gun across his knees, Joseph Bertrand arrived under the guidance of a tall Indian who paddled the canoe. They landed. Bertrand was welcomed by Topenebee, for the Pottawatomies were peaceful at this time—1812—and many of them Christianized, and the two men sat in a circle of eager, curious Indians. Bertrand having come to trade with the Indians, his guide brought from the canoe an ancient chest, and some sharp bargains were driven over gay calicoes and heavy furs. The trading over, the young braves gave vent to their good spirits in a characteristic dance, while Bertrand and the Chief were served with soup from the big kettle by the squaw and her daughter.

Bertrand had eyes for the girl only, and soon followed her as she strolled along the water's edge. A pretty little courtship scene was enacted here, in which Bertrand sang beseechingly of his love for the coy little Indian maid. One swift glance from her dark eyes, then she gave him her hand, and they returned to the camp. The girls, who had been slyly watching the courting gathered around the daughter of their chief expressing their delight, and the squaw brought in the good priest from the neighboring Mission. The marriage solemnized, all knelt to receive the priest's blessing. Congratulations and gifts were showered on the couple; the scene closing with the exit of the party, led by priest, chief and bridegroom. They were followed by the bride, carrying on her shoulder the great basket containing the gifts, the whole tribe trooping after in happy procession.

ACT II.

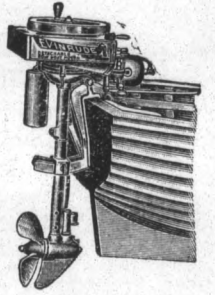
There was no change of scenery for the second act, which the announcer indicated to have taken place twenty years later. Chief Topenebee had called his braves together for a council. They entered and formed a big circle on the ground. One of the three United States Commissioners present read to them the treaty made at Chicago in October, 1833, between the United States of America and the United Nation of Pottawatomies, Chippewa, and Ottawa Indians, whereby these tribes had ceded their lands in this locality to the United States. For the tract of land on the banks of the St. Joseph river from a point north of Niles to the state line of Indiana, Topenebee's tribe received the sum of one hundred thousand dollars. Also for the section of land (lying directly across the river from the scene of the pageant) formerly given by the United States of America to Madeline, wife of Joseph Bertrand, the United States proposed to pay eight hundred dollars. By the terms of the treaty the Indians were to have three years in which to vacate their lands, and free transportation to those reserved for them in Kansas. The original treaty (a copy of which is in the possession of the Northern Indiana Historical Society) bore the mark of Topenebee, and was signed among others, by the name of J. Bertrand, Jr., Interpreter. Topenebee made his braves a speech, enjoining them to obey the commands of the Great White Father, and abide by the terms of the treaty. The women and children were called at the close of the council. In silence the camp was broken up. The men in all the bravery of paint and feathers, followed their sorrowing chief. The women, bearing on uncomplaining shoulders the impedimenta of the camp, had to be urged forward by the commissioners. They left in a long straggling line, with faltering step and a long, last look at the home they would see no more. The last squaw led a horse which pulled a drag carrying the smallest children. And so passed from Bertrand the last of the Pottawato-

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mies, and the stage was deserted at the end of Act 2.

After his marriage with Madeline, daughter of Topenebee, Bertrand established a trading post where the old trail, known as the Sauk trail, crosses the St. Joseph river. The little village bearing his name grew into the gay French town previously mentioned, enjoying its greatest prosperity between 1833 and 1848. For many years a Catholic Mission flourished here. In 1844 Father Sorin brought from Notre Dame four Sisters of the Holy Cross, who established a primary school and a young ladies' academy, later known as St. Marys.

ACT III.

The first scene of Act 3, represented the weekly visit of Father Sorin to the primary school. Being of importance historically, though of little dramatic value, the scene was used merely as a transition between two larger acts. The quiet entrance of two devout nuns followed by a company of little children, the arrival of the priest, his blessing, and the solemn recession, completed the scene.

In the old days the justice of the peace in Bertrand made many an extra dollar "tying the knot" for couples who came from South Bend to escape the marriage license laws of Indiana. The second scene of Act 3, which is supposed to take place in the year 1845, opened with the entrance of a landlady of a tavern, who was making preparations for a dancing party. Soon the young people began to arrive. The black coats and silk hats of the men made a fine background for the gay colors worn by the girls. With swaying hoops and fluttering ribbons they looked like flowers in a summer breeze. In the midst of their merry chatter a run-a-way couple arrived seeking the justice of the peace. While the landlady called the justice the Bertrands received the blushing couple with open arms. The brief ceremony over, congratulations followed, and a toast was drunk to the health of the bride. Then in came the fiddler. To the inspiring strains of "Money Musk" and "Old Dan Tucker" the gay party went rollicking through the mazes of the Virginia Reel. The bridegroom, losing his bashfulness, now that the deed was done, became the life of the party, and even the gray-haired justice showed an amazing knowledge of the steps. The last set finished, the bride and groom endeavored to slip away unseen, but without success. With shouts of laughter and showers of rice, they were followed off the stage, and the scene came to a close.

GRAND FINALE.

Led by Bertrand and Madeline, Topenebee and his tribe of Indians met Father Sorin and his nuns in the center of the stage, the people of the "Gay Life" filling out the giant semicircle. At a signal from the French announcer each lifted an American flag and joined in singing "The Star-spangled Banner." With the singing of "America" by audience and chorus, the pageant came to a close, and "Bertrand Lives Again" in the hearts of the people.

Fireworks in the evening completed the celebration which began in the morning with a flag-raising ceremony by the school children, included a ball game, band concerts early and late, and a basket dinner at noon. Only a small sum of money had been raised to help pay the musicians, but all expenses were met by the sale of the souvenir booklets and the receipts from the refreshment stands. When all bills were paid the treasurer reported a surplus of fifty dollars.

The Social Center Club accomplished its purpose by making Bertrand a pleasant place in which to spend Independence Day. It was a "safe and sane" celebration, no accidents or disturbance of any kind marring the pleasure of the day. The event had

been well advertised, and it is estimated that three thousand people witnessed the pageant, that crowning event of a successful day.

(The preceding article is one of a series on "Rural Recreation," a general topic included in our list of 52 special articles one of which is to be used in each issue during the year ending Nov. 1, 1915.)

THE RED MIST.

(Continued from page 598).

single plate, a cup and saucer, a half loaf of bread, with a slice cut, part of a ham bone, with considerable meat remaining untouched, and a small china teapot. For an instant the unexpected sight of these articles fascinated me, and then my eyes caught a dull glow in the fireplace at the opposite end of the room—the red gleam of a live ember.

I could not actually credit the evidence of my own eyes, firmly believing, for an instant, the glow was but the reflection of the light held in my hands. Yet a step forward convinced me—the ashes of the fireplace radiated warmth; someone then had been in that very room within an hour, had warmed himself there, and partaken of food. The shock of this discovery was so sudden as to give me a strange haunted feeling. The house had seemed so completely deserted, so desolate wrapped in silence and darkness, that the very conception that someone else was hiding there came upon me like a blow. Who could the person be? A faithful slave remaining to guard the property for his master? Some fugitive who, like myself, had sought a shelter from the storm? Or Old Ned Cowan seeking to complete his mysterious purpose? A seaNedaliae ... terious purpose? Could this be the aftermath of the murder? A search after papers not found upon the body of the dead man? Somehow my mind settled to this theory, leaped to this conclusion—the prowler was Cowan, or else some emissary he had sent. Well, I would find out. Thus far the advantage was mine, for I knew of another presence, while the fellow, whoever he might prove to be, in all probability possessed no knowledge of my entrance. Perhaps he had already completed his search and departed; if not, then he must be somewhere on the second floor, for if below he would have certainly perceived my light or been alarmed by the sound of my movements.

My heart beat fast, but from excitement, not fear. With cocked revolver in one hand, the lamp in the other, I silently opened door after door, peering into vacant apartments, half thinking every shadow to be a skulking figure. The search revealed nothing; not even further evidence of any presence in the house. The kitchen fire was cold, the cooking utensils clean, and in their proper places. The back door was bolted from within, the windows securely closed. I listened for any sound, but the house was as silent as a tomb; I could hear the patter of rain, the scraping of a limb against the outer wall, but not the faintest movement within. Satisfied already that the mysterious invader had departed, yet sternly determined now to explore the whole house, and have done with the business, I mounted the back stairway, a strip of rag carpet rendering my steps silent, and with head above the landing, flashed my light cautiously along the upper hall. There were doors on either side, the most of them open, but the third to the left was closed. There was no transom over it, but the door was far enough away from the radius of my lamp so as to reveal a faint glow of light at the floor line. I sat the lamp down on the landing, and crept noiselessly forward to assure myself; it was true, a light was burning within the closed door.

(Continued next week).

Practical Science.

CHEMISTRY AND THE FERTILIZER INDUSTRY.

BY FLOYD W. ROBISON.

In the field of the fertilizer industry there has been perhaps as general an acknowledgement of the services of the chemist as in any industry. This probably is because it is directly through the efforts of the chemist that the opportunities for the use of commercial fertilizers in agriculture have come, and so intimate has the relationship of fertilizers to agriculture become that it may be said that this outgrowth of the energy and skill of chemist thus lies at the very root of agriculture. We are just beginning now to be prepared to appreciate in some degree to what extent chemistry is applied to industry, for agriculture is undoubtedly the foundation of commerce and manufacture and, as we have stated, the relationship of chemistry to agriculture is one of undisputed intimacy.

The Chemist's Relation to the Fertilizer Industry Readily Recognized.

From an administrative standpoint, speaking for the American chemist, the fertilizer industry was the very first industry which secured official chemical control as an adjunct to economic farm operation. This has seemed strange to a great many of our prominent men who have stated, with ridicule, that more scientific attention was being given to the development of agriculture and to the protection of live stock than to human beings. This is not strange at all, but is merely an outgrowth of the recognition which was accredited to the chemist in the fertilizer field for, as we have stated, in this field he has been pretty generally guaranteed the freedom of operation. The knowledge of the processes governing the nutrition of plants and animals are the result largely of the researches of the chemist, the problem of the application of administrative agents to the soil for the indirect nourishment of the crops, has been the direct result of the researches of the chemist. The development of the tremendous resources in the accumulated nature's storehouses in different sections of the earth of plant food have been made possible only because of the chemist and the problem of the ever increasing population has called forth the renewed energy of the chemist to produce bigger crops through the scientific application of commercial fertilizers.

The Fertilizer Industry Not an Old Industry.

And yet, the fertilizer industry is a modern industry, so to speak. It was started about 75 years ago, by Liebig, a very famous chemist who proposed, by a study of the mineral constituents of plants through the analysis of the ash, to decide what classes of chemical constituents should be supplied to the plant. At this time the idea of the development of what has later been called a superphosphate was first proposed by dissolving the phosphoric acid from bones with sulphuric acid, thus making a soluble phosphate which became more readily available to plants. The oldest agricultural experiment farm, at Rothamsted, England, is responsible, however, through the initiative of its chemists, Lawes and Gilbert, for the first use of the storehouse of raw phosphate rock which since that time has been the main source of the phosphoric acid in commercial fertilizers.

The Future Problem.

The next problem of the chemist which in its laboratory phase has been at times successfully worked out, is the production of a phosphoric acid in

an available form which does not pass through the objectionable stage of the sulphuric acid manipulation. It has been attempted by various chemists, has been operated quite successfully in the laboratory, but as yet has not been developed commercially. The immense storehouse of potash has been drawn upon and supplies in commercial fertilizers that particular ingredient. The activity of the chemist has made possible the use of the tremendous storehouse of inert nitrogen of the air in a form suitable for plant food.

The Utilization of Waste.

To the energy of the chemist must also be accredited the great fertilizer industry which has been built up in connection with the large packing plants of this country, industries which in themselves are unique enterprises of this country and not to be equaled in any degree abroad. So that, while many European countries produce much greater yields per acre through their system of intensive agriculture, than is done in this country, it is mainly because the great population of that country necessitates in the first instance a more intensive application to the growing of crops. But the greatest development of the science of fertilizers has undoubtedly come in this country through the researches of the American chemist.

The sphere of the chemist, therefore, is at both extremes of the fertilizer industry. In the first instance, to his skill and ingenuity is directly due the development of this enormous and important industry, and in the second instance, into his hands have been placed without question, by the consumer, the regulation and control of the fertilizer industry.

The achievement in this line has been the discovery of the necessity for the use of fertilizers, through researches into the composition and behavior of plants; the origination of the artificial manures for plant growth through the production of superphosphates; the development of the potash resources and utilization of the atmospheric nitrogen, and the recovery of the waste animal products and the preventing of waste in many other lines subsidiary to other industrial enterprises. In fact, chemists and chemistry are at the bottom of the whole fabric of the fertilizer industry and while this field is the most generally recognized and the most universally accredited to him of any line of enterprise, nevertheless, it is typical of the real influence of the chemist in various other enterprises in which his sphere of influence is not at all either generally recognized or conceded.

BOOK NOTICES.

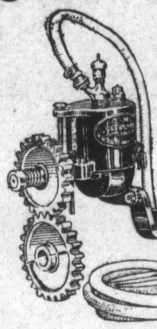
"Electricity for the Farm," by Frederick Irving Anderson, published by the MacMillan Company. This book is designed primarily to give the rural resident a practical working knowledge of electricity for use as a light, heat and power on the farm. It gives details for the construction of water power plants for generating electricity. The volume is well illustrated, contains 265 pages, and can be secured through the Michigan Farmer office for \$1.25.

"Principles of Rural Credits," by James B. Morman, published by the MacMillan Company. The purpose of this book is to show how farmers may finance their undertakings. The author takes up in detail the systems of credits as applied in Europe, and suggests a plan for a constructive credit system for American farmers. The book contains 300 pages, and can be secured through the Michigan Farmer for \$1.25.

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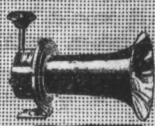
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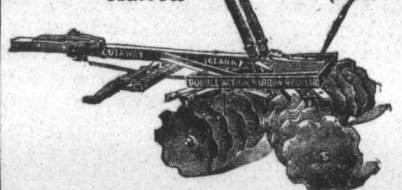
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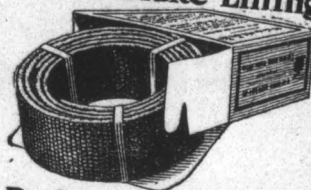
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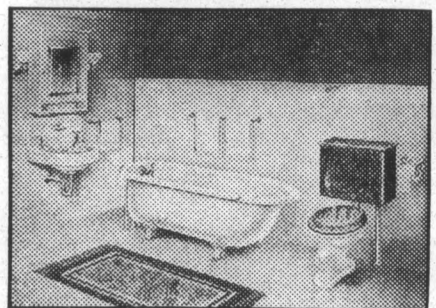
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STOP-SCORCH
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Managing the World

IF I were a little, little prairie dog I'd be wishing that I were a big, big elephant, so I might fan myself with my ears. Now if I could be Providence—

"You'd better just let it be the way it is," said Billy. "You'd go and get it all muddled up."—Saturday Evening Post.

A universal lament is voiced and answered in the bit of conversation recorded above. Never a person lived who has not often and loudly declared that if he had the running of things we'd have a vastly different world, the implication being, of course, that it would be a whole lot better. We'll grant the first half of the assertion without argument. The world would be different, no doubt about it, if we humans could have a hand in the running of it. But that it would be so much better is to be taken with a large allowance of doubt. Rather, as the sage, Billy, put it, we'd "get it all muddled up."

There are so many things we'd do differently, if we had the ordering of affairs. But we ought to know from just looking back over our own trail how preposterous some of the things would be, and how much better it is that we couldn't change them. Why, just go back to the first time you wished you were boss, away back in the days when you still lisped. Then if you were Providence you'd have the bill of fare composed of candy and cake and ice cream and maple syrup. There'd be no plain bread and butter and eggs and meat and potatoes. Candy would be ever and ever so much better for you, and when you made a world the trees would all grow candy, and you'd never have to go to bed and you could have matches and set bonfires and whittle furniture and write your name all over the clean windows and never have to carry in wood and never have to put away your toys and you could stamp through the house and track it all up with mud, and—oh, you remember all the things you could have done had you been Providence. You were sure then that those things would be ever and ever so much better for you than the stupid things your parents, who posed as Providence, insisted upon.

The same idea followed you through school. There wasn't a bit of sense in studying grammar or algebra or geometry or Latin, and when you made a world you'd leave all that junk out. It was all nonsense to go to bed early at night, too, during the school week. You could just as well go to three or four parties a week as not. To be sure you couldn't study so well the next day, but what was the use of being on earth if you couldn't have any fun Providence again was mighty finicky, and you could plant things a whole lot better.

You can see now that your ideas in childhood and youth were decidedly warped, and that the rather hard way you had to travel was after all the better way. The workings of Providence during your early years weren't so harsh and mysterious after all. You are willing to concede that you needed the discipline.

But somehow or other, now that you are grown you aren't a bit more willing to let Providence have its way than you were earlier in life. You think more than ever that you could plan things a whole lot better. You don't admit that you need further discipline, that life still has many hard

lessons for you to learn, which Providence, or fate, if you prefer to call it that, is trying to teach you. You rebel at the things which come to you and your family, instead of accepting them as needed discipline.

It was "Ben Hur" who said, "Past question every experience is valuable to us." And he was right. No matter how painful or disagreeable the experience, it can be made to benefit us if we so desire. We can let the hard things fret and irritate us, or we

can prove our superiority by accepting them as just a part of life, a blessing in disguise, sent by Providence to teach us poise.

Life was not given us simply to be gay in, though we were intended to be happy. It was given us as a time of growth, of character building, and character worth while grows on adversity rather than on pleasure. The world most of us would plan if we could be Providence would be one of roses without thorns, of wine without dregs. But as Billy remarked, we'd find when we finished we had only "muddled things up." **DEBORAH.**

The Renovation of Old Hats

By CHARLOTTE BIRD

If the old hat is white straw, brush it well to remove the dust. Then heat a lemon and squeeze out the juice into a dish. To this juice add a teaspoonful of powdered sulphur.

With a brush go carefully all over the braid of the hat. Afterward brush several times with clean, cold water, enough to rinse off the mixture, wipe dry with a clean cloth and then dry in the shade. When dry, the hat will be almost like a new hat.

An old leghorn hat may be cleaned in the same way, only one must be very careful not to wet the braid too much, or the tiny cord which holds the braid together, will become moistened and shrink and thus pull the hat out of shape.

An old-fashioned method of bleaching white straw hats, is to wash them carefully and then smear all over with corn meal, moistened with water. Then suspend in a close barrel over a fire on which sulphur has been thrown. It is the sulphur which does the bleaching, so its use in the fire must be continued till the hat is white.

A black straw or braid hat may be beautifully renovated by a plentiful and even smearing of just common bottle shoe polish. The ten cent grade will do the work as well as any. This gives the braid a certain stiffness of dressing also, which makes it seem more like new. A light-colored hat may be blackened successfully by this method.

It is said that holding artificial flowers in the steam of a tea-kettle will somewhat restore them. True it is that somewhat muddled flowers may be pulled into shape and the appearance of the leaves, especially, will be improved by this process. But for the soiled, very much muddled flowers, there is only one thing to do—throw them away. Their use would only ruin the appearance of a hat. If the color only has suffered, a little touching up with water color paints will sometimes restore them.

Velvet and velvet ribbons are easily restored to almost their pristine freshness. You need only brush over the nap with a damp cloth and then run the under surface over a hot flat-iron. Or, better still, a perfectly clean stove plate may be heated, the velvet laid on the upper surface and brushed but need not by any means show the steam will make the drying nap stand up smooth like new. This is a method well known in the trimming rooms of good milliners.

If ribbons are good enough when bought, they may be washed in warm water. Potato water is said to be the best for this purpose. A mild soap may be used. Rub the soiled places

with the fingers. But care must be taken not to squeeze the ribbon or wrinkle it in any other way, because the wrinkles will stay. Rinse in several waters. Last, smooth out on a long, clean board till not a wrinkle is to be seen. When the ribbon is dry, it will be like new. Ribbon should never be pressed with an iron, no difference who advises it, because it takes all the dressing out of the silk. Any silk may be washed beneficially by this process.

Ostrich feathers may be washed or even colored at home. One should remember that on the back of their native ostrich they have been wetted and wetted again, so water has no peril for them. Wash in warm water with a mild soap, rinse well and then dry out of doors in a gentle breeze, if one is blowing, but not in a high wind. If it is desirable to color the feathers, select some dye, known to be reliable, and after the preliminary washing, dip into the dye one, two or three times, as is desired, rinse thoroughly and dry as when merely washed.

The curling of ostrich feathers is not such a simple process. Often it may be done by holding the feathers, while slightly damp, over a hot stove, or drying completely in a warm place. But this will curl only slightly, merely save the fibres from complete straightness.

The feathers may be curled over the duller edge of a silver knife. But this is a rather straining process on the feathers, because one is so apt to break off the fibres. It must be done very carefully and never be trusted to careless hands.

Braids are now so cheap, so pretty and so attainable that many women are making their own hats and doing it with praiseworthy success. In the ten-cent stores the frames are only ten cents. A clever woman can often make her own, if she does not find exactly what she desires. But a good selection is offered, and these she can modify.

Some very pretty and serviceable braids are sold for five cents a yard at the ten-cent stores and a bunch holds 12 yards. So a very pretty hat indeed may be had for 70 cents. The trimming will depend on the wearer's taste but need not by any means show the home-made touch.

There is no other department of dress where women are so universally and so successfully "done" as in the millinery. It is taken so for granted that the outsider does not know the worth of the materials used, and so commonly she does not know. But this is all passing.

In short, if a woman knows how to

use her milliner needle cleverly, there is no reason in the whole world why with only a very small outlay, she may not have several pretty new hats a year. She owes it to herself always to have a fresh hat.

ONE-PIECE BABY SHOE.

BY R. S. WHEELER.

Here is a little one-piece baby shoe that is very easy to make and is very comfortable. It may be made of any soft leather or even velvet. The tops of the old kid gloves answer very well. If made of mole, white rat or wild rabbit skin, with the fur inside, they are excellent for winter.

Make a cloth pattern first to get the size. Let the edges X-X come to the ankles. Sew the seam, A-A first. Then the circle B-B-B. To get the length put the shoe on the foot and cut the toe end off at D-X-D. Sew up the seam, C-C, and then around the toe at D-D.

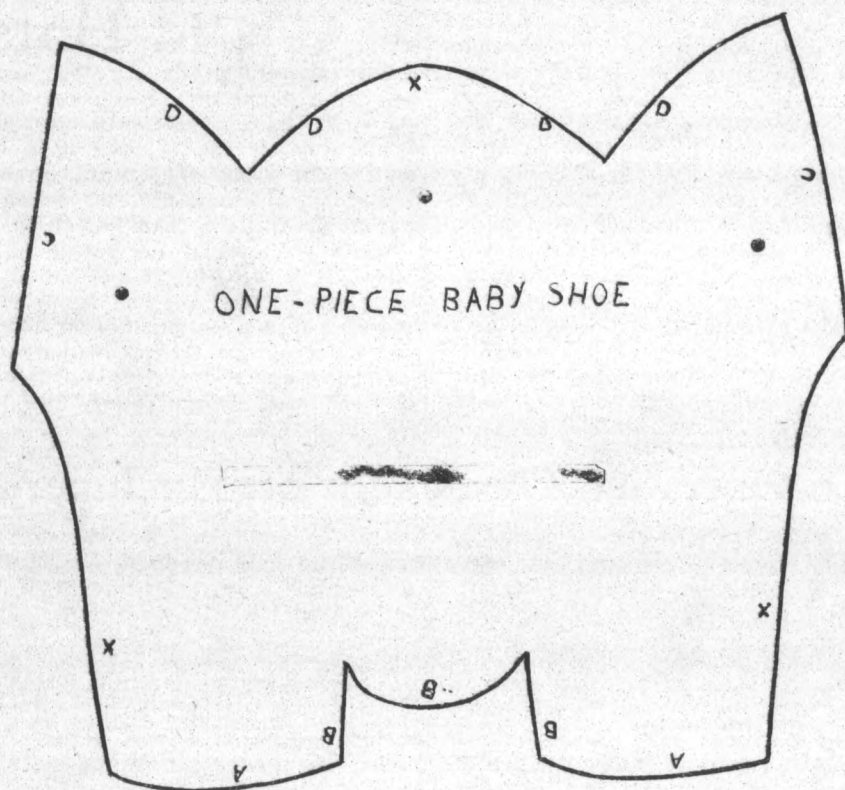
The seams may be put together by a close over-hand stitch, or better still

wrong side of the bed, as the saying goes. The day begins with a grouch, a snap and snarl, and unnecessarily severe punishments are inflicted for trifling faults.

Knowing that the brain is largely dependent on the condition of the stomach we insist that our two children rise early that they may have plenty of time to eat a breakfast of good wholesome food. No one is able to think clearly on an empty, over-filled or sour stomach. Neither is a child in a receptive state of mind if he bolts his food then races all the way to school, arriving breathless and in mortal terror of being tardy. When the nine o'clock bell finds our little ones with sparkling eyes and singing lips we need have no fear but they are fit to begin the tasks of the day and reap full benefit.

HOME QUERIES.

Household Editor:—Will you please publish in your next issue a recipe for making salmon bread?—W. K.
Has any reader the recipe. It is im-



by firm, neat buttonholing. If the shoes are white sew them with light blue or pink embroidery silk and bind the tops with a narrow tape of the same shade. If some pretty light colored material is used stitch and bind the shoes with white.

A TIME FOR CORRECTION.

BY M. PELTON WHITE.

If a child needs correction or punishment, and what child does not more or less frequently, do not give it to him in the morning before sending him to school. No child is in a receptive frame of mind while nursing a grievance, or feeling oppressed over wrong-doing. To get the best out of his lessons he must be happy and care-free.

"It takes me a full hour in the morning to get James in a proper state of mind to receive instruction," complained a teacher. "His parents seem to have the unfortunate faculty of stirring him up before sending him to school."

Investigation showed that the boy's father was in the habit of administering reproof for misdemeanors of the previous day on the morning after. No doubt the child needed punishment but he should have received it the night before then he would in all probability have slept off his resentment and been in a teachable state the next day.

There is also another point in favor of making the eventide rather than morning the better time for correction of faults. Grown-ups as well as children are quite liable to get out of the

possible to answer any questions in so short a time.

Household Editor:—Will you please publish a good recipe for making rhubarb wine?—Mrs. M. B. H.

Cut four pounds of rhubarb into pieces in a large earthen vessel and pour over it one gallon of boiling water. Add four pounds of brown sugar, cover with a thin cloth to exclude the dust and let stand six weeks. Pour off the liquid carefully, strain through a double cheesecloth, and bottle. You may add various spices to give flavor if you desire. Soft water is usually used in making wines.

SHORT CUTS TO HOUSEKEEPING.

In crocheting an edge around a handkerchief begin about an inch from the corner. The point of joining will be less noticeable.—L. M. T.

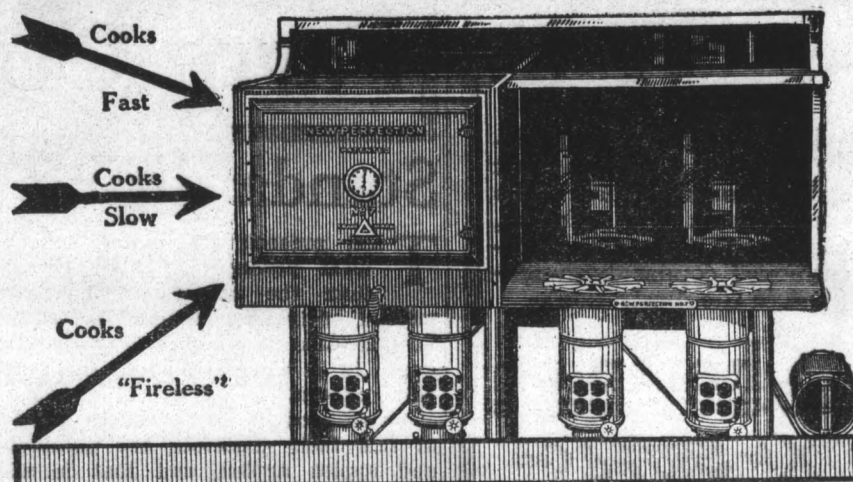
To separate eggs drop in a funnel. The white will slip through.—Mrs. J. P. C.

A little turpentine added to the water in which prints are washed will set the color and prevent fading.—L. M. T.

When the pies will not brown set them on the shelf, lay a paper in the bottom of the oven and sprinkle it with sugar.—L. M. T.

Table oilcloth tacked upon the pantry shelves is much neater and easier cleaned than paper-covered shelves.—Mrs. S. B.

Window sashes are often cut and broken in trying to remove old putty. Apply a hot iron to the putty, which will then yield to the knife and leave the sash clean.—L. N.



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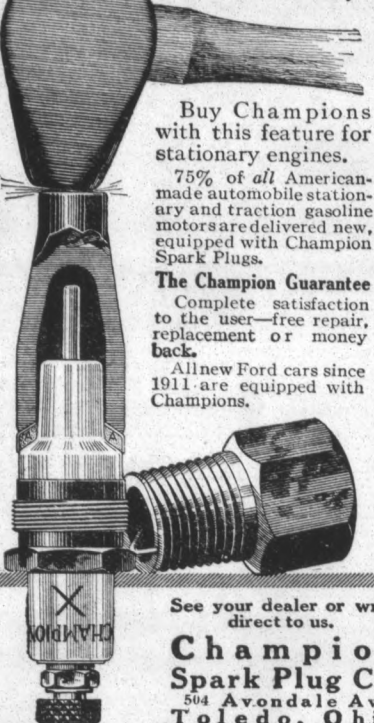
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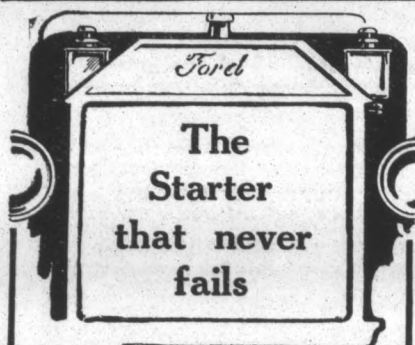
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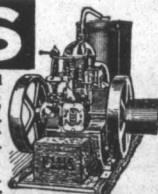
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Farm Commerce.

Standardizing Farm Products

THE present system of selling farm products is little better than the old "sight unseen" method of trading jack-knives. Only in this case the one who sells the goods is in the dark as to the real value of what he offers. If he has a superior product he is seldom aware of this fact. Potatoes are potatoes and apples are apples, and that is all there is to it.

But while this condition exists on the farms and at the primary selling points, there has during the past few years been a great standardization process going on in the cities. Practically every kind of crop grown upon the land is being graded. In a sheet listing the sales of produce on South Water street, Chicago, 84 items are included. Not a single one of these is quoted at a flat price, but under each item there is a range of values suitable to the market for the different grades. This goes to show that after farm products get into the hands of the middlemen they are graded upon a basis of merit to suit the demands of the retailers and consumers.

A Middleman's Service.

It must be recognized that the middlemen have done a service in preparing these products for the final consumer; by properly grading they can satisfy the needs of the most fastidious who usually are willing to pay a wide premium for superior quality and also meet the wants of those who desire cheap goods by selling them the inferior grades. In meeting the needs of all customers through this grading process, the middlemen have undoubtedly encouraged a wider use of the products.

Notwithstanding the fact that the farmers have been more or less ignorant of the changes in wholesaling and retailing, the position now offers them an unusual opportunity to secure better values for their products by doing the grading upon the farm or under their control through co-operative organizations.

In order to do this best the farmer must keep in mind the idea of standardizing the product through all the processes of growing and marketing it. There are many things that can be done in the production of most crops that will increase the percentage of better grades and consequently decrease the amount of the inferior ones.

As an illustration of the last statement, we might mention the production and distribution of apples. How well it has been demonstrated that by giving the trees proper care as to pruning, cultivation, spraying and the thinning of the fruit where the trees are too heavily loaded, it is possible to almost eliminate the lower grades of fruit and put the bulk of the crop in the fancy stock. In recent years there has been much discussion through the agricultural press and at farmers' meetings of the advantages in the use of the right kind of seed in producing a more uniform crop of potatoes. Now since it is necessary to sort and grade this crop according to established standards in order to realize the best prices, this information on how to produce the best type of potato will be helpful in assisting the producer in his problem of marketing. The argument could well be extended to include practically every product grown upon Michigan farms.

Understanding the situation as it exists in our large marketing centers today, the prudent farmer is going to see to it that the crops he sells will

be more carefully prepared before it is sold from the farm. Some effort has been made by Michigan potato growers to get a better hearing from the buying world by giving attention to grading. The preliminary work done by these progressive men will undoubtedly mean much in the future, as it is certain that the process of standardization will be worked out so thoroughly that the man who gives it no attention will have difficulty in disposing of his products under the very best conditions.

Community Production.

In considering the matter of standardizing products, the idea of community production should not be lost sight of. Where farmers of a district having more or less uniform climatic and soil conditions, join in the production of a limited number of products of certain varieties or breeds, the process of standardizing these products as well as the securing of responsible buyers will be made far easier than under the present hit-and-miss scheme. Not only will community production assist in improving the grades of products, but from the experience of such communities it makes possible superior selling methods. For instance, the truck growers of Virginia and Maryland, the citrus men of southern California, the apple

growers of Washington and Oregon and the horticulturalists of northwestern Michigan find it far easier to arrange for the marketing of their products through co-operative organizations by reason of the large production of certain crops than do people living in sections where a wide variety of products are grown.

The amateur breeder would naturally think that it would be inadvisable for him to go into a county like Livingston for the purpose of breeding and selling Holstein cattle, but the experience of men in that community shows that the very opposite is true. The large number of this breed of cattle grown attracts buyers from all over the country, and these buyers when once they get into the community like to look over all available sale stock, and where large numbers are bought by one man—as is frequently the case in connection with the Holstein industry of Livingston county—the breeder often can sell stock simply because he happens to be close to where the buyers come.

The organizations that give a portion of their attention to the standardizing of the products of their respective communities, should feel that they are attempting a real constructive work. Such promotion is certain to make easier the solution of the great selling problem. Educating the masses is an irksome process. It not only requires a long time, but always demands an unusual degree of patience. It is well, therefore, that every means of teaching and inspiring producers of each community should be used to encourage the production of better products and their more careful preparation for marketing.

Co-Operative Ownership of Machinery

MANY small farmers cannot afford to own certain costly pieces of machinery, for the reason that the purchase of such helps means an investment out of proportion to the work any individual farmer would have for such machinery to do. In most cases these machines are used a limited time during the year. Thus the individual whose acres are few cannot profitably own and operate expensive binders. Such machines are, however, practically a necessity at the present day. Surely no farmer can grow wheat without a reaper, no dairyman can fill large silos without ensilage-cutting apparatus, no fruit grower can successfully grow fruit without the power sprayer.

As has been stated, these machines are often beyond the means of the small farmer. He is either obliged to resort to more primitive methods or direct his agricultural activities into less profitable channels. Thus it is plainly evident that the small grower cannot compete with the larger one unless some means of co-operative work can be devised.

I have in mind a community that solved the apple-growing problem by simple methods of co-operation. In this case none of the orchards numbered more than 100 trees, and there were, perhaps, twenty owners, forming a sort of apple community. Someone conceived the idea of purchasing a power sprayer and this initial venture proved so successful that a storage plant was added a year or two later. At the start, an association was formed by ten of the leading orchardists for the purchase of the sprayer. One of the members was empowered to do the spraying, and was paid a regular wage for the service. When the machine was not in use for the members, it could be hired by outsiders, at a stipulated rate and a considerable income realized. At the same time a rate for members was established, very low, but reckoned at enough to pay for operator and for necessary repairs and depreciation in

value. To avoid any question as to who should have preference in time of doing the work, a lot-drawing system was established. Two men might desire the machine at the same time and when the question could not be settled amicably, lot drawing was resorted to. So far as I know, no serious disagreement has ever arisen.

The system employed in this case is equally applicable to the farm tractor, the reaper and many other machines. It is also applicable to water power sites, where electric plants can be established for the purpose of affording energy to carry on farm work or lights for the buildings. This phase of the question is fraught with possibilities. The cost of such plants is comparatively little, yet few are availing themselves of such conveniences. Throughout the eastern and central states there are many small streams capable of furnishing sufficient electrical energy to light several buildings, perhaps furnish heat for warmth and cooking and at the same time pump water, thresh grain, cut ensilage and do many such tasks on the farm and in the household.

Co-operation applies particularly to electrical plants, or the owner of water-power sites may develop the plants and sell the energy to his neighbors. In the latter case it might mean the employment of more capital than the average small farmer can command. Where strict co-operation is employed, cost and running expenses can be figured on basis of energy used.

Co-operative selling has been developed to a considerable degree; in a lesser degree co-operative buying is practiced, but as yet co-operative ownership is not commonly practiced. I believe this last named scheme is destined to lift many of the smaller farmers out of the rut.

N. H.

CHAS. H. CHESLEY.

The U. S. Department of Agriculture reports that ten per cent of the apples placed in cold storage last fall remained in the coolers May 1, 1915.

WITH THE MICHIGAN "CO-OPS."

The Litchfield Creamery Association reports an increase of \$12,000 in business done over that of the previous year and officers have been re-elected as follows: President, George Hutchings; treasurer, L. B. Eggleston; secretary, W. E. Sheldon. Litchfield co-operative shippers handled 1,322,250 pounds of live stock during the past year, with hogs selling at an average of 75 cents per cwt. Directors have been selected as follows: Hubert LaFleur, J. D. Hawkes, C. J. Stoddard, L. B. Eggleston and W. E. Sheldon.

Jonesville has a co-operative shippers' association, with Israel Hicks as manager, and active operations started by shipping a double-deck car of live stock to Buffalo.

The Hillsdale County Co-operative Association has affected a permanent organization and elected the following officers: President, B. S. Lamb; vice-president, Farley Ball; secretary-treasurer, Adam Beaver; manager, S. K. Kinney.

Farmers in northwestern Jackson county have formed the Springport Shippers' Association, with the following officers: President, Dwight Peters; secretary, Wm. Ford; treasurer, H. Wilbur; directors, the officers, David Aultman and Elmer Losey.

Wexford county is making a good start as a Shorthorn cattle breeding district. Recently an association was formed at Mesick, similar to the one at Harrietta, and an association will also be formed at Hoxeyville. Officers of the Mesick association are: President, A. O. Light; vice-president, Samuel Toman; secretary-treasurer, Henry Mansfield.

Michigan Experiment associations have been formed by farmers of Tecumseh township, Lenawee county, and by Fayette farmers in Hillsdale county, to co-operate with the M. A. C. in seed selection and other work. Officers chosen are as follows: Tecumseh, president, W. E. Wilson; vice-president, H. B. Eaton; secretary-treasurer, D. T. Hall. Fayette, president, Henry Packer; vice-president, W. N. Glasgow; secretary-treasurer, Chas. T. Kimball.

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Crop and Market Notes.

Michigan.

Shiawassee Co., May 14.—Wheat and rye are looking fine. Oats and hay are growing slowly, but good weather will help. Not much fruit through here. Farmers busy preparing their corn ground. Large acreage of sugar beets planted this year. Some building going on. Pigs and colts abundant. Wheat \$1.44; oats 56c; beans \$2.90; butter-fat 26c; eggs 17c; wool 29c. A large acreage of beans will be planted with northern seed.

Calhoun Co., May 10.—Pastures, wheat, rye and meadows look fine. Plowing for corn is well along. There is the usual amount of all kinds of spring crops being sown. The outlook for the fruit crop is good, and a good deal of spraying is being done. There is about the usual number of spring pigs and lambs, and a good crop of wool, which is bringing 28c per pound. Butter-fat 28c; butter 25c; eggs 16c; fat lambs 8c; hogs 7c.

Sanilac Co., May 11.—Wheat, hay and meadows have not made much growth as yet, on account of the dry weather, but the last few days we have had some rains. Live stock is all out to pasture. Barley is coming up and oats about all up. Plowing for corn and beans will soon be finished. Pig crop fair; few sheep raised here. Eggs 19c; butter-fat 27c; dairy butter 25c.

Washtenaw Co., May 10.—Rains are rapidly putting pastures and meadows in first-class condition. Wheat and rye promise large crops. Indications are for more than a normal acreage of corn and oats. Corn ground is mostly plowed. The bloom on fruit trees is immense, and a large amount of spraying has been done. The pig and lamb crops are close to 100 per cent. Some live hogs going to market at \$7.25; fat calves \$6; eggs 18c.

Pennsylvania.

Perry Co., May 10.—Wheat and rye a poor stand. Corn planting progressing slowly on account of the frequent showers. There will be an increased acreage of corn. Indications are for a big fruit crop, and nearly everyone spraying their trees. Spring work is well along. Oats are beginning to grow nicely. The pig and lamb crops are about normal, but not many sheep fed here. Wool is selling at 25c for unwashed. Wheat \$1.45; oats 50c; corn 75c; potatoes 65c; butter 26c; eggs 16c.

Ohio.

Carroll Co., May 10.—Most farmers finished corn planting last week. Oats and barley look good. Meadows are coming on nicely. Most wheat looks good. Wheat \$1.45; corn 75c; oats

55c; potatoes 50c; timothy seed \$4.

Clermont Co., May 10.—Wheat, rye, meadows and pastures look fine. The farmers are busy planting corn, although some corn is already up. Potatoes are up and growing nicely. There will be the usual acreage of corn, beans, cabbage, tobacco and potatoes. An unusually large amount of spraying being done this spring, and prospects are for a fair fruit crop. The spring lamb crop was small, but pigs about as numerous as usual. Butter 24c; eggs 17c; poultry 15c; wool 26c; timothy hay \$21; clover hay \$19; corn 80c; oats 55c.

Guernsey Co., May 10.—Wheat, rye and meadows in fine condition and are above the average. Some corn has been planted. About usual acreage of the various crops will be grown. Good prospects generally for fruit, and most growers are spraying. The spring pig and lamb crops are about as usual. Considerable road improvement work going on. Wheat \$1.40; corn 85c; hay \$20; eggs 20c; butter 25c; wool will start off at about 25@30c.

Paulding Co., May 10.—Pastures, meadows, wheat and rye looking good. Some oats and sugar beets put in. The oats look fine. A considerable acreage will be planted to corn. Fruit prospects are good, and some spraying has been done. There are a good many spring pigs and they are doing well, but the lamb crop is short. The wool clip will not be large. Corn \$1.02 per cwt; oats 53c; hogs \$6.75@7; eggs 20c; butter-fat 29c.

Wayne Co., May 10.—Weather cool with light frosts reported. Oats all sown and looking fair. Wheat is good and making a rapid growth. New seeding is fine. Pastures are good and live stock is just being turned out. Corn planting is the order of the day. There is about the usual acreage of corn and oats. Fruit trees are full of bloom and prospects are good. Growers are spraying liberally. Pig crop about average. Wheat \$1.50; butter 28c; eggs 18c.

Madison Co., May 9.—The pastures, wheat and all growing crops are suffering for want of moisture. Spring work is well advanced and a large acreage of corn is planted. Fruit prospects good. Young stock, lambs and pigs doing nicely. Wool is not very plentiful, price 25@30c.

Indiana.

Allen Co., May 12.—Frosts visited this vicinity, but no serious effects are reported. Strawberries are arriving in large quantities. Wheat \$1.43; corn 80c; eggs 20c; creamery butter 33c; potatoes 65c; chickens, live 17c.

Wayne Co., May 10.—Spring work is well advanced. A large acreage of corn has been put in, though weather is cool for its germination. Oats and young clover are doing nicely. Pastures and meadows rather backward. Wheat and rye unusually good. Fruit prospects are fair, but not much spraying done. A large percentage of the spring pigs has been saved and are doing nicely. All live stock has wintered well, but has not been placed on pasture. Not much wool clipped yet, and buyers are offering 25c.

Missouri.

Vernon Co., May 10.—Wheat damaged by chinch bugs, some fields being totally destroyed. Not a very large acreage of corn put out. Pastures and meadows are fine. Live stock doing well. The apple crop will be small where not sprayed. Peach trees are full of fruit. Strawberries beginning to ripen, with a good crop. Horses and mules scarce and high. Milch cows \$50@100 butter 25c; eggs 16c; wheat \$1.25; corn 70c; oats 45c; hay \$8 per ton.

Nebraska.

Hitchcock Co., May 10.—Weather is cool with plenty of rain and some frost. Farmers are planting corn. Pastures are fine, wheat looks good. Fruit promises to be good. Spring litters of pigs are not very large. Wheat \$1.38; hogs \$6.75; eggs 15c; butter-fat 28c.

Cass Co., May 10.—Meadows, pastures and wheat remarkably good. Fruit prospects good, but little spraying done. Farmers are busy planting corn. Spring pig crop short. Wheat \$1.46; oats 50c; corn 68c; butter 22c; butter-fat 28c; hogs \$6.80; hay \$6; potatoes 90c; apples \$1.25; no sheep here.

South Dakota.

Todd Co., May 10.—Plenty of rain, and pastures and meadows are in good shape. Small grains are fair. Most farmers will plant more corn than usual. Spring pigs doing well. Plenty of feed for live stock. No lambs and no market for wool here. Eggs 15c; butter-fat 20c; corn 65c per bushel.

North Dakota.

Foster Co., May 11.—The recent rains have improved meadows and pastures, also the new seeding of spring wheat. There will be an increase in the acreage of corn, but fewer potatoes will be planted. Large numbers of stock cattle are being shipped in for grazing purposes. Cattle \$4.50@7; hogs \$6@6.50; butter 20c; eggs 15c.

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Markets.

WEATHER FORECAST.

For week beginning Wednesday, May 19. Region of Great Lakes, rain for two days except extreme northern districts, followed by generally fair weather during remainder of week; continued low temperatures first half of week; warmer later.

GRAINS AND SEEDS.

May 18, 1915.

Wheat.—This market has been under the cloud of international politics during the past week, for which reason traders appear to hedge on quotations for fear that this country might become entangled in war with Germany. But now that there is less likelihood of such an outcome dealers have become more optimistic and values were advanced three cents on Monday. American exports continue large, and during the past week over 8,000,000 bushels were sent to Great Britain while her visible supply is 9,000,000 bushels less than at this time last year. Generally speaking, the new crop is very promising, however, in Missouri, Oklahoma and Kansas there are reports of damage done by the Hessian fly and chinch bug. Primary receipts on Monday exceeded one million bushels. One year ago No. 2 red wheat was quoted at 98½¢ per bushel. Prices for the past week are:

	No. 2	No. 1	July
Wednesday	1.56	1.52	1.31
Thursday	1.55	1.51	1.30
Friday	1.53	1.49	1.27½
Saturday	1.52	1.48	1.27½
Monday	1.55	1.51	1.29
Tuesday	1.54	1.50	1.26

Corn.—The splendid weather farmers have had for preparing ground and planting their new crop has had a slightly bearish effect upon the trade. Primary receipts have also been liberal. The recent rains have also insured ample moisture to carry the crop along for some time. The visible supply shows a substantial decrease and domestic demand is about normal. One year ago No. 2 corn was quoted at 73¢ per bushel. Prices for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	77½	78½
Thursday	77½	78½
Friday	77	78
Saturday	76½	77
Monday	76½	77
Tuesday	76	76½

Oats.—This cereal is holding at the quotations of a week ago. There is a good local demand and offerings are only ordinary. The new crop is growing nicely in all important oat growing sections. One year ago standard oats were quoted at 43½¢ per bushel. The prices for the week are:

	Standard.	No. 3
		White.
Wednesday	56	55½
Thursday	56	55½
Friday	56½	56
Saturday	55½	55
Monday	56	55½
Tuesday	55	54½

Rye.—This cereal remains steady at last week's quotations. No. 2 cash, \$1.18 per bushel. The market is lifeless.

Beans.—Demand easy; trade steady. Detroit quotations are: Cash \$3.05; June \$3.10. Chicago trade is ordinary and quiet. Pea beans, hand-picked, choice, quoted at \$3.20; common \$2.95 @ \$3.10; red kidneys \$3.25 @ \$3.65. At Greenville farmers are receiving \$2.70 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 \$7.90; seconds, \$7.70; straight \$7.30; spring patent \$6.10; rye flour \$6.70 per barrel.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$26; standard middlings \$30; fine middlings \$33; cracked corn \$33; corn and oat chop \$30 per ton.

Hay.—Quotations higher. Carlots on the track at Detroit are: No. 1 timothy \$18@18.50; standard \$17@17.50; No. 2, \$16@16.50; light mixed \$17@17.50; No. 1 mixed \$16@16.50; No. 1 clover \$14@14.50.

Chicago.—Offerings are moderate and demand fair. Prices are easy. Choice timothy \$18@19; No. 1, \$17@17.50; No. 2, \$15.50@16.

New York.—Easy. No. 1, \$22.50@23; No. 2, \$21.50@22.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market easy and quiet with large supply and light demand. Prices are lower. Extra creamery 26c; firsts 25c; dairy 21c; packing stock 18c.

Chicago.—Market is easy at prices 1c lower than last week. Demand light and offerings large. Extra creamery 26½c; extra firsts 25½@26c; firsts 24@25c; seconds 20@23c; packing stock 19c.

Elgin.—Market is easy and quiet. Prices are 2c lower than last week. Quotation for the week 25½c.

Poultry.—Market is quiet, supply is light. Hens are higher, other kinds unchanged. Live.—Broilers 1@1½ lbs. 32@35c; hens 17@17½c; ducks 15@16c; geese 10@11c.

Chicago.—Larger receipts caused an easy feeling and a decline of 1c in prices of fowls. Demand was fair. Fowls, good weights, 15c; broilers, ¾@1 lb. weights \$3@4 per dozen; 1¼@1½ lb. \$4.50@5.25; 1¾@2 lb. \$6@7; ducks 13c; geese 8@9c.

Eggs.—Market is active at unchanged prices. Fresh stock sells at 19½c per dozen.

Chicago.—The market is steady with little change in prices. Trade is good. Miscellaneous lots, cases included 17@18½c; ordinary firsts 16½@17½c; firsts 18½@18½c.

Veal.—Quoted steady at 12½@13c for fancy, and 10@11c for common.

FRUITS AND VEGETABLES.

Apples.—Market is firm at higher prices. Supply is light. Demand is satisfactory. Baldwins \$3.75@4 per bbl; Ben Davis \$2@2.50; Steele Red \$4@4.50.

Chicago.—Market steady for sound fruit of good color. Prices are higher. Baldwins \$3.50@4.25; Ben Davis \$3@3.25; Northern Spy \$4@6.

Potatoes.—Market firm with moderate demand. Quoted at 35@38c per bushel in sacks. At Chicago the market is firm and active. Good stock in demand. Michigan white in bulk quoted at 43@47c per bushel; at Greenville potatoes are selling at 25@27c per bushel.

WOOL.

Boston.—Reports on wool transactions indicate a general tendency on the part of dealers to meet prices asked by growers, thus in the western states growers are now getting practically what they at first demanded, and in the fleece states a movement toward better prices is apparent. Generally speaking, Ohio and Michigan farmers are getting from 27@30c at their local dealers. Whether prices will advance is a question; however, it would appear from the fact that eastern manufacturers are taking advantage of every good opportunity to secure desirable lots at the present range, that the chances for future advances are good. Farmers in the central states do not appear anxious to get rid of their fleeces, and this conservatism will probably aid materially in boosting local quotations later on. International politics is a factor of uncertainty that both growers and dealers must take chances on, for it is as likely to push quotations way above what they now are as to cut them down. Boston prices for Michigan unwashed combing range from 29@34c; do. clothing 24@25c; do. delaines 26@27c. Very few shipments from the fleece states have reached the eastern markets up to date.

GRAND RAPIDS.

The city market is beginning to do business in a small way, handling the early green stuff and some hay. Prices run about as follows: Potatoes 35@40c; pieplant 50c; lettuce 7@8c; spinach 85c; asparagus 90c@1; radishes and green onions 10c. Loose hay is bringing \$12@14. The egg market is firmer this week, with dealers paying 18c, case count. Grain prices range as follows: Wheat \$1.43; oats 58c; corn 76c; rye \$1; beans \$2.75.

DETROIT EASTERN MARKET.

The eastern market was well patronized by both sellers and buyers Tuesday morning, and prices were being well maintained. Potatoes sold at 60c for best quality; asparagus 70@75c per dozen; lettuce 75c per basket; spinach 40c; rhubarb 10c per bunch or 3 for 25c; onions three bunches for 25c; eggs 24@25c per dozen; loose hay was offered sparingly and brings from \$20@23 per ton.

LIVE STOCK MARKETS.

Buffalo.

May 17, 1915

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

Receipts here today as follows: Cattle 135 cars; hogs 115 d. d.; sheep and lambs 45 d. d.; calves 1250 head.

With 135 loads of cattle on our market here today and 18,000 reported in Chicago, with a lower market there, all cattle sold here from barely steady with last Monday to 15@20c per cwt. lower. The market was dull and draggy and at the close of the market there are a few loads of plain, com-

mon, weighty cattle unsold. However, we are of the opinion that cattle of all weights that are of good quality and well fattened have seen as low a market today as they will see any time this summer. However, we would caution our friends in the country to be careful about buying plain and half-fat cattle of any kind, as they are very hard to dispose of at satisfactory prices. The best cattle selling here today, 1200 lbs. and up, \$8.50@8.80; the best light cattle, weighing from 750 to 900 lbs., from \$8.40@8.75.

We had a liberal supply of hogs here today and while the opening trade was fairly active at shade lower prices than Saturday, late market was extremely dull and all hogs arriving around noon were left unsold. All good grades of hogs sold at \$8.20@8.25; pigs generally \$8; roughs \$6.75; stags \$4.50@5.50, with an occasional fancy one up to 6c per lb. About ten double decks of hogs are going over unsold and looks like we will have an easier trade tomorrow.

The market was active today on lambs and sheep, with prices 15c lower than the close of last week; most of the choice handy lambs selling at \$10.70. Look for steady to strong prices the last of week with moderate receipts.

We quote: Lambs \$10.65@10.75; cull to fair \$6@10.50; yearlings \$8@9.25; bucks \$3.50@6; handy ewes \$7.75@8; heavy ewes \$7.50@7.75; wethers \$8.25@8.50; cull sheep \$3@5.50; veals, choice to extra \$9.25@9.50; fair to good \$7@9; heavy calves \$5@7.

Chicago.

May 17, 1915.

Cattle, Hogs, Sheep.

Receipts today..18,000 35,000 8,000
Same day 1914..21,200 28,990 18,677
Last week.....36,715 97,732 56,318
Same wk 1914..38,299 111,337 84,572

Shipments from here last week amount to 6,716 cattle, 14,300 hogs and 7,499 sheep, comparing with 15,505 cattle, 18,079 hogs and 21,007 sheep the same week last year. Hogs received last week averaged 232 lbs.

Cattle of desirable quality went at steady prices today, but buyers were disposed to insist on a small decline for others. Hogs were less active than usual and averaged 5c lower, with sales at \$7.25@7.92½. Sheep and lambs were slow, and buyers were bidding lower for the less attractive offerings.

Cattle were extremely active last week, with a fair eastern shipping demand, although the outward movement was much smaller in volume than a year ago as an inevitable result of the quarantine maintained at the stock yards on part of the offerings. With further moderate supplies, prices underwent additional advances of 15@25c all along the line, and sales were made at the highest figures seen in a long time. The sensational transaction of the week was the sale of 24 head of fancy Angus yearling steers that averaged 1161 lbs. at \$9.65, the lot being really show cattle. No other sale was made above \$9.25, the bulk of the steers going at \$7.75@8.75, with a very fair showing of steers at \$8.80@9. The commoner lots of steers of light weight found buyers at \$7@8, with scattering small sales at \$6.50 and over, while medium grade lots sold at \$8.25@8.45, good heavy steers at \$8.50 and over and choice lots at \$8.75@9. Yearlings of the choicer class were in strong demand at \$8.75@9.25, with sales all the way down to \$7.50@8 for the poorer yearlings that were marketed too early. Butchering cows and heifers had an active demand at the highest prices seen in many weeks, sales being on the basis of \$5.30@9, the best cows bringing \$8, while numerous sales were made of mixed lots of little yearling steers and heifers at \$8.25@9. Cutters sold briskly at \$4.60@5.25, while canners sold at \$2.75@4.55 and bulls at \$5@7.90. Calves were marketed liberally from the dairy districts of Wisconsin and adjoining states, and there was a good demand at \$9.25 for prime light vealers down to \$5@7 for heavy lots. Conditions are unusually good for owners of well-bred young cattle, and it would be a serious mistake to market them in a thin condition, thereby sacrificing liberal profits that would be derived at a later time by finishing them properly.

Hogs have continued to show a rather firm undertone for another week, with a good local packing demand, while eastern shippers purchased much more freely than a few weeks ago, when quarantine restrictions were more rigid, although shipments from here continued much smaller in volume than a year ago. Receipts were much smaller than a week earlier, but the receipts in all western packing points for the year to date have ran far ahead of those for the corresponding period last year. Not a great many pigs or underweights are shipped in, and recent Chicago receipts averaged in weight 234 lbs., the same as a year ago and five pounds less than two years ago. Prime light

shipping hogs are still market topers, with sales of choice heavy weights at a discount of about 15c from top prices. The close of the week saw hogs selling at \$7.30@7.95, with pigs bringing \$5.50@7.75. A week earlier hogs brought \$6.90@7.67½.

Since January 1 receipts of sheep and lambs at the six principal western markets have been approximately one million head less than for the same time last year. This explains why recent sales were at the highest prices on record, offerings here and elsewhere running greatly short of actual trade requirements. The greater part of the receipts arrive shorn, with fed lambs making up the great bulk of the daily offerings and not a great many spring lambs offered so far. Closing sales were made of wooled Colorado lambs at \$11@11.65, shorn western lambs at \$8.50@10.15, shorn yearlings at \$8.75@9, shorn native ewes at \$5.50@7.90 and shorn bucks at \$6@7. Spring lambs sold at \$8@13 per 100 pounds.

Horses were marketed less freely last week, country shippers realizing that the demand had fallen off, but there were enough to go around, with no strong demand except for army horses for shipment to England and Belgium. Army horses sold once more on the basis of \$135@185, but otherwise prices were weaker on the basis of \$70@95 for inferior horses, \$100@145 for farm workers, \$140@170 for farm mares, \$175@250 for commercial chunks and \$200@230 for wagoners. Buyers of the best drafters seemed unwilling to pay over \$250.

LIVE STOCK NEWS.

On the first of the month Chicago cold storage warehouses held 4,565,000 lbs. of butter, comparing with 9,679,000 lbs. a year earlier, being 2,685,300 lbs. less than holdings of a month earlier. Such holding of eggs stood at 1,616,000 cases, being 1,385,000 cases more than a month earlier, and comparing with 1,094,000 cases held a year ago. On every considerable decline in prices for eggs or butter there is sure to be a good demand from speculators for stocks to place in cold storage for future consumption.

Late reports from southern Ohio are that grass was never better than it is now, and the farming outlook could not be brighter, but, unfortunately, there is a serious shortage of cattle in pastures. Paul Chinn, of Chicago, who recently visited that section, says because of the cattle shortage, he looks to see prime beefs go to \$10 per 100 lbs. later.

The Department of Agriculture, several days ago, reported that only four infected herds of cattle were discovered in the country during the previous week, and all were promptly slaughtered. These outbreaks were in Pennsylvania, Maryland, New York and Illinois. A total of 147,644 animals have been found infected in the United States since the outbreak in last October, comprising 2,910 herds. Included were 68,910 cattle, 69,531 hogs, 9,107 sheep and 96 goats.

Slowly, but surely, quarantine restrictions are modified, and quite recently eastern hog shippers have been able to extend their operations in the Chicago market. The Monday receipts are largely sent from unquarantined districts, and as these hogs are placed in the Chicago stock yards "free division," eastern shippers are in a position to buy freely, but exactly opposite conditions are seen on Tuesday. This will explain why on a recent Monday over 8,000 hogs were shipped out of Chicago by eastern shippers, while on the next day nearly all the buying was left to the Chicago packers and smaller butchers. Western packing continues on a much larger scale than a year ago, and a great deal of product is being cured and stored away for future consumption.

Receipts of South American beef in New York for three consecutive weeks aggregated 68,408 quarters, the equivalent of 17,102 cattle.

Robert and William Coates, two well-known young stock feeders of Neponsett, Ill., were on the Chicago market recently with a carload of heavy cattle that sold for \$8.10 per 100 pounds. They said less than 10 per cent of the winter-fed cattle and hogs remained in the country, while hardly any cattle are going on feed. They also stated that the crop of spring pigs is exceptionally good. One of the brothers had 65 pigs from ten sows, while the other had 90 pigs from 14 sows. They said the spring had been favorable for the pigs.

Frank Dowd, a prominent stock feeder of Iowa, arrived in the Chicago market on a recent day with two cars of cattle of his own feeding. He said that big money in cattle feeding will be made during the approaching summer and autumn months, but very few of the winter feeders will get any particular benefit from a good market, as few are replacing cattle that are being marketed with cattle to go on summer feed.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

May 13, 1915.

Cattle.

Receipts 1652. The market opened at the local stock yards this week with receipts as shown above and most everything handled in good shape.

The Live Stock Commission at Lansing have placed three cattle in the yards that are to have the run of the place and if they don't get hoof-and-mouth disease in three weeks the yards will be opened for everything and shipments can once more be shipped back to the country for feeding purposes and milch cows handled as usual. If they get the disease the yards will again be closed, as they have been thoroughly cleaned and disinfected there seems to be little chance for anything new to develop.

The cattle trade this week was active and 15@25c higher than they were a week ago; the quality was good but too many of the one kind were on sale and the close on this account was a trifle dull; most everything offering was finished steers, common grades of cow stuff was wanted, but was scarce.

Best heavy steers \$8; best handy weight butcher steers \$7.25@7.75; mixed steers and heifers \$6.50@7.25; handy light butchers \$6@6.50; light butchers \$5.50@6.25; best cows \$5.75@6.50; butcher cows \$5@5.50; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$5.50@6.50; bologna bulls \$4.50@5.25; stock bulls \$4.50@5.50.

Sandel, S. B. & G. sold Kull 26 steers av 849 at \$7.25, 3 butchers av 910 at \$6.35, 1 heifer wgh 570 at \$6.35; to Kamman B. Co. 1 bull wgh 1110 at \$6.50; to Bresnahan 2 steers av 1110 at \$7.75, 1 cow wgh 1150 at \$6, 1 bull wgh 1580 at \$6; to Sullivan P. Co. 24 steers av 958 at \$7.85, 4 cows av 1000 at \$6.25, 5 stockers av 950 at \$7.60, 1 cow wgh 1140 at \$6; to Newton B. Co. 1 bull wgh 900 at \$6, 23 stockers av 963 at \$7.75, 1 bull wgh 1020 at \$5.50; to Bresnahan 2 bulls av 560 at \$5.75, 1 heifer wgh 600 at \$7; to Sullivan P. Co. 4 cows av 1000 at \$6.25, 5 do av 950 at \$6; to Mich. B. Co. 4 butchers av 750 at \$7, 4 do av 427 at \$5.50, 1 cow wgh 920 at \$6; to Bresnahan 1 bull wgh 1120 at \$6.50, 1 heifer wgh 770 at \$6.25; to Mich. B. Co. 5 stockers av 870 at \$7.65.

Lowenstein sold Breitenbeck 22 steers av 1050 at \$7.70, 7 do av 810 at \$7.75.

Veal Calves.

Receipts 1032. The veal calf trade opened up strong with the tops selling at \$9 and other grades \$7@8.50. The trade on Thursday was not quite so active and will close 25c lower.

Roe Com. Co. sold Barlage 1 wgh 130 at \$8.50; to Applebaum 8 av 125 at \$8, 3 av 150 at \$8.50.

Haley & M. sold Hammond, S. & Co. 6 av 140 at \$9; to Thompson Bros. 1 wgh 170 at \$9, 2 av 130 at \$7, 13 av 150 at \$9.

Sheep and Lambs.

Receipts 1565. The supply of sheep and lambs was very light, as it has been for several weeks. The general market was strong at Thursday's prices, especially so on best grades of lambs. Common thin lambs should be held in the country, for they cannot at present be shipped back into the country and are not wanted by the butchers. The close was strong. Best lambs \$9.75; fair do. \$8.75@9.25; light to common do. \$6@7.25; fair to good sheep \$6@7; culls and common \$4@5.50.

Bishop, B. & H. sold Mich. B. Co. 248 lambs av 90 at \$9.50, 7 sheep av 116 at \$6.25; to Sullivan P. Co. 6 do av 133 at \$6.75, 28 lambs av 68 at \$8.25; to Newton B. Co. 116 do av 65 at \$9.25; to Thompson Bros. 97 do av 75 at \$9.60, 26 do av 55 at \$7; to Mich. B. Co. 8 sheep av 120 at \$6.50; to Parker, W. & Co. 23 lambs av 65 at \$9, 26 do av 65 at \$7.75, 36 do av 70 at \$8.75, 5 do av 78 at \$9.50; to Fitzpatrick Bros. 121 do av 65 at \$9.50, 5 do av 43 at \$8, 22 do av 73 at \$7; to Mich. B. Co. 15 do av 78 at \$7.85, 27 do av 75 at \$9.25, 5 spg lambs av 40 at \$10; to Parker, W. & Co. 57 lambs av 60 at \$9.60, 5 do av 65 at \$7. Reason & S. sold Sullivan P. Co. 22 lambs av 70 at \$9.25, 4 sheep av 115 at \$6, 14 lambs av 55 at \$8; to Mich. B. Co. 14 do av 65 at \$9.25.

Sandel, S. B. & G. sold Hammond, S. & Co. 19 lambs av 65 at \$8.50.

Hogs.

Receipts 9680. The hog market for the bulk on sale was \$7.65. Sullivan Packing Co. bought a few at \$7.70 but big packers' price was \$7.65.

Friday's Market.

Cattle.

Receipts this week 1902; last week 1345; market steady. Best heavy steers \$7.90@8; best handy weight butcher steers \$7.40@7.75; mixed steers and heifers \$7.35@7.60; handy light butchers \$6.75@7.25; light butchers \$6.50@7; best cows \$6.25@6.50; butcher cows \$5@6; common cows, \$4.25@4.50; canners \$3@4; best heavy bulls \$6.25@6.75; bologna bulls \$5.50@6.25.

Veal Calves.

Receipts this week 1206; last week 1004; market dull at Thursday's close. Best \$8.50; others \$6@8.

Sheep and Lambs.

Receipts this week 1608; last week 1805; market steady. Best lambs \$9.75; fair do. \$8.50@9; light to common lambs \$7.50@8; fair to good sheep \$5.75@7; culls and common \$3.50@5.

Hogs.

Receipts this week 11,852; last week 13,910. Yorkers and pigs \$7.70; others \$7.80.

General expectations are that hogs are going to sell much higher than they have sold of late, although there has been a liberal advance already, based upon the greatly declining receipts in Chicago and other important markets. As a general rule, stock feeders are taking good care of their growing young hogs, and marketings of pigs are far from large. The sharp advance in hog prices has carried up provisions, as well as fresh pork products.

Stockmen owning maturing hogs are greatly pleased by the recent boom in prices. Naturally, few healthy pigs are being marketed.

Heavy steers are catching it these hot days, and owners who have delayed marketing them are paying the penalty. Hot summer weather has been experienced, and heavy cuts of beef are poor sellers in the retail markets of the country. Fat light weight steers are the favorites, next to fat little yearling heifers.

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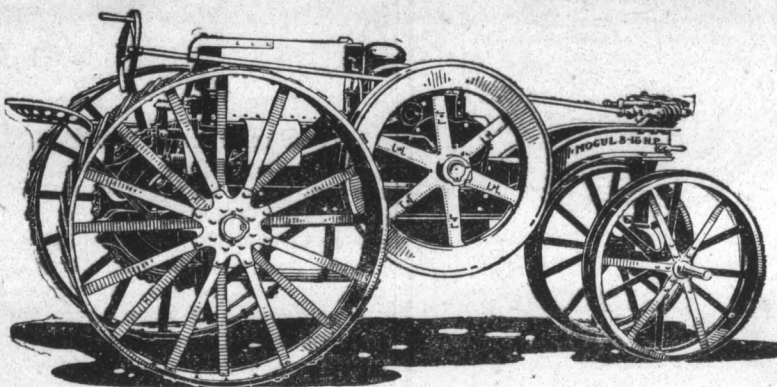
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If we are to far from town, if we have not the auto, or if we can not afford the trip to the city, still to us each day, the R. F. D. man brings the story of the world's doings and we may read and understand. Thus is our desire for entertainment satisfied. Indeed, it is not strange that it is now difficult to keep up any sort of organization in the country. Another difficulty is the lack of the right sort of leadership. With just the right individuals to go ahead, all other difficulties might be conquered.

Let the Granges of Michigan look for such leaders. Can we not begin by doing more and better literary work in our lecturer's hour? Let us organize some lively debates in our Granges. The plan will work. Human nature has not changed. People enjoy these debates and if we will prepare for the discussion of live questions in which they are interested, they will simply crowd our places of meeting.

For these discussions we should choose live questions, not subjects devoid of interest to the public. True, we can not discuss partisan or sectarian questions in the Grange, but there are plenty of matters in which the people are much interested that can with propriety be discussed.

For help along these lines read carefully the suggestions in the State Lecturer's Bulletin, but do not fail to discover now and then a topic in which your Grange is interested, which is not named in the bulletin. This suggestion is to the worthy lecturers who may happen to read this article.

Lecturers, read the bulletin carefully and thoroughly. It will do you good. The best thing it can possibly do for you will be to help you to be yourself more completely. That is, to make you stronger and better able to think and to act for yourself.

But why and how shall the Grange encourage the singing school? First, because less and less people are singing as time goes on. Second, because the art of singing can be taught more cheaply and more generally in this way than in any other, and third, because the uplifting influence of the good singing school is so strong and so potent for good that we can not afford to miss it.

Less and less people are singing today, perhaps in part because they can buy their music cheaper than they can make it, but chiefly because they do not have sufficient opportunity to learn how.

We are teaching some music in the schools, a good many young ladies are taking private instruction, but the boys are not singing to any great extent. Were the singing school revived the boys would sing. Whoever saw a real boy who did not like to go to singing school? I have seen scores of boys who would never sing much, but who would drive miles to attend a singing school. I have lived long enough to see these boys grow up and am sure that while they did not greatly improve in the art of singing, the experience was well worth their while. Some time ago it was my privilege

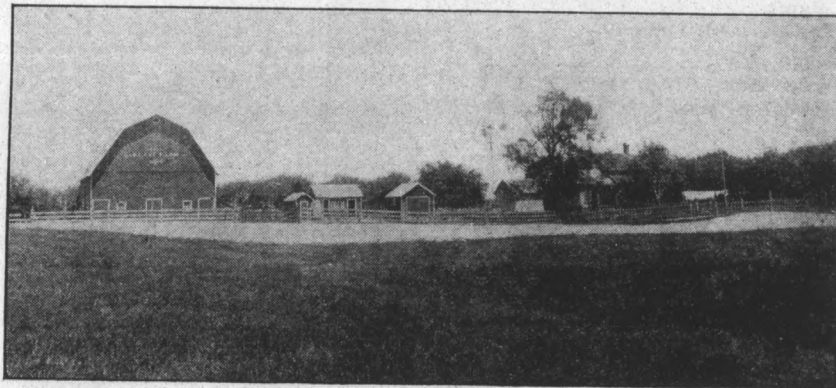
to visit a high school with the best chorus of young men and women that I have ever heard in Michigan. This splendid degree of development came about through the efforts of a conductor who had an ideal and worked toward it every day. It was truly an inspiration to listen to that chorus. Those young people did not need to be warned against the influence of the wrong kind of music. They had learned to appreciate the best in the art, and doubtless it had accomplished more in their intellectual and moral development than they will ever realize.

As I listened to them in some of the best vocal selections yet written, while their hearts thrilled with the same lofty sentiments that once inspired the great masters whose songs they sang, I said to myself, surely this is a work worth while.

That musical conductor was doing work similar to that done by the good conductor of the singing school a few years ago.

Mrs. Morgan, at the late Round-up Institute, found a responsive chord in the public heart, when she gave her address upon "The Old Songs that Live." As I heard the people on every side speaking in highest praise of this lecture, the next day, their words of commendation were proof that art is not dead, that the human heart is as true today as ever, and that human lives are just as susceptible to refining and ennobling influences as ever before in the history of man.

There is little use in spending one's breath in inveighing against the "rotten music" of the day. Give the public something better, and teach them how to execute it and they will discard that which is not worth while.



Oak Lane Farm, Home of Mr. and Mrs. J. S. Brown, of Livingston County.

But how shall the Grange encourage the singing school? The chief difficulty is in finding good instructors. We must simply get along with the best that can be had in this particular. Let each Grange that can do so, arrange for a singing class in its neighborhood. If any member of the Grange can act as instructor, try taking a half hour at each meeting for instruction and musical practice. I believe this plan will work. Of course, if no one in the Grange can instruct in note reading, and not any of the membership can lead in the singing, then it will be up to the Grange to add to its membership some one who can do this work, or else provide for it in some other way.

Here is a splendid work for any Grange that will take it up in earnest. Good singing classes in the communities remote from town, will mean good country choirs, better music at each and every gathering in the community where music is needed, stronger and more serviceful country churches, the discarding of much of the stuff which now passes for music, and in its place the substitution of that which is a potent force for good in human life.

It is to be earnestly hoped that the Granges of Michigan will respond to this suggestion, and on behalf of the young, and otherwise, of those who live in the community, will encourage the literary and debating society and the singing school.

W. F. TAYLOR.

Farmers' Clubs

OAK LANE FARM.

In a recent issue we published a cut of Lone Elm Farm, the home of Mr. and Mrs. C. P. Johnson. Mrs. Johnson was for several years secretary of the State Association of Farmers' Clubs.

Below appears a cut of the buildings on Oak Lane Farm, the home of Mr. and Mrs. J. S. Brown, of Livingston county. Mrs. Brown is the present secretary of the State Association of Farmers' Clubs. This farm was given its name because of the oak trees bordering the lane, a glimpse of which can be seen at the right of the picture. This is another example of naming the farm from some prominent characteristic which is worthy of emulation.

CLUB DISCUSSIONS.

Ladies' Day, at the home of Mr. and Mrs. Orwin Fenton, was one of the most enjoyable meetings ever held by the Columbus Farmers' Club. The program was carried out with the addition of a piano duet by Mesdames Randall and Goodar. Seventy-five guests partook of an extraordinarily good dinner, after which the meeting opened with roll call, the responses consisting of wit and humor. The music and readings were carefully prepared and proved most entertaining. The feature of the afternoon was "Sketches of Famous Women," by Mrs. G. H. Bachele. The following well known women were impersonated in living pictures, Mrs. Bachele giving an enlightening sketch as each

one was represented—Martha Washington, Mrs. Ida Quick; Betsey Ross, Mrs. Bertha Parker; Harriett Beecher Stowe, Mrs. Ella Wheeler; Sojourner Truth, Mrs. Elizabeth Hunt; Pocahontas, Mrs. Bertha Houston; Julia Ward Howe, Mrs. Hughie; Marietta Holly (Samantha Allen), Mrs. Sara Norton; Frances E. Willard, Miss Anna Vogt; Elizabeth Stuart Phelps, Mrs. Emma Vogt; Jane Adams, Mrs. Nellie Fenton; Helen Keller, Mrs. Frances Allington; Louisa M. Alcott, Mrs. Mildred Weeks; Evangeline Booth, Mrs. Lulu Goodar; Carrie Nation, Mrs. Ella McCauley. The meeting adjourned to meet May 27 with Mr. and Mrs. Herman Rix. This will be "Gentlemen's Day," when the men of the Club will have charge of the program, and it is noised about that elaborate plans are being made to surpass the entertainment given by the fair sex.

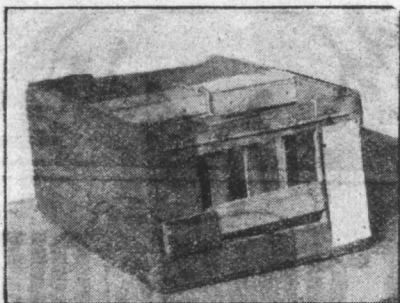
At the April meeting of the Conway and Handy Club, Mr. Julian Carr said in regard to why so many farmers left their buildings unpainted and brush uncured, that many were not financially able to paint buildings; some didn't care to; others would rather use their money some other way. As for leaving brush uncured, many won't cut it until the law compels them to. Mr. S. R. Holmes said it paid to keep buildings up; it improved the appearance of the farm; leaving brush in roadside and fence corners showed shiftlessness; energetic farmers won't allow brush to grow. Mr. Adam Meyer said he heard someone say that taxes would be increased if buildings were painted. M. T. Wilkinson said that owners when in strength and when prosperous kept the farm up in good shape, but when the farm is left to another or passed from one to another, the buildings and fences were first to suffer. Mr. Alton Grant said if there were dollars at roots of brush the brush would soon be gone.

Poultry and Bees.

AN EASILY MADE TRAP-NEST.

I read with interest the article by E. W. Gage on "Selecting the Breeding Hens," which appeared in the Michigan Farmer some time ago. I take exception to his talk about trap-nests. He says they are expensive for the farmer, but all right for the experiment station. Well, if they are good for the experiment station they ought to be for the farmer. Now, I am sending you by parcel post a small model of a nest that any farmer can make in 30 minutes. All he needs is a store box about 14 inches square and 24 inches long, two pieces of No. 9 galvanized wire and about eight galvanized poultry netting staples, and a five-cent cupboard catch.

One piece of galvanized wire is used as a hinge for the trap door and the other is bent somewhat into the shape of a figure 7 and is used to hold the



Trap-nest Closed.

trap door up when it is open. The staples are used to fasten these pieces of wire. The cupboard latch is fastened in front so that it will hold the trap door shut, thus keeping other chickens from entering the nest while it is occupied. It is usually fastened on the side opposite the little piece of wood which serves as a bumper for the door.

There is one trouble with the average man, he says that poultry is a woman's work and that it does not pay. This is because he does not take any interest in it. Will say about this trap-nest, I first saw it on the Lily White Leghorn farm in Kent county, and now the owner is trap-nesting over 1,000 White Leghorn pullets. He told me he had tried all kinds and gave them up for this one, as anyone can make them, and they do not get out of order. He said it was a nest made at the Maine Experiment Station and anyone can make them. I have used them almost two years and know they are right. F. ASTLING.

A PRACTICAL METHOD OF BEE MANAGEMENT.

The following is the method of management practiced by Mr. David Running, a prominent bee-keeper of Huron county:

Bees are taken out of the cellar and placed on their summer stands, they are not disturbed again until the time comes to move them to the out apiary, which is done about dandelion or fruit bloom time. At this time all queens are clipped and an extra hive body, with drawn combs placed on brood chamber. No queen excluder is used, the queen has the use of the two brood chambers, and when clover commences to yield nectar each colony is examined and all queens shaken down into lower brood chamber and the queen excluder is placed directly on the lowest or first brood chamber. In place of returning the upper or second brood chamber, now well filled with brood, directly over the first brood chamber another hive body with drawn combs is placed on first hive body and the upper brood chamber is placed above the second hive body, thus at this time the colonies

are occupying three hive bodies and the queen is in the lowest one with an excluder above to prevent her going up any more. This procedure gives the queen room to lay at full capacity and the bees lots of room to store nectar.

Ten days after this shaking and putting on third hive body, all the brood chambers, now the lowest hive body, are shaken into a hive body containing only full sheets of foundation, and one or two extra hive bodies with drawn combs, are placed immediately above the new brood chamber, with excluder between. Queen cells are also removed from the third hive body at this time. The old brood chamber is now placed right on top of the three or four hive bodies and each colony now has four or five hive bodies and a capacity for from 100 to 150 pounds of surplus honey, these may or may not all be needed. In ten days all queen cells must be removed from the top hive body. If increase is needed an entrance is given at the back of this top hive body and the young queen allowed to hatch and mate and a new colony formed.

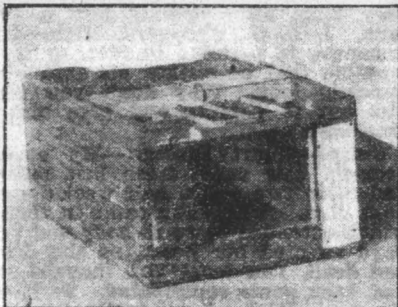
This method usually holds swarming down to a minimum and with few examinations during the summer an out apiary can be run in connection with the home apiary.

All the honey is taken off with bee escapes and the bees are not disturbed and made cross when these are used. F. E. MILLEN.

LACK OF MOISTURE.

Would like to know what is the matter with my eggs. The skin under the shell is so tough the little chicks can not get through the shell. Mecosta Co. Mrs. H. T.

The fact that the chicks will develop in the shell until hatching time and then not be able to break through would indicate that the eggs did not have enough moisture during the period of incubation. The lack of moisture causes a toughening of the skin under the shell and a weak development of the chicks. If an incubator was used, additional moisture should be furnished by the use of a moisture



Trap nest Open.

pan, or if the hatching was done by a hen the nests should be put in a more moist location. Very often chicks which have difficulty in breaking through can be hatched by placing the eggs in warm water for a short time just before the hatching time.

Another possible cause of the chicks failing to come through is the lack of vitality in the eggs. If this is likely to be the cause one should use means to increase the general vitality of the flock.

WHITE DIARRHEA IN CHICKS.

Readers who want a sure preventive for white diarrhea should send to the Wight Company, M45, Lamoni, Iowa, for a 50c box of Chictone. Mrs. Wm. Erickson, of Chanute, Kans., writes that she has not lost one chick with white diarrhea or bowel trouble since she commenced to use Chictone.—Advertisement.

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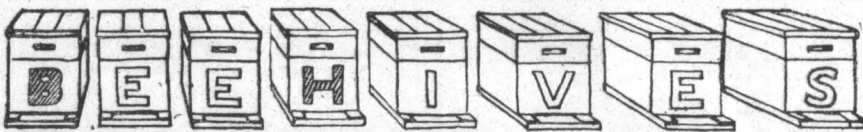
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Eggs For Hatching. White Holland Turkeys 50c each. Toulouse Geese 25c each, Columbian Wyandotte chickens 15 for \$1. Alden Whitcomb, Byron Center, Mich.

S. C. White Leghorns: Bred to Lay. Barron Strain. Eggs \$1.25 per 15 postpaid, \$1 per 100, not prepaid. Breeding hens for sale after June 1st. Bruce W. Brown, R. No. 3, Mayville, Mich.

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

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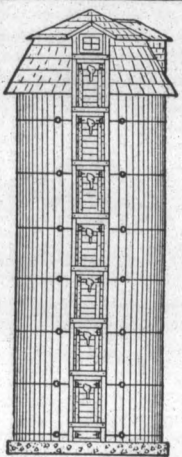
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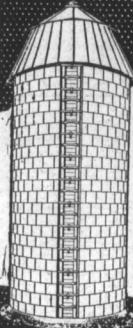
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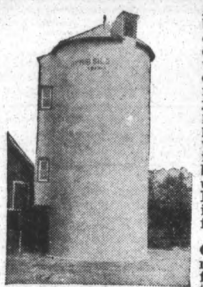
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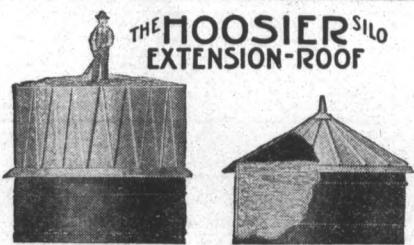
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Veterinary.

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

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

Cattarrh.—Have sow that has head trouble; mucus comes from both nostrils. Her appetite is poor and she is dumpish. F. G. G., Bloomingdale, Mich.—Mix one part powdered sulphate iron, two parts baking soda and three parts ground gentian and give a small teaspoonful at a dose in feed three times a day. She should be well fed, but given no kitchen slop.

Weak Heart.—I have a five-year-old mare that pants when she works. C. B. A., Galesburg, Mich.—Feed her less bulky food, lighten load, and if she has been idle for some time her muscles are doubtless weak and flabby. Put her in condition for heavy pulling and hard work. Feed oats and timothy, also give her 1 dr. of ground nux vomica and a dessertspoonful of tincture of arnica at a dose in feed three times a day. Wash her with tepid water morning and evening.

Partial Loss of Power.—I have five last fall hogs that all went lame at the same time; they weigh about 150 pounds each; they are all lame in hind quarters, when walking legs cross and pigs stagger, wobble and fall. I have fed them on corn, milk and some ensilage. This has been their ration all winter. Since they went lame I have given them some soft coal, weak lye and salt in their milk. M. J., Muliken, Mich.—You fed your pigs an unbalanced ration and now they are suffering from the effects of it. Discontinue feeding corn and ensilage, feed oats, tankage, some oil meal and roots or grass. Also apply one part turpentine, one part aqua ammonia and two parts olive oil to back every day or two. It is not necessary to give them drugs.

Rheumatism.—I would like to know what to do for my hens: first they show lameness, then in a few days are unable to walk at all, then finally die. Whatever this ailment is it attacks both hens and pullets. It can't be lice, or mites for I spray them with medicine every week, then go over the roosts with kerosene. Mrs. R. S., Gifford, Mich.—Your poultry are perhaps kept in too damp a place, or else they have been exposed to storms, or are not fed right. Keep them in a dry, clean, well ventilated place, free from drafts and avoid letting them out on wet ground or to run in wet grass, as the symptoms you give indicate rheumatism. Give each one a ½ gr. of sodium salicylate, and ½ gr. of quinine at a dose two or three times a day.

Everted Vagina.—For six weeks preceding calving my cow has had a bunch which protrudes from vagina which shows only when she is down, but after getting up appears to return to place, but when she calves it is much larger. W. R., Sheridan, Mich.—Your cow suffers from eversion of vagina and perhaps a portion of uterus protrudes at time of calving. She should be kept in a clean place, free from infection when she calves and immediately after calving placed in a stall, with fore feet six inches lower than hind ones. The protruding parts should be washed with one part bi-chloride mercury and 2,500 parts of clean tepid water. Clean hands should be used to return it and a stitch or two taken through upper portion of vulva and if she strains much apply surcingle around body at flanks.

Shoulder Lameness.—I have been blistering a horse that is troubled with shoulder lameness but have failed to help him, and I would like to know what more can be done. C. I. B., Eaton Rapids, Mich.—If blisters have failed, you might try inserting a seaton; however, it is doubtful if you will obtain any better results than you have from blisters.

Raising Orphan Pigs.—I am anxious to know if it is possible to raise orphan pigs on cows' milk from birth. The mother of this litter has chills and refuses to eat and of course her milk ceased. N. E., Lansing, Mich.—As you perhaps know, young pigs should be fed with care, the feeding utensils kept perfectly clean and you should also add both sugar and cream to cows' milk in order to make it as rich in fat as the sow's milk is. Very

soon you can add to their milk some meal; furthermore, you should place water within their reach. Give the sow 4 grs. of quinine and 10 grs. of nitrate of potash three times a day and be sure that her bowels act free.

Loss of Power.—I would like to know what can be done for my brood sow which is down and unable to stand on hind legs. She had a litter of pigs six weeks ago and appears to be in good health, but is not able to stand on hind legs. L. J. J., Breeds-ville, Mich.—You have perhaps fed her too much corn and not enough oats, oil meal, tankage and roots. Drugs are not much benefit in treating this kind of a case, but changing her diet will have a good effect. She should be helped on foot two or three times a day; this is best done by placing canvas under her and assisting her on foot. Apply one part turpentine, one part aqua ammonia and three parts camphorated oil to back daily. Also give her 10 drops of fluid extract of nux vomica and 5 grs. of potassium iodide at a dose three times a day.

Crib-biter.—I have a young horse that cribs in the barn, but not when in harness. Could you tell me how to break him of this habit? E. J. B., River Rouge, Mich.—Arrange his stall so that there are no corners of boards for him to crib on, and set his feed box on the floor. If he sucks wind, buckle strap around neck.

Preventing Horns Growing.—Could you tell me how to kill or stunt the growth of horns on calves? The horn is now about an eighth of an inch long. Is it too late to use a caustic pencil? The calf is six weeks old. F. P., Kingston, Mich.—Chemical dehorners or a stick of caustic potash should be used before the calf is three days old, and even then it is sometimes necessary to use a second application. You can do it now, but it may be necessary to use several applications to prevent horns growing.

Leucorrhea.—I have a mare that has what is commonly called "whites" and would like to know if she can be cured; furthermore, will she get with foal? F. T., Belden, Mich.—A mare suffering from chronic leucorrhea is generally barren. Dissolve 1 dr. of permanganate of potash in two quarts of water and wash out vagina daily. Also give her 1 dr. of powdered sulphate iron and a teaspoonful of hypsulphite of soda at a dose three times a day.

Obscure Lameness.—I have a thirteen-year-old horse that is lame in left fore leg; have had him examined by four different Vets. and they do not agree as to location of lameness and all of them have failed to effect a cure. One thought it a case of shoulder lameness, another in the coffin joint, another contracted hoofs, another sprained fetlock. This lameness is slight at times, severe at others. A portion of the time he stands natural, at others pointing slightly, at others foot back of opposite. No extra heat in any portion of leg and the peculiarity is that he can be driven sometimes twenty miles and show very little lameness, and occasionally he goes very lame after driving him a few rods. I. L. G., Shepherd, Mich.—His lameness is perhaps in foot, or it is possible that he strikes his shin with opposite foot. Why don't you turn him out to pasture and give him a long rest.

Goitre—Heart Disease.—My seven-year-old cow came fresh last month and after two and a half weeks' sickness died. A swelling came in throat which extended down to body and perhaps affected her heart, as she dropped dead. Our local Vet. thought she had been some constipated. F. T. G., Newport, Mich.—I am inclined to believe she had heart trouble which perhaps caused her death; however, your Vet. could tell if she died of bowel trouble.

Switcher.—I have a colt four years old which switches when excited or bothered by her mate. Whenever their heads get together she seems to switch and act as if she was going to kick. J. V., Holland, Mich.—Why don't you bore a hole in each end of a broom stick and tie one end to her bit ring, the other end to mate—this will keep their heads apart and possibly by working her hard she will discontinue this vice. After a mare of this kind is spayed, they usually quieten.

Caked Udder—Capped Hock.—My 12-year-old mare is due to foal May 26 and her bag has been swelled and caked hard for the past week; besides her hind legs are stocked and cap of one leg is badly swollen. R. D., Lindon, Mich.—Apply one part fluid extract phytolacca and two parts olive oil to caked udder twice a day, but when she has her foal, be sure that all this medicine is washed off bag before colt is allowed to suck. Give her 2 drs. acetate of potash at a dose once a day and keep her bowels open. Apply one part tincture iodine and four parts spirits of camphor to capped hock three times a week.

Disinfect Your Pens

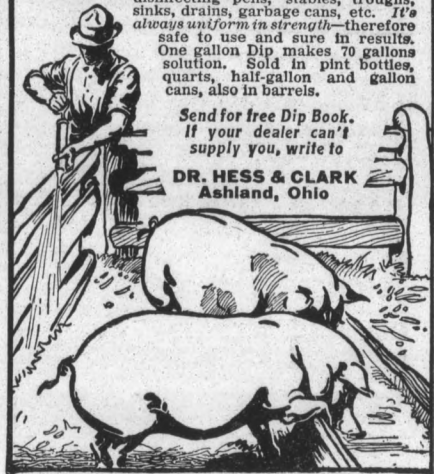
MOST hog diseases are caused from neglect to keep the pens disinfected and free from foul odors. Filthy premises are sure places for the outbreaking of disease and lice. To keep your pens and troughs sanitary you can't use anything better than Dr. Hess Dip and Disinfectant. It is a guaranteed louse killer and a sure destroyer of germs and foul odors. It is used by Dr. Hess himself, who is a qualified veterinarian, doctor of medicine and scientific stock raiser.

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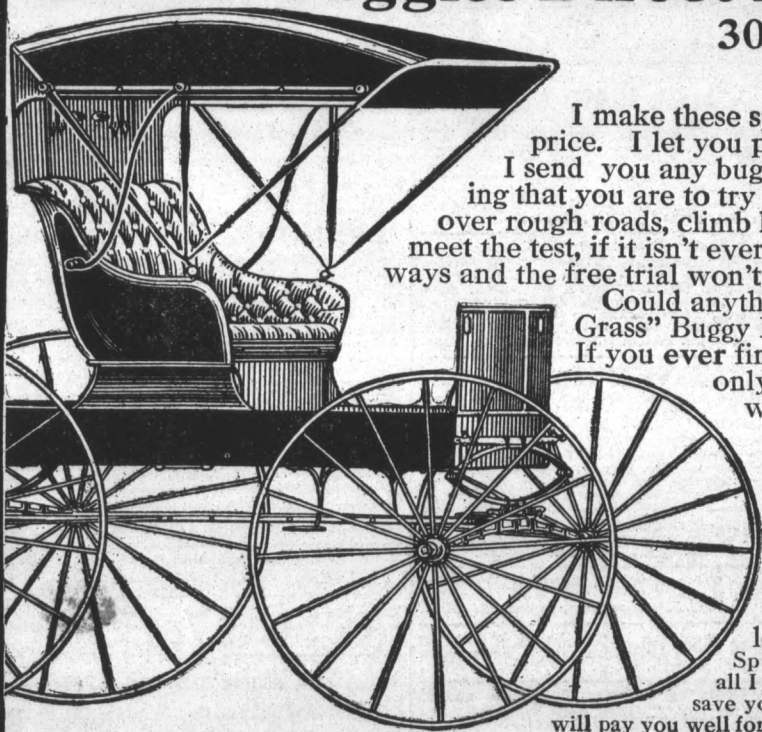
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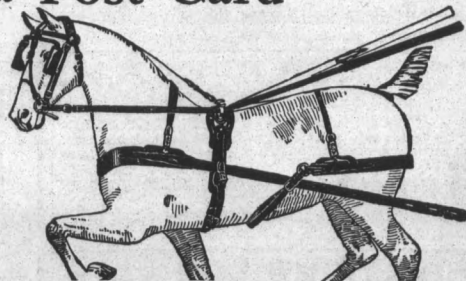
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