

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

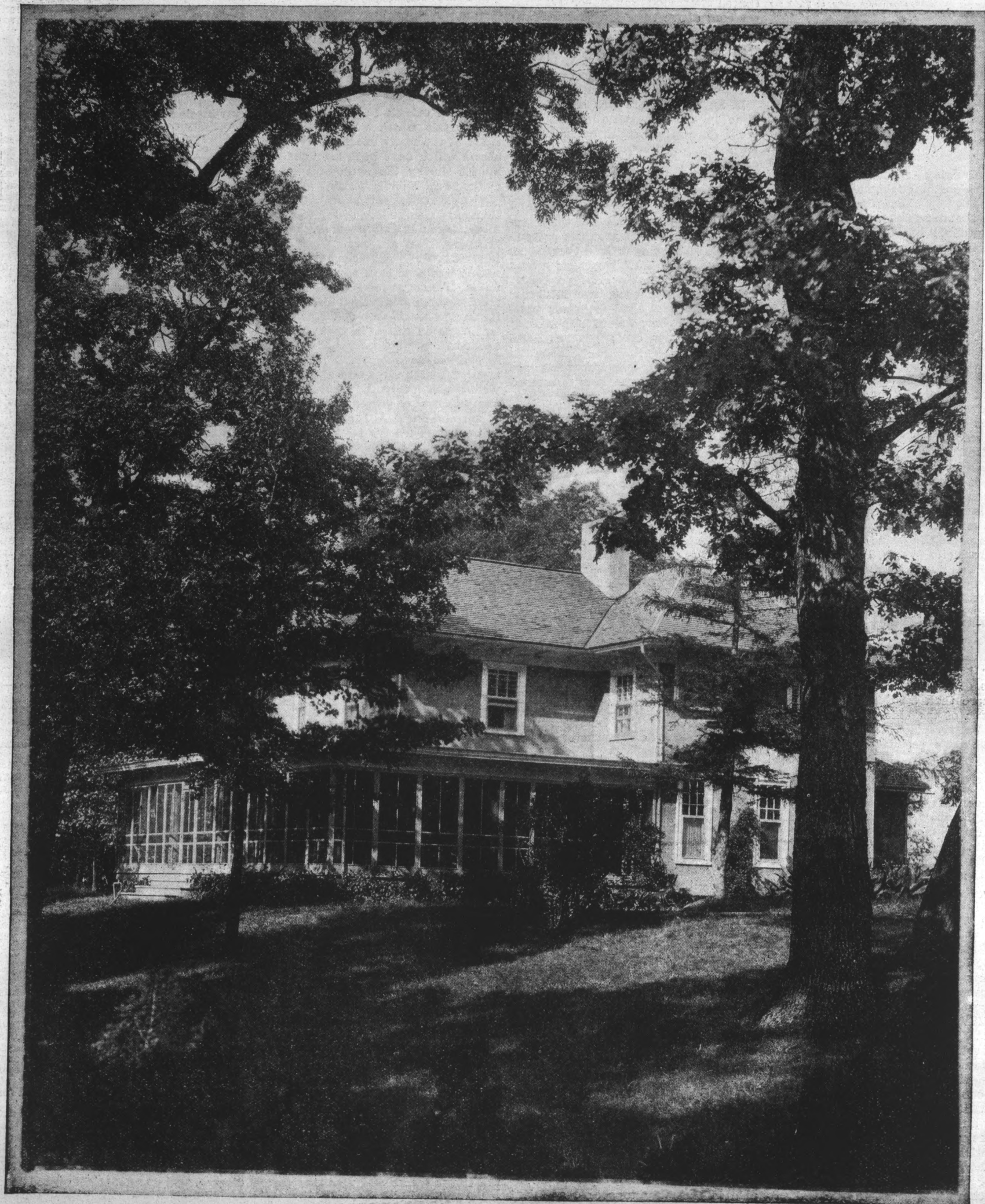
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DETROIT, SEPT. 18, 1915

CURRENT COMMENT.

Fruit Growing as a specialized branch of in Michigan. Michigan agriculture has done much to make the state famous, and the Michigan product has also done much to make fruit a popular diet through its remarkably high flavor. It is the fruit with flavor that gains lasting friends for, if the flavor does not uphold the appeal that the fruit makes to the eye the results are disappointing. Michigan fruit is more apt to pleasantly surprise the consumer than to disappoint him. Its flavor is producing a growing favor in the marketing centers of the country for consumers who are everywhere more discriminating buyers of this product are fast learning that all the beauty of the Michigan fruit is not on the skin.

The geographical location of the state is something for which her people can be generously thankful. She has been bounteously endowed with lakes and her water frontage is rapidly increasing in value as playgrounds for tired city people, but the greatest value this water frontage has to those who are so fortunate as to be located within her boundaries, is its climatic influences. The eastern shore of Lake Michigan made possible the great fruit belt and the Michigan peach. It, with the additional influence of her other bordering lakes and the thousands of inland bodies of water, will do more than anything else to make her one of the chief fruit gardens of the country.

Michigan's prominence in the fruit industry has not been of bonanza growth, nor was it gained by the liberal use of paper and printer's ink; but her eminent position is the result of her having those natural conditions that contribute to the production of the highest quality products; and like all things of steady growth that position is more certain to be permanent and become greater perhaps than the present generation may think, while those sections developed by gifted promoters and lacking some natural conditions will give way in the great competition of quality and lose their identity as fruit producing sections.

Growers in Michigan's fruit belt are prosperous. The illustration of the beautiful home of Robert A. Smythe, Secretary of the Michigan State Horticultural Society, on the front page of this issue of the Michigan Farmer, is an indication of this. Mr. Smythe was one of those men who saw the possibilities of fruit growing in this state and in his efforts as a producer he has more than made good. Western Michigan has a multitude of similar homes which bespeak the prosperity and the well-being of the men who chose to follow this most delight-

ful occupation which is made more so by the generous returns they have received for their labor.

These men have good reasons for their strong faith in the future of the industry. Located amidst the greatest fruit markets of the country which are, or will be, the greatest markets of the world, they cannot, through any stretch of the imagination, guess how intensely it will ultimately be necessary for the land within this region to be cultivated to satisfy the demand for fruit of such quality as the present orchards and gardens are able to grow.

The general review of crop conditions compiled by the bureau of crop estimates gives the composite condition of all crops of the United States on September 1 as 5.5 per cent above their ten year average condition on that date. This is an improvement of 3.9 per cent on the average condition on August 1, indicating general improvement in crop prospects during the past month.

In Michigan there was a slight decline in the composite condition of crops during the month amounting to 5.1 per cent. The average condition of all crops as estimated on September 1 is, however, nearly normal, standing at 99.4 per cent as compared with a general average for the country of 105.5 per cent. The total production of important products as compared with last year is estimated as follows: Corn 111.7 per cent; wheat 110.1 per cent; oats 123.4 per cent; barley 114.4 per cent; rye 103.3 per cent; buckwheat 105.9 per cent; potatoes 100 per cent; hay 115.6 per cent; apples 84.6 per cent; peaches 118.5 per cent.

The increased crop prospects are largely due to a somewhat increased area devoted to crop production in most sections of the country. On September 1 the index figure of prices for all farm products was 6.2 per cent lower than a year ago, 2.8 per cent lower than two years ago, and 3.1 per cent lower than the average of the last seven years on September 1.

These official crop estimates are reassuring testimony as to the general prosperous condition of the agriculture of the country. There have been sectional seasonal losses on some crops due to unfavorable weather conditions, particularly excess moisture, but these have not served to decrease the general prospect to any alarming extent. With the general prosperity of the country's agriculture practically assured, business conditions should continue to show improvement which has characterized recent months.

In another column of this issue will be found a plea urging upon Michigan Farmer readers the importance of making an early selection of seed corn from the fields and curing same in a manner which will insure the best quality of seed for next year's planting. This is in line with efficient farm management which makes for the maximum labor income from the farm.

As a point illustrating the importance of this factor of timely forethought in the matter of management, the writer would refer to an interview he recently had with a hired farm manager who mentioned the fact that he had utilized one of the recent rainy days in sorting over a crib of last year's corn and picking out several bushels of the best ears which he carefully stored away for possible emergency use as seed corn next spring. This farm manager explained that in case an untimely frost should come before this year's crop had matured to a stage which would afford prime seed corn, he would later make an individual ear test of the corn selected from last year's crop and would be able in that way to secure sufficient

seed corn of high germinating quality to plant next year's crop.

This is the kind of forethought which constitutes an essential factor of good farm management. Unless weather conditions are unusually favorable during the next few weeks, the comparative efficiency of every Michigan farmer in the matter of farm management will be demonstrated by the manner in which this particular problem is solved. If unfavorable conditions prevail there is no question but that the seed corn problem will be one of considerable magnitude among farmers next spring, but the efficient farmer will solve this problem at an early date just as he will solve other problems with which he is confronted, in the most efficient and satisfactory manner which is possible under the conditions which must be met.

The West Michigan State Fair, which will be held at Grand Rapids next week has a long list of live stock entries in every department of the stock show, insuring an exhibit in this department of the fair which will be fully the equal of the many excellent live stock shows which have been seen at Grand Rapids during the successful history of the West Michigan Fair.

The horticultural show at Grand Rapids is always fine, owing to the interest taken in this event by western Michigan fruit growers. Competition in fruit exhibits has been further stimulated this year by the offering of valuable silver cups for single exhibits of fruit, flowers and vegetables. Exhibits in the machinery department will be strong as usual, in fact, the management reports a large list of entries in every department, and patrons are assured a high class educational show which will compare favorably with any which have preceded it. The line of entertainment features are superior to those which have been seen in previous years, including thrilling battles in the air showing the development of air craft in modern warfare, daylight fireworks, etc.

The West Michigan State Fair is to the farmers of western Michigan what the State Fair is to those located in other sections of the state, and should have the patronage not only of every farmer in western Michigan who can possibly arrange to attend, but as well the patronage of every farmer in the state who can make it convenient to go to Grand Rapids during the five days of the fair from September 20 to 24.

Notwithstanding unfavorable weather conditions during the early days of the State Fair, and heavy showers during the latter part of the first week, the attendance at this year's State Fair has been very satisfactory and the show was one for which no apologies need be made in any department. In some departments the exhibits were not as numerous as in some past years owing to special handicaps, but the quality was everywhere excellent and the show was of a character to be eminently satisfactory to patrons. The various exhibits will be reviewed in greater detail in a future issue and the live stock awards will be given as in former years.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—At the eastern front the Germans continue their victorious march in the sections before Vilna and Dvinsk. They have reached the Dvina river at Friedrichstadt, which improves their position before Riga and aids in the campaign just south of that point. At the southern extreme of the long battle front, however, the Russians are not only holding the Teutons but have been victorious in several engagements in Galicia. The Turks in the Caucasus Mountains are being hard pressed by the Czar's forces and now that Grand Duke Nicholas is in command it is

expected that much assistance will be indirectly given the French and English at the Dardanelles through the division of Turkish defense to the east. The campaign on the Gallipoli peninsula has been quiet the past week. It appears that the Austrians are determined to save Gorizia which is now seriously threatened by the steady advance of the Italians. Continuous fighting occurs along the Gorizia-Monfalcone-Duina line and a decisive battle is expected soon. Vigorous artillery engagements have followed the activities of the Germans in the western theatre, the crown Prince's armies having taken the leading part in northeastern France and the Vosges mountains. But few minor changes in the alignment have resulted from these battles.

The statement that the Russian cabinet had resigned has been corrected by the government at Petrograd, which declares the cabinet is still organized.

The Mexican situation shows little progress. A note from General Carranza asking the Pan-American conference to meet him on a border town to discuss Mexican affairs is now under advisement and may be accepted.

National.

More than 100 men from the financial centers of this country, representing its greatest financial institutions, greeted the Anglo-French financial commission which arrived in New York city on September 10. To all appearances the event marks the beginning of an era in which the United States will be an important financial world center. It is expected that credits to the amount of a billion dollars or more will be established in this country through these foreign agents.

Relations between the United States and the Teutonic nations of Germany and Austria were again put to a test last week when a note was received from Germany stating that she would not pledge indemnity for losses on the passenger ship Arabic which was torpedoed by a German submarine, and secondly, when it was discovered that Dr. Dumba, Austrian ambassador to this country, and his agents had apparently been active in efforts to embarrass munition manufacturers in the cities of Detroit, Toledo, Cleveland, Flint, Mich., and other industrial centers. The United States has demanded the recall of Ambassador Dumba. The press of this country, including Austrian publications, support the President in this action. The latest information from Berlin and Washington strongly suggests the possibilities of arbitrating the claims in connection with the Arabic disaster, which the Germans declare was due to the fact that the vessel was armed and prepared for defense which prevented warning passengers and crew.

The British cabinet has decided upon the principle of conscription in its present crisis. The question now to be worked out is how this method of raising additional troops will be carried out. It is asserted that the moral issue is really more important than adding greatly to her military strength. The effect upon her present allies and also upon the Balkan states, which apparently may soon join the Allies, has been an important issue in determining the move.

Michigan was visited by heavy storms during the past week, and considerable damage to property, particularly crops, resulted in many sections. In the vicinity of Muskegon, Grand Rapids and about Detroit the storms were particularly violent.

Prof. M. L. D'Ooge of the Greek Department at the U. of M. from 1867 to 1912, died suddenly at Ann Arbor last Sunday morning.

POTATOES IN UPPER PENINSULA.

Reports from 1,048 growers of potatoes in 14 months in the upper peninsula gives the following:

Number of acres in 1914, 2,117; number of bushels in 1915, 331,852; average yield per acre, 1914, 157 bushels; number of acres planted in 1915, 3,305; increase in acreage, 56.1 per cent.

The Secretary of States gives the acreage of potatoes in the upper peninsula for 1914 as 19,015 acres. If the same increase in acreage prevails through the entire upper peninsula there was planted in 1915, 29,682 acres.

The yield as reported by the field men is 157 bu. per acre from the 1,048 growers. As reported by the Secretary of State, 140.77 bushels per acre.

Damage by wet weather on low and undrained land and by frost fully 50 per cent, giving a probable yield of 2,330,000 bushels.

The frost on the night of August 26 killed the potatoes on all the low lands except near water, and inland from the lakes, except on high, well drained soil. Those who have potatoes of standard varieties, free from disease, will do well to take good care of them for seed.

The Seed Corn

THE subject of seed corn will probably be one of great interest to a large number of Michigan farmers next spring. The corn crop is very immature for the season of the year, and even if weather conditions remain favorable so that it becomes reasonably well matured, freezing weather is likely to follow so closely that there will be little chance for the grain to dry out before it is subjected to low temperatures. Under these conditions the vitality of the seed is quickly destroyed and the unavoidable result is seed corn of very low germinating quality unless special care is taken in selecting and curing same.

Educators in the agricultural field have long preached the advisability of selecting the seed corn from the standing plants; practice bears out the correctness of this theory, although under favorable conditions very good results are secured by old-fashioned methods of seed selection and care. Under such conditions as prevail this year, it will be the part of wisdom for every Michigan farmer to make sure of a sufficient amount of seed corn to plant his next year's crop before there is any possibility of danger of the vitality of the corn being injured by low temperatures.

The best way to accomplish this result is to make an early selection from the fields before the corn is harvested. After the seed is selected, giving attention to the entire plant as well as the ear itself, it should be at once taken to a secure place and the drying process commenced. There are many kinds of seed corn racks and devices for drying corn in use, any one of which will give good results. Probably as good a method as any is to weave the ears of corn into a double strand of binder twine and hang same about the kitchen stove or in the attic above. A furnace room makes a very good place for drying the seed corn. It matters little where this is done so long as it be well done and before the vitality of the corn is injured by low temperatures. A little seasonable attention to this important work will save much worry and the chances of a serious loss in the next year's crop if seed of known quality is not available for next year's planting.

Much might be said with regard to the matter of selection, but the all important idea which should be impressed upon the mind of every Michigan farmer is the necessity of early selection and good care of seed for next season's planting. If two or three times as much seed is selected from the field as may be needed for planting, it can be re-sorted later and the extra seed will undoubtedly be in demand at a good price next spring.

Oakland Co. A. R. FARMER.

LILLIE FARMSTEAD NOTES.

Soy Beans with Sweet Corn.

Only a year or two ago I read an article by one of our leading agricultural scientists advancing the theory that plants of different botanical families could be grown together without crowding, whereas the same number of plants on a given area of the same family would not do as well. In other words, they would be crowded. To illustrate, we can mix clover and timothy and grow more plants on a square rod than we can grow of either clover or timothy separately and have them do well. We can plant corn as thickly as it will do well and then grow soy beans with it and have both plants do well, but if we would plant the corn too thick or the soy beans too thick, neither of them would do so well. I have been watching this since I read this article and I believe there is something in it. It was this theory that induced me to plant soy beans with the sweet corn for silage. If I

get well-eared sweet corn I must not plant as thickly as I otherwise would for silage to get the largest yield. If, however, I can make a success of growing soy beans with the corn then I can get the best crop of ears and the soy beans will help make up the loss of silage and I will have equally as good or even better silage that otherwise because soy beans are richer in protein than corn and will make the silage a more nearly balanced ration. This year I have good vigorous plants of soy beans three feet high, growing among sweet corn that is plenty thick to ear well. In fact, most people would say it was too thick to get the best ear development.

Rape with Peas.

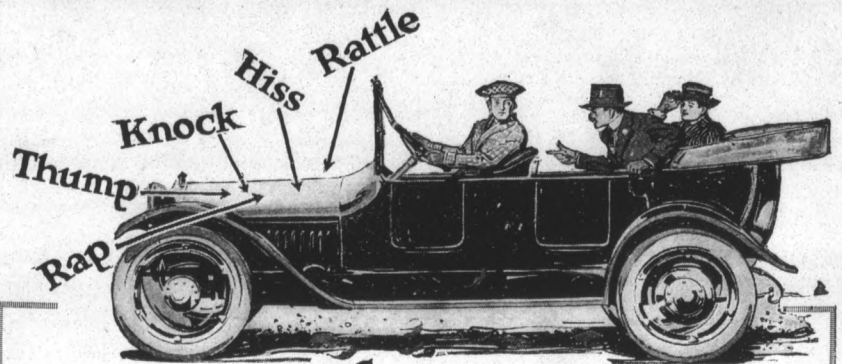
Again, also this year I sowed dwarf Essex rape with market garden peas, sowing the rape seed at the same time I did the peas. The results are splendid. At one time it looked as if the rape would get the start of the peas. You could see scarcely anything from a distance but rape, but later on the peas put their heads above the rape and when in full blossom practically no rape was visible. When we cut the peas about the middle of July we cut a growth of rape fully ten inches high, some of it was more than a foot high. This went into the silo with the pea vines. After the peas were harvested the rape came on again wonderfully and I have today the best rape hog pasture I ever had. Much better, in fact. Heretofore I have sown the rape with oats. The oat plant shades the rape too much early in the season and it must take up more moisture also, for the rape never made the growth in oats that it did this season in peas. The peas were thick enough—fully four bushels of seed per acre and the rape is as thick as it can stand. I think it would be better now if it was not quite so thick. Yet the peas and rape grew together and both made a good crop. I had ten tons of green shelled peas on eight acres.

I am so well satisfied with both of these experiments that I shall try them again next year.

Some Conclusions.

This article that I read advanced another theory which is interesting, to say the least. It is this, where one of the plants grown in the combination is a legume that the plant not a legume will be benefited even by the growing of the legume with it. The idea is that the legume will get some of its nitrogen from the air through the bacteria on its roots and that this nitrogen or the residue of it not used by the legume can and is used by the non-legume. The sweet corn will utilize some of the nitrogen which the beans get from the air. And in the case of the peas and rape the rape will utilize some of the nitrogen which the peas are capable of getting from the air. I wonder if this is one reason I had such a splendid growth of rape this year. I would believe so, only I intended to furnish sufficient nitrogen so neither peas or rape had to go to the air after it. And the same is true of the sweet corn and the soy beans. I am of the opinion that we can not grow big one-season crops like soy beans and peas if we ask them to get the most of their nitrogen out of the air. In the case of clover and alfalfa where the plants feed for a whole year the case is different. Perhaps, however, even with plenty of available nitrogen in the soil quick-growing legumes get some nitrogen from the air. However, I could see no difference this year where I inoculated peas or beans, and I am inclined to think they don't get much nitrogen from the air if there is plenty of it in the soil. At any rate, I doubt if we can afford to have our soils deficient in nitrogen for maximum crops, for these quick-growing legumes.

COLON C. LILLIE.



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A year's supply of the most efficient lubricating oil you can buy will cost you very little more than the cheapest oil on the market—maybe five dollars a year.

As a matter of fact, poor oils "use up" or "wear out" much more

quickly than efficient oils—and so cost more than they appear to. And the very fact that they quickly "wear out" should be a warning signal.

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The same thorough engineering analysis has been put into the study of automobile lubrication.

The condensed lubrication Chart below is more than interested advice. It represents the best engineering practice based upon extended scientific research.

If your car is not listed, a complete Chart will be sent at your request.

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Explanation: In the chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example, "A" means Gargoyle Mobiloil "A". "Arc." means Gargoyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

MODEL OF CARS	1911	1912	1913	1914	1915
Abbott Detroit	A	Arc.	A	Arc.	Arc.
American	A	Arc.	A	Arc.	Arc.
Apperson	A	Arc.	A	Arc.	Arc.
Auburn (4 cyl.)	A	A	A	A	A
" (6 cyl.)	A	A	A	A	A
Avery	A	A	A	A	A
(Model C) 1 Ton	A	A	A	A	A
Buick	A	Arc.	A	Arc.	Arc.
Cadillac	A	Arc.	A	Arc.	Arc.
" (8 cyl.)	A	Arc.	A	Arc.	Arc.
Case	A	A	A	A	A
Chalmers	A	Arc.	A	Arc.	Arc.
Chandler	A	Arc.	A	Arc.	Arc.
Chase (air)	B	B	B	B	B
" (water)	A	A	A	A	A
Chevrolet	A	A	A	A	A
Cole	A	Arc.	A	Arc.	Arc.
Detroit	A	A	A	A	A
" (8 cyl.)	A	A	A	A	A
Dodge	A	Arc.	A	Arc.	Arc.
E. M. F.	A	Arc.	A	Arc.	Arc.
Empire	A	A	A	A	A
Flanders	E	E	E	E	E
" (6 cyl.)	E	E	E	E	E
Ford	E	E	E	E	E
Franklin	A	Arc.	A	Arc.	Arc.
" Com'l.	B	A	A	A	A
Grant	A	Arc.	A	Arc.	Arc.
Haynes	A	Arc.	A	Arc.	Arc.
Hudson	A	Arc.	A	Arc.	Arc.
Hupmobile	A	Arc.	A	Arc.	Arc.
" (Model 20)	Arc.	Arc.	Arc.	Arc.	Arc.
I. H. C. (air)	A	A	A	A	A
" (water)	A	A	A	A	A
International	A	Arc.	A	Arc.	Arc.
Interstate	A	Arc.	A	Arc.	Arc.
Jackson	A	Arc.	A	Arc.	Arc.
Jeffery	A	A	A	A	A
" Com'l.	A	Arc.	A	Arc.	Arc.
" (8 cyl.)	A	E	A	E	A
Kissel	A	Arc.	A	Arc.	Arc.
" (Model 48)	Arc.	Arc.	Arc.	Arc.	Arc.
" (Model 48)	A	A	A	A	A
Krit	A	A	A	A	A
Lozier	Arc.	Arc.	Arc.	Arc.	Arc.
Marion	A	E	A	E	A
Marmon	A	Arc.	A	Arc.	Arc.
Maxwell	Arc.	Arc.	Arc.	Arc.	Arc.
Metz	B	Arc.	A	Arc.	Arc.
Mitchell	A	Arc.	A	Arc.	Arc.

MODEL OF CARS	1911	1912	1913	1914	1915
Moline	A	Arc.	A	Arc.	Arc.
" Knight	A	A	A	A	A
Moon (4 cyl.)	Arc.	Arc.	Arc.	Arc.	Arc.
" (6 cyl.)	A	A	A	A	A
National	A	A	A	A	A
Oakland	A	Arc.	A	Arc.	Arc.
Oldsmobile	A	Arc.	A	Arc.	Arc.
Overland	Arc.	Arc.	Arc.	Arc.	Arc.
Packard	Arc.	Arc.	Arc.	Arc.	Arc.
Paige	A	E	A	E	A
" (6 cyl.)	A	A	A	A	A
Pathfinder	A	Arc.	Arc.	Arc.	Arc.
Premier	A	Arc.	A	Arc.	Arc.
Rambler	A	Arc.	A	Arc.	Arc.
Regal	A	Arc.	A	Arc.	Arc.
Reo	A	Arc.	A	Arc.	Arc.
Saxon	A	Arc.	A	Arc.	Arc.
Studebaker	A	Arc.	A	Arc.	Arc.
Stutz	A	Arc.	A	Arc.	Arc.
Vette (4 cyl.)	A	Arc.	A	Arc.	Arc.
" (6 cyl.)	A	Arc.	A	Arc.	Arc.
White	Arc.	Arc.	Arc.	Arc.	Arc.
Winton	Arc.	Arc.	Arc.	Arc.	Arc.

TRACTORS

Model of Tractor	Summer	Winter	Model of Tractor	Summer	Winter
Aultman-Taylor (4 cyl. horizontal)	A	Arc.	Hart Parr	B	A
Avery	B	A	Heer	A	A
Best	B	A	I. H. C.	A	Arc.
Big Four (20)	A	A	Imperial (40)	B	A
Bulley (Model A1)	A	A	Lambert (Model X)	A	Arc.
Holt Caterpillar	A	A	Leader (Heavy Duty)	A	Arc.
C. O. D.	A	A	Lion	A	A
(2 cyl. horizontal)	A	Arc.	M. & M.	A	A
(Models B & C)	A	Arc.	Nichols & Shepard	A	Arc.
Eagle	A	A	Ohio (2 cyl. horizontal)	A	Arc.
E. B. Farm	A	Arc.	Reeves (40)	A	A
Emerson Brantingham (Model 1-Big 4-20)	A	Arc.	Rumely	A	Arc.
Fairbanks Morse	A	Arc.	Russell	A	Arc.
Flour City	A	Arc.	Simplex	A	Arc.
Universal	A	A	(4 cyl. horizontal)	A	Arc.
Gray	A	A	Stearns	A	A
Hackney Auto Plow	A	A	Twin City	A	A
			Walsh (Type D)	A	Arc.

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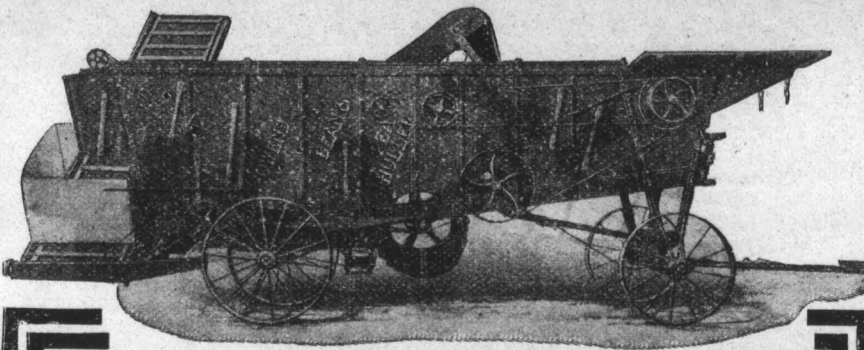
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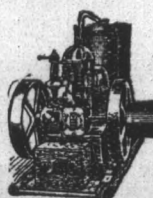
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Farm Notes

When to Plow Under Green Manure Crops.

What is the best stage for buckwheat to be in to be of the most value when turned under for soil improvement? Also, any other green stuff?

Cheboygan Co.

T. O. P.

The proper time to plow down a green manure crop will depend upon other conditions besides that of the stage of maturity of the crop itself, such as the condition of the soil, the season of the year, and general climatic conditions. Green manure crops should, however, preferably be plowed in when they are still green and full of moisture. Decomposition will take place more rapidly if they are plowed under before they have reached the stage of maturity in which they contain large amounts of woody fiber. Also they should be plowed down when the soil contains sufficient moisture to insure prompt decomposition of the vegetable matter. If such a crop is plowed too late in the fall, slow decomposition and the production of an acid condition may result. Where fall sown crops are to follow the green manure crop, it is best to plow several weeks before seeding time if practical, in order that the soil may be well compacted and capillarity well established so as to make a good seed bed.

The varying conditions as related to all of these mentioned factors make the problem an individual one in every case. As a general proposition, however, it will be safe to plow a green manure crop under at any time when conditions are reasonably favorable. Trouble is more often experienced when a green manure crop such as rye is permitted to reach too advanced a stage of growth when plowed down in the spring, particularly if the season of plowing is followed by unusually dry weather.

When to Cut Cowpeas for Hay.

As this is my first year's experience raising cowpeas I would like your advice in regard to cutting them for hay. What stage of growth of the pea to cut, then about what time of the year to cut, how much to cure for best results and any other information you may give me.

Allegan Co.

G. N. B.

The best time to cut cowpeas for hay is when the pods are developed but before the seed has formed to any extent. At this time the plants contain a maximum of nutrients and can be cured for hay more easily than if cut at an earlier stage of growth. If left until still more mature the stalks will contain more fibre and the hay will be less palatable and digestible. Cowpeas are quite difficult to cure in to the best of hay owing to the size of the stalks. The best way is to rake them after nicely wilted, bunch them up into good sized cocks, and let them cure out before hauling. This is an easy matter in good weather, but somewhat difficult during wet weather such as has prevailed during the haying and harvesting season. Under unfavorable conditions they could be more quickly cured in small windrows, but the damage would be greater from rain should it occur during the curing process.

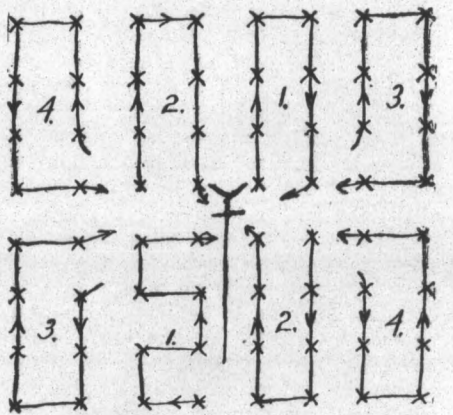
SAVING LABOR IN FARM WORK.

A great deal has been written about scientific management and personal efficiency, especially in connection with manufacturing and the trades, and as a result of scientific motion study the workman's daily output has sometimes been doubled without any greater expenditure of energy on his part. The efficiency experts have not, as yet, given much attention to agricultural operations although in some ways the conditions on the farm are almost ideal for putting into practice the principles of scientific management. On a majority of the farms the farmer is both manager and labor-

er, and on most of the larger farms the entire working force is not larger than the crew under a single foreman in a factory; there are no labor unions to contend with and the farmer is free to carry out his own plans.

Strength and ability to do manual labor is an important part of the farmer's resources and it should be a part of his business to conserve those resources. Some farmers seem to think that any attempt to do a thing easily is evidence of laziness and do not seem to realize that it is results that count rather than the amount of effort put forth. They would be shocked at the idea of paying higher wages than necessary, or more than the market price for an article, but fail to realize that their strength and time have a money value and that when they use more of either than necessary to do a piece of work they are paying more than the job is worth. I have seen ranchers in the west riding horseback behind the harrow. Most eastern farmers would consider this the height of laziness but as a matter of fact saddle horses are cheaper than men. Wherever horses or machinery can be used as economically as hand labor it is only a matter of common sense and good business to use them.

In cutting corn by hand it is possible to save considerable time by following a definite method of operation. The accompanying figure illustrates this for the case where two men are cutting and setting up around a horse. One man binds the shocks while the other moves the horse.



Something can be saved by a little thought in even such a simple operation as unharnessing a horse. We have often seen a teamster go to the horse's shoulders, unbuckle the harness, work back to the crouper and then go back into the stall to lift the harness. By beginning at the crouper and working towards the head the harness can at once be lifted as soon as the hames are unloosed, thus saving the time required to walk the length of the stall. When a series of operations are gone through with every day, as in the doing of regular chores, a little careful planning will result in the saving of many unnecessary steps.

A little thought along these lines will suggest to any farmer many ways by which time and effort can be saved in both the larger and smaller operations of farm work.

Allegan Co.

O. F. EVANS.

A HANDY CORN RACK.

I see in our paper you ask for farmers' ideas. Here is one good way to cure seed corn. Take a board a foot wide and four feet long, round the top, and bore a hole to hang it up by, drive nails in the board two and one-half inches apart, slanting them up a little. Stick the ears on the nails and hang up to dry. If you hang them on rafters or joists you can put nails through both ways, but if you want to hang them on the wall you can only use one side of the board. This gives the corn a chance to dry, and the ears will not touch each other and can be handled easily if you want to move the corn.

Clinton Co.

J. H.

Sewage Disposal on the Farm

By FLOYD W. ROBISON

One of the conditions most unsatisfactory upon the modern farm is the almost entire lack of any adequate sewage disposal. This condition is becoming more and more noticeable with the greater familiarity which country people have of the ways and privileges existing in cities. In fact, the conveniences of an adequate water supply and an effective sewage disposal plant are two of the main items which make city life so convenient and agreeable. These conveniences have not been installed largely upon the farms because of the supposed financial burden involved in their installation. Inquiry, however, is being directed quite generally toward the possibility of installing all of these conveniences on the farm. The water system, the sewage disposal system and the installation of an electric light system on the farm all are within the range of possibility and need not entail an enormous expenditure of money.

Sewage Disposal Most Important.

Taking precedence, however, over all the others, in our judgment, is the problem of the adequate disposition of sewage from the farm home. The time is not far distant, in our judgment, when many of the prevailing methods of sewage disposal in the cities will be changed and municipalities are beginning now to study the possibilities of other types of sewage disposal than the one now most generally adopted. Most cities dispose of the sewage in the same way that the city of Detroit disposes of its sewage, that is, by the throwing of it into the general sewage system which empties directly into the Detroit river. Other cities, like Lansing and Grand Rapids, dispose of their sewage in a similar way, by emptying it into the river which traverses that section. An injunction suit brought by the officials of a township through which the Grand river passes after leaving the city of Grand Rapids, which injunction was brought to restrain the city of Grand Rapids from dumping its sewage into the Grand river, indicates in a measure what is in the public mind regarding this system.

People Are Asking Questions.

There has been a joint international Waterways Commission appointed by the governments of the United States and the Dominion of Canada to inquire into the question of the pollution of the lakes and rivers which form the boundary line between these two countries. This is another instance showing the gradual trend of public scientific opinion and if one may judge at all from these things he will realize that a different method of sewage disposal must be worked out in the future. It is absurd to think of the conditions prevailing along the American boundary, from Detroit to Lake Erie. To think that any individual, much less a corporation as large as any of the villages which lie along the Detroit river would think of using as a source of its water supply the Detroit river into which this city of 600,000 or 700,000 population is emptying its sewage is to assume an entire lack of appreciation of the terrible condition in which that water must be.

Few Farms Have Sewage Facilities.

On the farm, however, no attempt has been made except on farms which are contiguous to cities, to make any convenient disposal of the sewage whatsoever, and as unquestionably the next few years will see a marked advance in the conveniences found about the farm home, one may well understand that an effective sewage disposal plan must be worked out for the ordinary farm.

Of course, the ideal plan of sewage disposal is that plan which facilitates the efforts of nature to return the sewage itself to a station of complete

rest. That is, to the station of complete mineralization and oxidation, which station means that the water equilibrium and carbonic acid equilibrium and the nitrates equilibrium have become established. In this condition into which the matter has become resolved the materials are entirely destitute of any available potential energy. In other words, nitrogen in the form of nitrates is at complete rest; hydrogen and oxygen in the form of water are at complete rest; carbon and oxygen in the form of carbon dioxide are at complete rest. They are the final changes into which nature resolves its elements when this final equilibrium is established. The end in point of all animal or vegetable life therefore is one of a complete balance for the oxidized and mineralized elements. They are the goal points of vegetable and mineral life, so when once the cycle of growth has disturbed the equilibrium of those substances there is a continual effort on the part of nature to resolve them finally back as the ultimate end of one of her processes to these simple balanced substances again.

A Study of the Behavior of Nitrogen Illustrates the Natural Process.

Assuming, then, that we may take as our example the behavior of the nitrogen compounds in their station of final equilibrium in the soil, that is, in the form of nitrates; through the medium of plant life the nitrates become converted into protein or vegetable albumin. Now through the medium of animal life this vegetable protein becomes converted into animal protein. From this point the nitrogen compounds take one or the other of two courses. The first change is into the simpler nitrogen compounds through the medium of digestion. The other change is through animal death into dead organisms or inert lifeless protein. The protein which becomes changed through the medium of digestion is converted by the process of oxidation, that is in the presence of oxygen, first to urea and finally through a process of final oxidation to ammonia. If this process is perfectly normal and unimpaired the step from urea to ammonia is quite rapid. If, however, through the use of certain disinfectants, so-called preserving agents, the bacterial life is destroyed, then the resolving of the urea to ammonia does not take place. From ammonia the next step in the process of nitrification is the formation of nitrites, a step further in the oxidation than is ammonia. From nitrites the nitrogen becomes converted into nitrates again which is the final step, the resting point which we described above.

Water is the Great Medium for the Purification of Sewage.

In the case of the death of the animal body the animal protein becomes converted into ammonia through the process of putrefaction and from this point on the step is exactly the same as in the resolving of the ammonia into nitrates through the process of digestion. As in many other changes in nature this process is most speedily accomplished through the medium of water, consequently we find that a treatment of sewage with this ultimate purpose of bringing the nitrogenous matter there present back into the form of nitrates where they are entirely inactive, entirely innocuous, stable and in a position suitable for the real nourishing of plants is most conveniently and rapidly accomplished in a septic tank. This subject we have described before in a very informal way. It will be the subject of our next paper and there we will describe the conditions which make for efficient and safe sewage disposal through the medium of the septic tank.

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A farm mother deserves and ought to have all the comforts and conveniences that the city mother enjoys. First of all she needs a warm, evenly-heated house free from drafts, chill and dampness. She must also be freed from the back-breaking drudgery of "tending stoves." Old fashioned heating methods wear women out, and even then only heat the house in "spots," spout

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A No. 1021 IDEAL Boiler and 262 sq. ft. of 38 in. AMERICAN Radiators, costing the owner \$185, were used to heat this cottage, at which price the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which vary according to climatic and other conditions.

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Developing Young Meat Animals

THE statement is often made that "a man who makes two blades of grass to grow where only one grew before is a public benefactor." It might be properly said that the man who makes two pounds of meat to grow where only one grew before, without additional cost to the producer, is a benefactor. And I will also add that he who teaches a plan by which a given amount of meat can be grown in one-half the time which it has formerly required to produce the same is a benefactor.

Old-time Methods.

It is a well known fact that meat producers of all classes up to about forty years ago, followed a plan of growing their animals along slowly to what they called "mature years," and then would load them with fat and call them ready for market. Many of the older men of Michigan will remember the great display of beef cattle William Smith, of Detroit, used to make at the Michigan State Fair. There were animals that actually weighed over 3,000 pounds each. They were great in size and were such as would astonish the onlookers at the shows. During the cavalcade they were led around the track, bedecked with ribbons and rosettes. Those animals were not fed in a manner to develop them while young. They had heavy bones, but were not heavily muscled. On the surface at some points, notably beside the tail and on the ribs, there were great bunches of fat. The lean meat had been grown along slowly and the fat put on later.

It was my privilege at several Christmas shows, made by Mr. Smith, to see some of the carcasses of those animals hanging in the shop. There was a good deal of waste of weight in throwing aside the bunches of fat. People at that time were not as particular about the quality of the meat purchased as they are now. The meat sold for good prices, but I have my doubts about the selling price equaling the cost of production. The show meat was worked off with some that was not considered as good to make it all pay out, and yet the seller did not seem to get rich at that business.

The Economic Point.

The point I wish to make is, that those heavy animals were produced at a loss. There was feed wasted all along from the time the animals were calves, to the time they were slaughtered for beef. They were not given such food as would develop the growing animal harmoniously. Some of the feed was rich in carbohydrates, such as keep up the heat and energy, but did not produce muscles, and as they fed the animals along slowly in order to let the bones grow, consequently there was much of the feed wasted. During the long periods of feeding much feed is required to sustain life, and keep the machinery of the body running, but small returns are made in growth and the accumulation of fat. It can be seen that it is an expensive way to produce meat.

Another fact should be kept in mind. The muscles which are the lean meat that are grown along slowly are not intermingled with fat and the meat is therefore dry, leathery and of a poor quality. Such meat lacks juiciness and good flavor. It suits the restaurant men, the boarding house keepers and hotel men, for it "spends well," as they express it, but does not meet the approval of the consumers because it lacks palatability, is not easily masticated, nor does it give up a large amount of nutrients while it is being digested.

The Dawn of a New Era.

If we were to search the records of the doings of mankind in the production of meats, from the dawn of the civilized ages to 200 years ago, we would fail to find that the art of producing palatable, cheap and nutritious

meats had been discovered. Occasionally the kid, the young deer and the "fatted calf" is mentioned as among some of the meats that were indulged in on special occasions, but the reason why the meat was sweet, juicy and palatable, was not discovered.

When, in the eighteenth century the improved breeds of cattle and other stock were formed from the stock of a great variety of make up, by judicious selection and better care the reason for better quality of meat was not yet discovered. The improvement in the quality of the meat was ascribed to the breed and selection of animals that had the inherent capability of making good meat, was given the credit. Not even in the yellow red bull calf, Tubback, which did so much to fix in the Shorthorn breed the characteristic of early growth and development, did they see wherein his superiority was to be found. As soon as the famous early Shorthorn breeder, Charles Colling, had bought the calf he sent for his wife to come and see "the handsomest calf she ever saw in her life." The secret was the calf had been developed young, and his harmonious proportions made him an ideal in beauty. Neither did those old worthies who formed the Hereford breed realize wherein was the superiority of the mottled-faced calf which was the foundation and the beginning of that excellent beef breed.

After the war of the rebellion, when the great movement was made to utilize the grasses on the plains of the great west, the battle of the breeds began. The Texas ranger was too slow to come to maturity and get into market condition and as fast as possible he was discarded, and something that would make growth and get ready for market sooner, was sought after. About all the breeds and their grades were tried and there was a battle for the survival of the fittest. Hardiness and early maturity was the characteristics that won. The large, bony Shorthorn gave way for the compact Scotch bred animals of the same breed. Subsisting on the rugged hills of Scotland where feed was not of the best quality made them hardy and strengthened their vital organs. With these qualifications the small, compact Shorthorn could rustle beside the modern Hereford which had taken the place of the large, coarse animals of the breed. These breeds in competition with the Galloway and Polled Angus constitute the winning classes that won popular favor in the hands of the ranchmen and breeders as profitable producers, and met the approval of the exacting consumers. The best specimens of any of these breeds had, in a quarter of a century, been so modified that they appeared like a much smaller and improved model of the old breeds.

What Has Been Accomplished.

In developing the animals which have made up the different improved breeds, great improvements in the animals have been made. The animals have been transformed from the pinch backed, pot bellied, cat hammed, ewe necked slow growers that could utilize about all of the nutrients in the feed they consume, make a constant and rapid growth from very early in life and make rich returns for the feed they have utilized on which to grow. It is the period of growth I wish to emphasize at this time.

By crowding the young animals along while the breeds were being formed, great good was accomplished in several ways. By growing rapidly the quality of the meat was improved. Less time is required to reach a given weight which enables the producers to secure quick returns for the feed and care bestowed on their animals. During the short periods of growth less feed is required to sustain life

which makes a saving in that direction. The thrifty habit is formed which enables the young animal to make larger returns for the feed consumed, than is possible if the slow growing native and indifferently bred stock is used.

From what has been stated it is reasonable to conclude that in order to secure the best results and make the largest profits in raising and marketing meat animals on the farm, good specimens of the improved breeds must be used. While it is not possible for all to have pure-bred stock, it is possible and profitable for all to secure the services of a pure-bred sire. A single visit to our stock yards will convince an ordinary observer that a good deal of feed is being wasted on inferior, slow growing, meat making animals.

When we consider the high prices for good meat animals which prevail at the present time, one feels constrained to urge a revival of interest along the lines of breeding, feeding and marketing better stock which will give quicker and larger returns for the feed consumed. Whether one is making a specialty of breeding, feeding and selling cattle, sheep or hogs, the same principles hold good and the same benefits can be derived from following the same plans. It is the quick growing bullock, lamb or pig that brings the generous returns and gives the greatest satisfaction to both producer and consumer. I am ready to say that the man who can stimulate and secure greater efforts along these lines, is a public benefactor.

Wayne Co.

N. A. CLAPP.

THE LIVE STOCK SHOWS AT SAN FRANCISCO.

From September 30 to December 3, the Panama-Pacific International Exposition at San Francisco will be the scene of a succession of live stock shows, which, it is believed, will surpass any ever held in the United States, or even in the world. From the list of those who have already signified their intention to participate, it is assumed that in all the shows animals and poultry of the finest quality, and in large quantity, will be represented. Almost half a million dollars have been appropriated for the live stock features of the exposition. The exposition itself has apportioned \$190,000 for cash prizes for live stock and horse show, 45 breed record associations have set aside \$100,237 for special premiums, and the commissions of various states have appropriated a total of \$150,230 for participation of live stock from their respective regions. The quarantine has been raised in practically all the states and stock shipments can now be made without restriction. The dates for the various shows are as follows:

Horses, mules and asses, Sept. 30-Oct. 13.
Cattle, beef and dairy, Oct. 18-Nov. 1.
Sheep, goats and swine, Nov. 3-Nov. 15.
Carlots of live stock, Nov. 11-Nov. 14.
Poultry and pigeons, Nov. 18-Nov. 28.
Dogs, cats and pet stock, Nov. 29-Dec. 1.
Children's pets, Dec. 1-3.

LIVE STOCK EXPERIMENTS.

In an experiment conducted by the Oregon Experiment Station, comparing skim-milk and tankage as supplemental feeds for swine, equal nutrients being fed, lot one made a total of 669 lbs. of gain, consuming 2.72 lbs. of barley and 6.31 lbs. of skim-milk per pound of gain; and lot two, 608 lbs. gain, consuming 3.331 lbs. of barley and 0.35 lbs. of tankage per pound of gain. The cost per pound of gain in lot two was 5.84 cents. The value of skim-milk for each pound of gain in lot one as compared with lot two was 28.29 cents.



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Will positively produce more milk than any other ration either home mixed or purchased and do it without giving your cows constipation or udder trouble. Ready to use right out of the sack without any mixing or bother.

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Absolutely free from adulterants and fillers, just like the feed you would mix for yourself, is a special combination of choice cottonseed meal, dried beet pulp, gluten feed, corn distillers' grains, wheat bran, wheat middlings and a little salt, that's all; each ingredient weighed by automatic scales and all thoroughly mixed in huge power driven mixers, so that it is always absolutely uniform, and always good. An extra quart or two of milk daily from each cow may turn a loss into a profit. Try LARROE-FEED for more profits. Sold on "money back if not satisfied" plan. LARROE dealers almost everywhere; write us if none near you.

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SUITS \$3.75. PANTS \$1.00, made to measure. For even a better offer than this write and ask for free samples and styles. KNICKERBOCKER TAILORING CO., Dept. 301, Chicago, Illinois.

Haphazard Breeding of Dairy Cows

NOTWITHSTANDING the fact, yet it is quite as likely that other things may result. That with the Jersey-Holstein cross the outcome may be a cow with the Jersey quantity and the Holstein quality of milk. Or the Jersey-Durham cow may as likely turn out to be a beef animal and very ordinary or unprofitable in the dairy. In fact, if the theory is true that the tendency in breeding is to revert to the original type, there is a stronger probability of getting a combination of the poorer qualities than of the more desirable ones. That no improvement is made by this system of breeding is abundantly shown by the class of cattle everywhere resulting from a long line of indiscriminate crossing. A comparison of these cattle with the scrubs started with as foundation stock several generations back will show no advance in any desirable quality.

The man who starts out and breeds to a Holstein to secure quantity in milk production, and then breeds to a Jersey or Guernsey to gain quality and then to a Durham to gain size, and meantime perhaps to a bull of some other breed because he is handier or more accessible, will surely find that his stock is acquiring quite as many of the undesirable qualities as it is of those which he wishes to obtain, and in the end he has bred out scrubs. One of the decided advantages of community breeding, or of an entire community adhering to a single breed, is the avoiding of this class of scrub stock. Wherever several breeds are kept in a community there will be found as many scrub animals as there will be of those showing any particular breeding. To the advice to breed only to full-blooded males should be added to breed only to those of a single breed. Only in this way can the desirable characteristics of any breed be maintained.

EDW. HUTCHINS.

LILLIE FARMSTEAD DAIRY NOTES.

Although the pastures are unusually fresh and succulent for this time of year our cows seem to relish two feeds of pea vine silage daily and they also eat a small feed of alfalfa hay, even though this hay was out in the rain, practically cured in the rain, and is somewhat injured thereby. I am constrained to believe that clover or alfalfa cut at the proper time and somewhat damaged by rain is better hay, that is, more appetizing than hay that has gotten too ripe before cutting. At least our stock eat it better and that is the only gauge I have to go by. Clover or alfalfa becomes woody and tasteless quickly if allowed to stand for a few days after it ought to be cut, and in the case of alfalfa in particular I would prefer to cut it at the proper time, rain or no rain, than to let it stand and unduly mature. The hay is not only more palatable but if allowed to stand one loses the chances for the development of the next crop. Cut it and cock it up before it gets too dry and it will make good hay, even if it is somewhat discolored.

It should be the settled practice of all dairymen to have their herds tested for tuberculosis annually, and eventually this will become a fixed practice. When it is fully realized that this dread disease is sapping the efficiency of the herd and will eventually destroy it, and when it is fully realized that this disease can be eradicated and the herd kept free from it, then will this testing become general.

The first test may or not may not reveal the disease. If it does not, well and good. But that is no guarantee that in one year from that time some

animal may not have contracted it. The way to keep the herd clear from it is to test often enough so the disease will not get a strong foothold. An annual test will prevent this. It is altogether likely that if the herd is free from the disease today and one is careful about purchasing new animals, it will still be free a year hence. But nothing but the test will show this.

Suppose the first test reveals a certain number of reactors. The only thing to do is to dispose of them as soon as possible, and then keep the herd clean after that by annual testing. There may be a few every year for a while until the disease is all cleaned up, but it can eventually be eradicated from the herd and thereafter the herd kept free from it by testing annually.

The state assists the farmer in this and helps make his loss as light as possible. For all animals that react the state allows the owner \$50. It is warranted in doing this on the basis of the good of public health. Besides this if the carcass is adjudged fit for food and most of them are, the owner gets the food value and the value of the hide besides. An ordinary cow in this way will bring the farmer somewhere near \$100. He ought to be willing to stand all loss over and above this for the good of the public health, even though his animals are valuable registered animals.

Any local graduate veterinarian is qualified to do this testing and the State Live Stock Sanitary Commission can authorize him to do it. The testing is not expensive and it is a source of great satisfaction to know that your herd is free from this terrible disease. Besides the cows will be more profitable to you if their energy is not being sapped by it.

COLON C. LILLIE.

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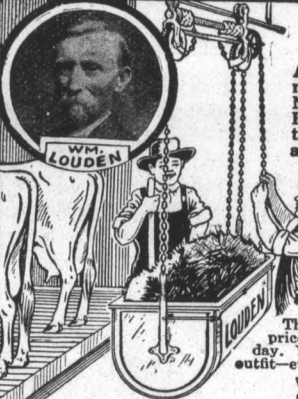
Will get them out in cold and wet weather, when you have plenty of time. Clear land now, and crop it next spring. This explosive is low freezing, hence works well up to winter weather. It takes less Stumping Powder in wet weather than in dry. Turn the wet days of Fall into cash.

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1915

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Pays for Itself in a short time from the profits. Solid steel construction—certain sure operation. Makes its own power from simple, sturdy Sandwich engine (4, 6 or 8 H. P.) on same truck.

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Great for Windrow Baling. 2 1-2 to 3 1-2 Tons Per Hour.

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Getting a Profit from the Cull Pile

HOW often in past years have we had the stems pulled out; fruit that seen the entire apple crop of has been injured by insects, as wormy some men placed on the market fruit, and fruit disfigured by the curculio; and last, but not least, fruit without the culling out of a single fruit. All the attempt at grading that that has already been attacked by was made perhaps was to place the least desirable fruits in the middle and bottom of the barrel while the container was faced out with choice fruit.

All this is gradually changing until now there is less and less of this "orchard run" fruit to be found on the market. There is no excuse for such marketing except convenience or the laziness of the grower. The prices paid for such fruit is far lower most times than the fruit is actually worth if the good fruit were taken out and the culls left at home and used as a source of profit in the manufacture of a valuable by-product.

Canadians Benefit from Law.

Then there are a few men that think that a few cull apples in an otherwise well graded box or barrel will not make very much difference. This thing might happen once or twice in a season without causing any great depreciation in the price received for this fruit but if it happens in all the boxes of one orchard, wholesalers and fruit men generally soon become accustomed to lower the grade of that fruit as soon as it comes on the market.

The Canadians realize this fact and did a thing that this country failed to do in the making of its apple package law, and that is: Every package of Canadian fruit offered for sale or export must be 100 per cent pure as to variety, size, grade and soundness. This law has caused a growing respect to be paid to the Canadian fruit since the law has been in operation.

Our Law Not as Effective.

The one thing that is lacking in the United States law in this regard is the fact that the packer has any leeway at all in the matter. The law requires that the fruit on the package must be 90 per cent pure but it says nothing as to what the other 10 per cent must be and consequently it may be almost anything that looks like an apple. This law therefore has not had the effect that the Canadian law restricting the same thing has had.

But if it is so necessary to remove the culls from the crop what is to be done with this cull fruit? Almost any big operator in any other industry can tell you that it is in the little things that the greatest profits are made and the one that makes the most profit is the waste products of the industry.

Profit in By-products.

Anyone who travels extensively through this country at apple harvest time can testify to the fact that the waste going on in the orchards is appalling when one thinks of the bushels and bushels of apples that are left on the ground to rot. There are thousands in the cities, and even in the nearby towns that will be willing to pay high prices for this fruit if it were put up in the form of apple cider, apple butter, jelly or vinegar.

Besides the apples that are allowed to go to waste in the orchard are those that are necessarily rejected in the packing of the fruit for market. This fruit is just as good a food as the fruit that is packed, but the condition of the fruit will make it of less value because it deteriorates quicker and probably would not reach the consumer in a shape fit for food. It is from this fruit, however, that the orchardist of the future will have to look for his profit just as the captains of industry look to their scrap heap today.

There is a great variety of culls among which come those that are mechanically injured, as fruit that has been bruised in picking, or that has "hard."

Cider that is intended for the manufacture of vinegar should be made in the same way as cider that is to be sold sweet. If anything different is done in the handling of this cider it should be to see that the cider is kept cleaner and more wholesome.

Vinegar Fermentation.

There are two distinct fermentations that take place in the vinegar barrel. The first of those is the changing of the sugar of the cider to alcohol, forming "hard cider." This fermentation is caused by the common yeast that is used in making bread. This yeast enters the cider from the air in the common method of making vinegar and the signs of its presence is the familiar foaming of the cider or the cider has commenced "to work." To make the best quality of vinegar this action should go on until all of the sugar in the vinegar is changed to alcohol. When this has taken place the second fermentation takes place. In this one the alcohol formed by the former action of the yeast is changed to vinegar acid or acetic acid. This action can only take place in the presence of air for it is the oxygen of the air that is united with the alcohol to form the acid.

Cider Making Easy.

In the making of cider there is the advantage that the labor involved is small, the actual experience necessary is small and the operations can be mostly carried on in spare moments with the aid of the members of the family who are always anxious to take part in the cider making.

Cider is the juice of the apple pressed from the ripe fruit; it is not the water pressed from the watered first pressings. The fruit that is used for the manufacture of cider must be free from rot, worms and disease of any sort. This does not mean that apples of this description cannot be used for cider but it does mean that if such apples are used the diseased parts must be cut away before the apples are placed in the grinder.

Best Care Must be Used.

There are at present a number of firms that make it their especial effort to manufacture cider presses that will suit the needs of the farmer in this respect. These mills can be had from the smallest size that handles about a peck of apples at a grinding, to small power presses for the large orchard that accommodate a barrel at a time. Then above these sizes are the hydraulic presses that are suited to the needs of an entire community. In selecting a press one should be secured that will adequately handle the crop of the orchard. The smallest size is only suited to the needs of a family that has only the culls from one or two trees to handle. For the average user the presses that accommodate from one to two bushels of apples at a time are the best.

After the diseased parts have been cut from the apples these should be washed to remove the large quantities of dirt that is always adhering to the apples, especially where the orchard is located along the country road or is cultivated. It is necessary to remove this dirt for it is liable to give the finished product a bad flavor. This is very important where the cider is to be used in the manufacture of cider vinegar.

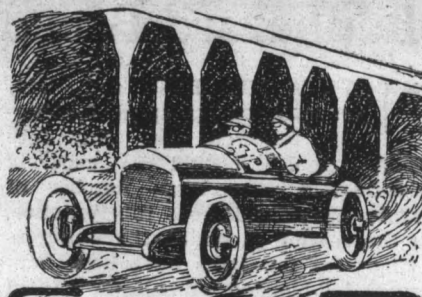
Preserving.

After the cider is pressed from the apples it must be stored somewhere so that it is not attacked by molds or bacteria. The best way to store cider that is to be kept and sold sweet is to use new barrels that have been scalded with water and then allowed to cool. This scalding destroys all molds or bacteria that adhere to the barrel and prevent their action for a longer time than if they were allowed to remain in the barrel.

If the cider is to be sold sweet it should be placed on the market as soon as possible after it is made, for it is a very perishable article and soon starts to ferment and become

Indiana.

W. E. WIECKING.



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Complete satisfaction to the user—free repair replacement or money back.

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ROSEN RYE. Best yielding rye ever discovered. Will yield from 25 to 50 per cent more than common rye. \$1.50 per bu. A. D. GREGORY, R. No. 3, Ionia, Mich.

RED WAVE SEED WHEAT. The best wheat in Michigan. Write for prices and description. W. C. TAYLOR, Milan, Mich.

Ginseng Plants For Sale—One year old, \$6 per 1000, two year old, \$8 per 1000. Stratified seed, \$4 per lb. A. K. CARPENTER, Northville, Mich.

SEED WHEAT The No. 1 Red Champion and Improved Kharkov from Russia. Two greatest varieties known for yield. Hardest and best milling qualities. Write for sample and prices. W. J. MERRIAM, Almont, Michigan

LILLIE'S IMPROVED GROENE WHEAT A vigorous, red, bearded wheat. very stiff straw, and of good milling qualities, a good yielder, write for sample and prices. COLON C. LILLIE, Coopersville, Michigan.

FANCY GRADED WINTER VETCH SEED

\$8.00 per bushel. Grimm Alfalfa \$18 per bushel. Write today for price list 24. Seed Wheats and other QUALITY seasonal Farm Seeds. A. H. FOSTER, Allegan, Mich.

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WANTED—RYE and VETCH MIXTURE SEND SAMPLES FOR FID TO YOUNG-RANDOLPH SEED CO., Owosso, Mich.

GOLD COIN & KHARKOV WHEAT. Heavy yielders. Write for descriptions, samples and prices. Munoytown Stock Farm, Flat Rock, Mich.

RED Wave and Gold Coin Wheat cleaned for seed R. \$1.35 per bushel, for 5 bushels or more sacks free. F. C. McEuen, Mason, Michigan.

100 CHOICE DAHLIA CLUMPS FOR \$2.00.
A. A. FRIES, Mendon, Mich.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND **LIVE STOCK**
PUBLISHED WEEKLY.
JOURNAL.
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

JONAS HENNEWAY, of London, was the first person to carry an umbrella as a protection against rain. A century, and one-half of another, is the span of time that separates us from then and now; but Jonas was laughed at and the finger of scorn was pointed toward him as he raised the umbrella above his shoulders on that rainy but eventful morning.

"I wish you would not be so silly," was the objection of his sister, who acted as his housekeeper. "Uncle,"

Starting a New Fashion

By CAROL C. CRAIN.

said his small niece, "they will make fun of you if you do it." His sister looked out of the window at the rain drops as they fell and, thinking of her odd brother, exclaimed, "poor thing!" A friend tried to dissuade Jonas, saying, "you will look so foolish."

But the man with the idea persisted. He asserted that the umbrella was a practical article. On that rainy

morning Jonas and his friend walked up a street and Jonas carried the new device and felt the stares of curious people. When he raised the umbrella, the friend departed with the declaration that it was a "silly business."

The idea spread. The residents of Cheapside ceased to laugh at the man beneath the sheltering umbrella. Before a great while, the entire city of

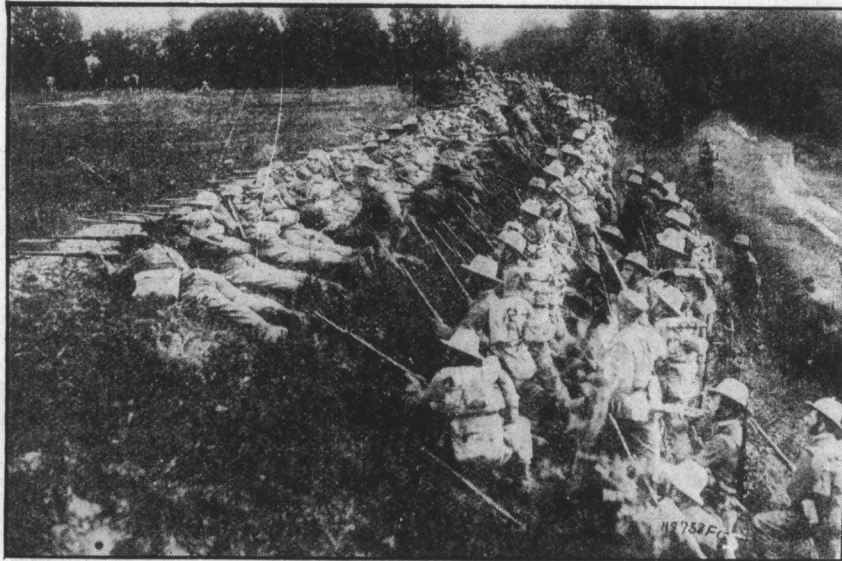
London had accepted the new mechanism and the new fashion it introduced. Today we think no less of the man who carries an umbrella than of the man who wears a hat.

Starting the new fashion required real courage. No man can do something new without receiving ridicule and rude smiles from the populace. Jonas Henneway, the Londoner, made the sacrifice that brought temporary disfavor; but he benefitted humanity by inducing the public to use the umbrella on rainy days.

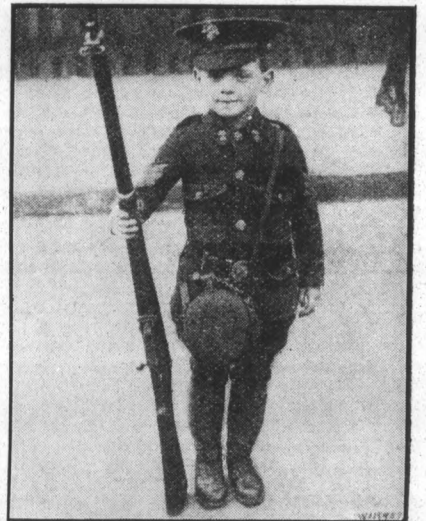
WORLD EVENTS IN PICTURES



Miss Wood, Talented Actress, Prefers Talking for Suffrage.



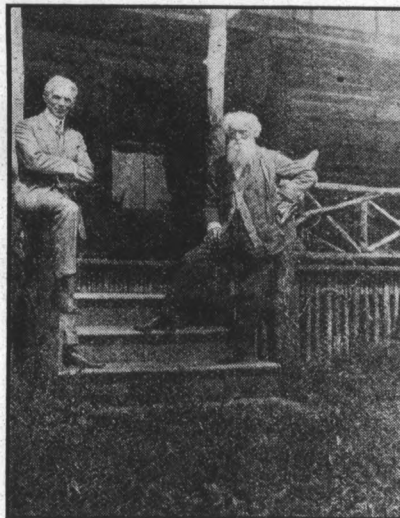
Detachment of Italian Infantry Preparing to Meet Approaching Austrian Soldiers.



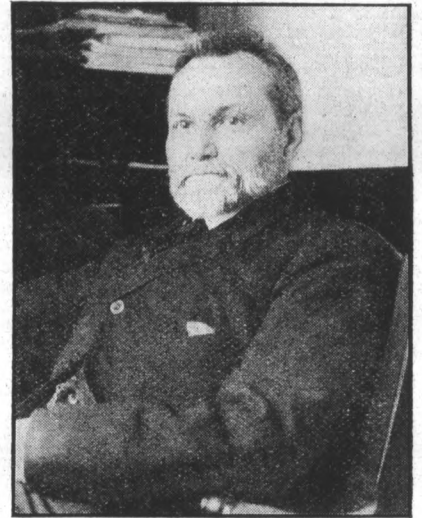
Recruiting Sergeant is Doing Utmost to Prevent Conscription.



Haelen Clergymen and Laymen Pay Tribute to its Dead Heroes on Anniversary of Battle of Haelen, Belgium.



Henry Ford Visits John Burroughs at Roxbury, N. Y.



Dr. Horton Declares U. S. will Furnish Europe Dyes Hereafter.



Scene During Progress of National Amateur Golf Tournament at Detroit.



Gentlemen Farmers of Long Island Have Introduced to the Judges the "Horse to Lawn Mower" Class.

THE RED MIST.

By RANDALL PARRISH.

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CHAPTER XXIX.

We Drive Them.

IT was silent enough within—not a movement, not a sound. I could perceive dimly the motionless figures clustered about the windows in breathless expectancy, but all was ready, and not even a whispered order was being exchanged. Outside there was scarcely any more noise audible—the occasional pawing of a horse, a distant thud of feet where some infantrymen were being hurried into position, and now and then an indistinct voice. The caution shown, the force displayed about the church, surprised me. Surely no such effort would be made merely because of a vague suspicion that a man and girl might be hidden within. The leaders all knew that I was not likely to surrender without a fight, and that I was armed, yet this could hardly account for such preparation.

Could it be they really had a faint glimmer of the truth, that they realized the possibility of a Confederate raiding party in the neighborhood? They had shot Harwood's picket, and knew him to be a southern cavalryman from the uniform he wore. This might account for the display of force with which they invested the church before demanding admission. No doubt the heavy log walls looked formidable, and mysterious in the moonlight. But, if they really suspected a garrison within, why should their line be thus extended, within easy musket shot of the windows? The conclusion I arrived at was, that Fox made this open display of force in the hope of avoiding bloodshed. He desired to capture instead of kill, and wished above all else to protect Noreen from danger. If we were alone within the church, escape was clearly impossible, and the probability strong that no resistance would be attempted.

The silence, the long wait, got upon my nerves. I could see little, and the few sounds reaching my ears conveyed no information of value. What were those fellows doing? What could cause their delay? The soldier behind me was humming softly; a foot scraped on the floor to the right; I caught the soft swish of Noreen's skirt as she changed position; the moonbeams glimmered on a lifted rifle-barrel; there was all about a suppressed sound of breathing. Good Lord! would they never move! What could they possibly be doing out there?

A half dozen blows rang sharp on the wood of the outer door. Not a sound answered from within, although I could feel the men straighten up, and sense the sharp intake of breath. Again the blows crashed, as if struck by the butt of a musket.

"Open up in there!" roared a voice, so muffled as to have no familiar sound, "or we'll break down the door. Come, Mister Spy; we've got you trapped."

"Sergeant Wyatt, the lieutenant wants yer," the whispered words swept down the line of waiting men, and I hurried forward. Harwood was in the dark vestibule close beside the big door.

"That you, Wyatt?" he asked softly, uncertain as to my identity. "They are after you, and have no idea anyone else is here. You answer, and warn them what they're up against. I don't mind a fight, but am hardly ready to commit murder."

"Do you hear me in there, Wyatt?" the gruff voice without called. "This is your last chance; come, don't be a fool. We know you are there, and there couldn't a rat get out, and not be seen."

"Who are you?" I asked. "I want to know who I am dealing with first."

"I am Major Moran, Twenty-first Ohio Infantry."

"Is Captain Fox there?"

"Yes—here Fox; the fellow wants to talk with you."

There was a sound of movement without, the murmur of a word or two spoken in subdued tones; then Fox's voice raised to carry through the intervening wood.

"Sorry this happens to be my job, Wyatt," he said. "I am not in command, and therefore can offer no conditions of surrender. But for Miss Harwood's sake I hope you will not attempt to fight; we've got a total force out here of over two hundred men."

"So I see," I answered coolly, "including Cowan, and my old friend the lieutenant. Quite a compliment to send half a regiment after one man."

"Our having such a force is largely

accident," he responded somewhat stiffly. "But that is neither here nor there; your escape is impossible."

"I am not considering escape," and I spoke loud enough to be heard clearly. "This is going to be a fight, Captain Fox—a real fight."

"A fight! What, you alone?"

"Oh, no; there are men enough in this church to make it quite interesting. That is why I warn you—we are soldiers, not murderers."

"What! You think that bluff will work?"

"Captain Fox," broke in Harwood bluntly, his voice nervously sharp. "I command Troop 'C,' Third Kentucky Cavalry. This is no bluff, sir. I give you fifteen minutes to withdraw your men; at the expiration of that time we open fire."

The surprise, the shock, of this unexpected development and threat was plainly evident. I heard Fox step back from the door, and speak earnestly to some one; Moran swore savagely.

"What force have you?" he roared, the insane question causing Harwood to laugh outright.

"Come and find out," he answered mockingly. "It is no trouble to show goods. Better go back to the other end now, Sergeant," he added in lower voice, and gripped my hand. "The ball is about to open. Where is my lady cousin?"

"I put her on guard over the prisoner. She will be out of range there, and have something to do."

"And gives you another fighting man—I see. Queer duck, that preacher—a bit of a knave to my notion, and one of the finest liars I have ever heard; he'll bear watching. Ah! our friend the major has come to his senses—look yonder! They are moving back out of range."

"Ay! and concentrating a heavier body of men this way."

"Of course; the first assault will be from the front. Tell Wharton to spare me two or three more men, and send a couple from your end. They may make a rush from all directions, but the real fight will be here; they are going to try us out, that is certain."

"You can trust Fox for that; he is a fighting man, whatever may be the inclination of the major—and Cowan is a wolf. Listen! that is his voice now."

I walked back to my station, speaking to both Wharton and O'Hare as I passed. The men we detached hurried to the front, and I took the vacant place of one of them at the open window, back of the pulpit. The line of men threatening this end of the building had been drawn aside, out of direct rifle range, and seemed to be grouped opposite each corner, and were so closely bunched together as to make any estimate of their numbers impossible. They were only shapeless shadows, with moonlight gleaming from their weapons; and an occasional voice breaking the ominous silence. What their purpose might be in assuming such formation could not be determined; were they merely guarding against an effort on our part to break away, or did they contemplate an assault in conjunction with the larger force at the front of the church? No further movement, or word, gave me any clue, but the manifest lack of ordinary military formation caused me to suspect that these fellows were Cowan's guerrillas, and that the reinforcement of cavalrymen had been sent elsewhere. Once a man passed between the two bodies, bending low as he ran.

There remained nothing to do but wait their action, ready for whatever might occur. I passed along the wall from man to man, assuring myself each was at his station, with loaded weapon, and well filled cartridge belt.

"The fight will begin in front," I whispered, unable to distinguish faces, "and no firing here until I give the word."

In the dark corner where the prisoner sat motionless against the log wall, my eyes could distinguish nothing.

"Noreen."

"Yes," and she stood up. "Couldn't you see me?"

"Not the faintest shadow. Your prisoner is quiet?"

"He hasn't even spoken, and as his hands and feet are bound, he is very easily guarded. You think they will attack?"

"Beyond question; they are getting ready now, and I can only remain here a moment. I—I wanted to thank you for the choice you made."

"You mean my coming with you? You are glad I did?"

"Yes, very glad," I said earnestly, "for you are just as safe here, and—and I would rather have you near me. This may prove a desperate struggle; we are terribly outnumbered—and—and, well you know you—you trusted yourself to me—you are under my protection."

There was no answer; perhaps I had said too much. I stood waiting other words burning on my tongue. Suddenly a volley roared out, starting in the stillness, the simultaneous crash of fifty muskets, the speeding bullets thudding into wood. I heard one cry of agony—a shout of command—the sharp bark of carbines—then a grim, threatening yelp of voices. One leap brought me to the window, with gun-barrel thrust forward across the sill. The two black shadows were disintegrating, breaking up, the units spreading out like an opening fan, in headlong rush toward the door at the south corner. There was no firing, no flash of powder, just that wild yelping, as though a pack of wolves smelt blood, and that reckless dash across the moonlit open. I saw figures, not faces, a gleaming of poised weapons, a huddle of leaping bodies.

"Fire!" I roared, my voice rising above the hideous din. "Give it to them!" and pulled trigger.

I have no clear knowledge of what followed—it was all so quickly over with; a mere mad moment crowded with vague glimpses, vanishing and changing in the lurid light of the guns. The whole interior of the church blazed and echoed, the smoke choking us with its fumes, the noise stunning our ears. I heard the chug of bullets flattening against the logs, smothered oaths, the crash of an overturned bench, a scream as shrill as a woman's that made my heart leap, and Harwood's voice calling out the same word again and again. But although I heard all this, I hardly knew it, my whole thought riveted on those black figures in front of me—those reckless devils we had to kill, or drive back. And we did it! From every window, from every hastily smashed pane beside the door, we poured our fire—the carbines spitting into the dark, their sharp barking incessant. Barrels grew hot, the smoke drove back choking into our faces, but we pulled triggers, aiming as best we could in the moon-gleam, now changed to a red mist. They stopped; hung for a moment motionless, the ground dotted with the dead; then tried again. There was a roar of musketry, the crack of rifles; bullets chugged into the logs, and came crashing through the windows. Glass showered upon us, and the man next me went over like a log; someone struck me across the face with a bloody hand, and a shot splintered the stock of my gun, numbing my arm to the shoulder. I gripped another weapon out of the stiffening fingers of the man on the floor, firing again blindly into the smoke cloud. For an instant I could see nothing but that white vapor tinged with red and yellow flame; then some breath of air swept it aside, and the attackers were drifting back, running and stumbling. There were motionless bodies on the ground—a half dozen in a heap before the door; with here and there a figure crawling in painful effort at escape.

"Stop firing!" I cried, "they've had enough. Pass the word to those men at the door."

The fight at the front held longer, yet it was scarcely five minutes when the last gun cracked, and a strange silence took the place of that hideous uproar. For an instant not even a cry from the wounded broke the stillness, the men leaning out of the windows watching the disorganized retreat. Then someone gave an exultant yell, and voice after voice caught it up, the old church echoing to the wild battle cry of the South.

"Steady men, steady," shouted Harwood from the door of the vestibule, his voice cleaving the din like the blade of a knife. "This is only the first act. Load!"

CHAPTER XXX.

A Way of Escape.

THE light of the moon streamed in through the south windows in a flood of silence, revealing the overturned benches, the moving figures along the walls, the smoke cloud drifting upward to the rafters. The lieutenant, after a brief word to his men in the vestibule, picked his way down the narrow aisle, stopping an instant to question Wharton and O'Hare. With one quick glance through the window, I stepped down from the pulpit platform to meet him. He was bareheaded and coatless, and even in that dim light I could perceive a dark stain, like oozing blood, on the front of his shirt.

"You are wounded?" I exclaimed.

"Nothing to worry over," he replied

easily, his eyes laughing, "a mere touch in the shoulder, which, however, has put my left arm out of commission. Ah! fair cousin!" and he held up his hand in sudden greeting. "We who are about to die, salute you."

"Do not say that," she pleaded.

"Surely the victory is ours."

"Ay! we win the first round, but it has cost us heavily. I doubt if we have such luck again. Yet forgive me; those were careless words, but the Harwood breed are given to intemperate speech." He turned to me. "What loss have you, Wyatt?"

"Two wounded, and one killed," I answered soberly. "We had Cowan's guerrillas to meet out there."

"Yes, I know; the infantrymen stormed the front, and the troopers peppered the side windows. They meant to keep us all busy, and try out our strength—O'Hare got the least of it, and never lost a man; Wharton has three down, while they got five of my lads. The front doors are fairly riddled; a good blow with the butt of a tree will send them crashing in."

"You believe they will attack again?"

"Lord—yes! They know now what they are up against. That man Fox is a soldier; he and a dozen others were at the door. They'll consolidate next time, trust to the weight of numbers, and break through. They respect us now, but we haven't licked the fight out of them by a long chalk. I'm going to take three of your men."

"That leaves only one to a window."

"You will have to get along. If the attack develops at your end I'll reinforce you; but it will not—the whole kit and caboodle are coming straight for those doors—Fox knows their condition. Well, that's enough; there is too much to be done to stand here talking—send me the men at once."

He whispered a word to her, some good-natured pleasantry, I thought, as he bowed over her hand as though they parted in a gay parlor; then turned laughing away, and picked his passage down the aisle, a slender, debonaire figure, whistling a gay camp tune. I stared after him, scarcely able to comprehend such gay-spirited recklessness, when he stopped suddenly, and faced about.

"Do what you can for your wounded, Wyatt," he called back, his voice instantly serious, "and keep my fair cousin out of the ruck."

Several figures fell in behind him as he went forward—the men he had asked for from Wharton and O'Hare—all disappearing within the blackness of the vestibule. Leaving one man alone posted at each opening, I had the others of my small company bear the two wounded men to the further corner, making them as comfortable as possible. The dead man was laid out on one of the benches, and then the three selected for that duty were sent to join the lieutenant. This depletion of force left me a window to defend alone against the second attack, the opening to the left of the pulpit, next to the corner in which lay the wounded men, and the prisoner. As I crossed the platform, and took my place, Noreen arose from beside one of the bodies, and her hands grasped my arm.

"The soldier who was shot in the chest has just died," she said, her voice trembling. "He—he tried to tell me something, but—but it was too late."

"And the other man?"

"His hurt is not so serious. I tore my skirt and bound it up, but there was no water. I wish he wouldn't groan so."

Her face, white in the moonlight, was uplifted; I even thought I could see the glint of tears in the eyes. Suddenly a great wave of sympathy, of regret, seemed to sweep over me, and I leaned the carbine against the wall, and clasped both her hands in mine.

"We grow accustomed to groans in war," I said swiftly, "but what unmanly me is your being here exposed to all this danger."

"Oh, no one will hurt me; I am not afraid for myself—truly I am not. Captain Fox would never permit them to harm me."

"True; if Fox comes through alive; but Cowan and Raymond are both here also, and I know not which I distrust the more. I did wrong to permit your ever coming with me; to risk your life in so desperate a game."

"Do not say that, Tom," her voice eager and earnest. "I am no worse off here than I would be if you had left me in Lewisburg. It was my choice, and even now I would rather be here with you. Why," she paused, drawing in a quick breath, "if—if I had remained behind I might be helplessly in the grip of Anse Cowan! Have—have you forgotten that?"

"No, I had not forgotten; but there is danger enough here—more than you realize. You have never seen men mad with battle lust, crazed from victory. They see through a red mist, and forget sex. They are coming in here presently, firing and killing, smashing their way through from wall

(Continued on page 244).

Organized Agriculture in Belgium

By WILLIAN B. HATCH, Member of American Commission.

I CANNOT realize the contrast which must reflect the condition of Belgium today, with the condition as we found it on the twelfth of June, 1913. As we crossed the line from Germany we left behind the red tiled roofs of rural and urban buildings for the French and Flemish grey. Farming methods seemed contrary to expectation, a little less intensive. Some fences appeared and some cattle were grazing in the fields.

Belgium is a little country, said to be the most densely populated coun-

try in the world. Belgium is less than one-fifth as large as Michigan. Yet she has over three times the population. And one significant fact, in connection with the calamity which has overtaken her, is that she owns in Africa the rich Congo Free State, a colony eighty times as large as Belgium herself.

In Belgium the dog is generally used as a draft animal. I was surprised at the size of the wagon to which one of these dogs would be hitched, and the size of load one of these animals, by the aid of the owner over hard places, can haul. No other market place is more interesting from this viewpoint than that of Brussels. The carts or wagons are specially constructed for the dogs. The vehicles are of unique design. The dog is either hitched between the thills of a cart or under it, with a curve in the axle to permit of his trotting immediately under the center of the load. It is said these dogs are hitched up at four o'clock in the morning and are not unhitched until eight o'clock at night. The dog quickly learns to lie down or sit down as soon as the cart stops, and stops are frequent, and the roads are good. It is said a good dog is worth from \$35 to \$70 and will pull 300 pounds. At the market places the dogs seem to visit, even hold conventions, and discuss good roads, shorter hours and better wages. They seem to salute each other in the street when they meet and to show some rivalry in getting over the ground the most quickly. Milk and vegetables and bread are the commonest commodities hauled in this way, though not infrequently these conveyances are the city delivery wagons.

Instruction in agriculture in Belgium is compulsory in the primary and secondary schools to a considerable extent. "Agricultural engineers," 27 in all, one for each province, go about among the farmers at government expense. On "market days" they are in attendance at the public markets to give any instruction along any lines which the farmers might wish. They are appointed by the minister of agriculture and are graduates of agricultural schools. They are all decreed men and most of them hold doctor's degrees. In all primary and secondary schools teachers are required to

Co-operative Production.

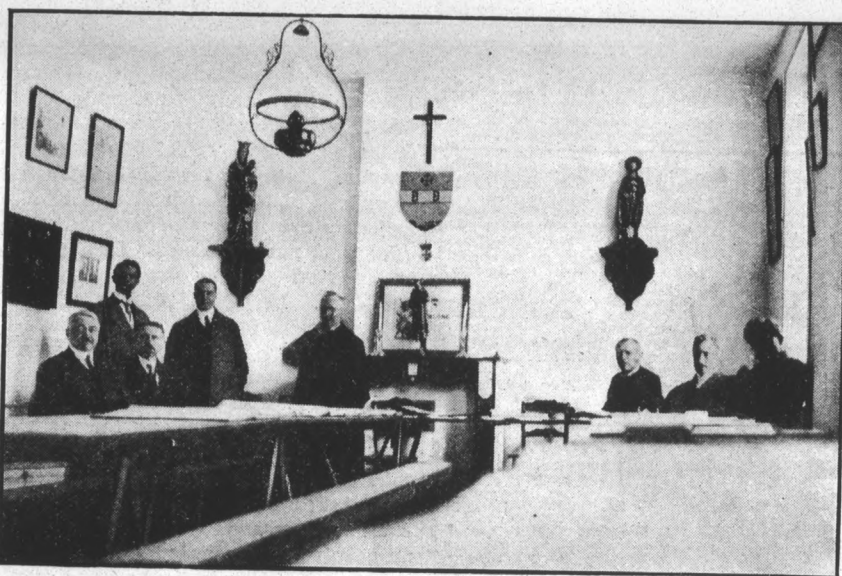
Co-operative production in Belgium is confined chiefly to dairying. In 1910 there were 556 co-operative dairies with 57,000 members owning 163,000 cows. The value of the products for that year was \$8,000,000. These products are sold in the main to the

consumer direct. The surplus is sold at auction in the butter market at Brussels. There is no export trade. Belgium actually imports butter. The farmer is paid fortnightly according to quantity and quality by butter-fat tests. The dairies are federated. The capital for the creamery is furnished, partly by shares subscribed by the farmers and the balance is borrowed from the rural bank. The average cost of a creamery for 300 cows is \$2,000. The farmer delivers his own milk and takes back the skim-milk. Skimming stations are also provided as branches of the large steam dairies. The co-operative principle of "one share, one vote," regardless of the number of shares held, largely prevails, though other forms of organization are permissible. While the price

Co-operative Credit.

Rural credit and finance in Belgium is provided by Raiffeisen Banks and agricultural mortgage banks, similar to those obtaining in Italy and Germany. The Raiffeisen Banks are federated to form a central credit bank. The central credit bank receives deposits from the Raiffeisen Banks and in turn loans to those in need of funds. The credit extended to the individual members of the rural banks is given to them, not because they are proprietors or have big fortunes, but because of their personal integrity, and for the purpose of augmenting the production of the farm. When the central savings bank has not enough funds it can call on the general savings bank, a state institution. It corresponds to the postal savings banks of some countries. It has offices in the post office and in the other banks. It, however, is not a co-operative institution. The central bank, which makes applications to the state or federal bank for a loan, guarantees it.

Long term credit for the purpose of buying land is provided through agricultural mortgage banks. These banks do not loan their own funds but guarantee, for a small commission, the loan of the individual borrower to the general savings bank, which furnishes the money. It gives to the general savings bank, in addition to its own guarantee, the security furnished by the individual borrower. The individual borrower pays four and one-half per cent, as a rule, the mortgage runs usually 30 years on the amortization plan. The borrower can pay in full at any time and without having to pay any commission. Bonds are issued on the mortgages to the same amount commonly in denominations of 100



Farmers' Co-operative Bank at Terban, a Suburb of Louvain, Belgium.

of butter has not been materially increased there has been a decided improvement in quality. The small farmer has been put on a cash basis, where formerly he had to take the price of his butter in trade. The larger farmer makes his own butter, to a considerable extent. No milk is taken at the co-operative creamery from non-members.

Co-operative Purchasing Associations.

Small farmers bulk their purchases or orders, then turn them in to be filled by a co-operative purchasing organization. Better goods at lower prices are realized. The co-operative

francs (\$20). These bonds bear three to six per cent interest. They are not listed in the public market, but sell readily at about par, according to the money market, being taken up mainly by agricultural organizations. The farmer pays four and one-half per cent, the bond sells for 3.6 per cent and the general savings bank gets the difference as its profit. The farmer can get the money on his mortgage as soon as it is drawn up, as the bank has bonds on hand and is selling them at all times.

There were 15 agricultural mortgage banks, and 538 Raiffeisen Banks

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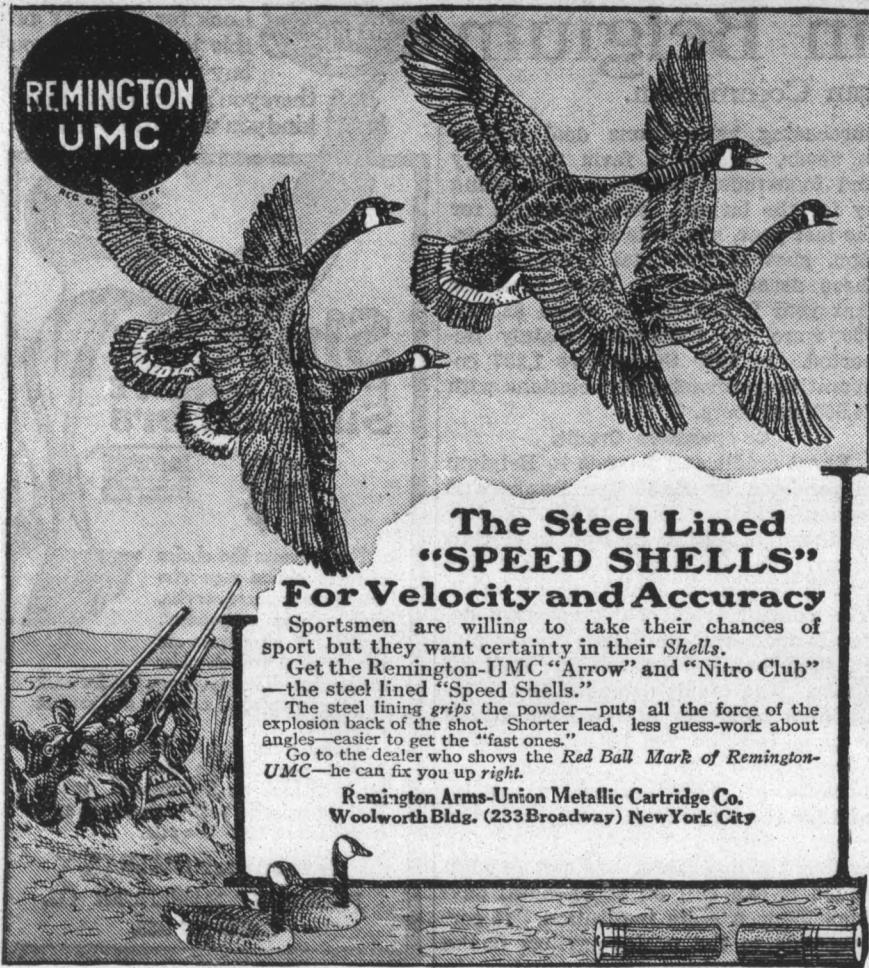
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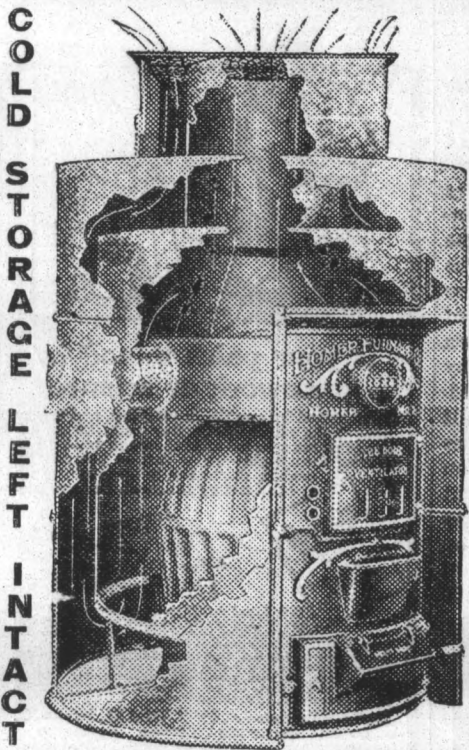
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in Belgium in 1910. The rural banks loaned \$800,000 that year and had at the close of that year, outstanding loans aggregating \$2,200,000, and the agricultural mortgage banks had outstanding about two and a half million dollars. There are no recorded losses in the administration of the rural bank in Belgium. There were only three Schulze-Delitzsch Banks in Belgium at the time of the Commission's visit. These were of the limited liability type.

I can, again, by no stretch of the imagination realize that the beautiful city of Louvain, where we took testimony, is now razed in ruin. In order that we might see one of the little Raiffeisen Banks in action, we went out into a small suburb of Louvain and examined the Terbanck Raiffeisen Bank. This was organized 15 years before our visit to it, and has 150 members. It then had outstanding loans to the amount of \$70,000. It accepts deposits and then had on deposit \$300,000. The cashier of the bank was the local priest. He gave his services gratuitously. It is not uncommon to find the local minister or school teacher taking a leading part in the organization and administration of these rural banks in most of the European countries. This is probably due to the fact that these citizens have had superior educational training and advantages and in addition, which is very important, of their having the confidence of the community, are natural leaders. It appears, however, to be the policy of these organizations to train competent administrators from amongst the rank and file of the ministers and teachers as soon as they are capable of doing so. It seems apparent, however, that the organization of the country along these natural neighborly lines, and on a permanent, self-help, co-operative and co-operating basis, cannot but strengthen the fabric and fiber of citizenship throughout the nation. Its tendency is to make wide-awake, progressive, constructive, thrifty citizens out of the entire membership. When you ponder over 550 such organizations in a country less than one-fifth as large as Michigan you get a glimpse of the possibilities along agricultural educational lines which is inspiring and enthusing.

The snapshot of the interior room which represents the home of this little bank, suggests its simplicity. Like the others, it makes loans in small amounts for productive purposes only. The membership in this bank is confined almost entirely to market-gardeners, farmers, with little farms averaging from seven to eight acres. Over half of them own their own land. Deposits are received from both members and non-members. The rate of interest on savings deposits is three per cent. In this little bank the deposits made by children amount to \$5,000. There have been no losses to either the bank or sureties on the loans since the establishment of the bank. The qualifications for membership, are residence in the community, sobriety and honesty. Each member must take out two shares of one franc each and pay one franc addition as an admission fee according to law.

The bank has a department which assists farmers to become owners of live stock. A farmer wishing to buy cattle receives his loan from the bank and offers as security the usual signatures and a mortgage on the live stock purchased. The bank takes out insurance on the cattle making them a safe security for the loan. If the cattle get sick the live stock insurance department sends a veterinary on its own initiative to treat the sick animal. If the animal gets well the owner pays for the services, if not, he gets the insurance, less what he owes the bank on the loan, negotiated for the purchase of the animal.

The members of this bank also buy

their supplies through its aid. They meet on a certain day each month and give orders to the cashier of the bank for such supplies as foodstuffs, fertilizers, etc., as their needs require. This branch of the bank is known as the association of cultivators. The members of the association are members of the bank. They pay no shares or dues into the association of cultivators, with the exception of a small amount to cover the cost of printing the order blanks. The association purchases its goods from the central or Raiffeisen federation, which in turn purchases the goods in quantities and ships them direct to the local association. The farmer gets a lower price and also obtains unadulterated materials and full weight. The orders for supplies of this association of cultivators of the Terbanck Bank aggregate \$2,000 a month.

The cashier of this bank informed us that "they accepted to membership in the bank, anyone of good character, but did not loan to liquor drinkers." They also had on the walls of the bank, colored charts showing the influence of alcohol on the human system and the results on another chart, of a temperate and industrious life. The effect of promoting temperance and sobriety and thrift, through these co-operative organizations was often noticed by members of the Commission and frequently emphasized by officers of these organizations. Some reported whole communities redeemed from intemperate habits through one of these organizations.

THE RED MIST.

(Continued from page 242).

to wall. Your cousin is not the kind to ever raise a white flag—he'll go down fighting, and his men beside him. I've been thinking of it all, and there is one thing I want you to do now, before the final assault comes."

"What?"

"Let me send you out under flag of truce to the protection of Captain Fox. He'll guard you as he would his own daughter."

"And leave you men in here to die?"

"To take our chances, of course; that is a part of the trade. Your remaining with us cannot change the result, whatever it may prove to be—and, with me, it is merely a choice between bullet and rope."

She buried her face in her hands, but there was no sound of sobbing. I waited, ashamed of my inconsiderate words, yet when her eyes were again lifted they were tearless.

"I know," she said, "and you feel that it will be best for you—for you, if I go?"

"Yes, Noreen," earnestly. "The very knowledge that you are here saps my courage. Surely you can understand why this should be so, for the more desperate our defense the more ruthless our enemies will prove in the hour of victory. The very knowledge of what the result may be would almost lead me to surrender and, to a less degree, your presence here must affect your cousin."

"The lieutenant! Why to a less degree?"

"Because," I broke forth swiftly, "you are less to him. This is your first meeting; there is no tie between you, except a distant relationship just discovered. His solicitude is merely the protection of a woman, while I cannot forget that you are my wife."

"A temporary matter, a mere form. So you wish to forget?"

"I did not say that, and have never thought it."

"Yet you regret?"

"Only because of the danger in which you have been plunged—here comes Harwood now."

There was no mistaking the slender erectness of the man's figure even in that dim light, nor the cheerful sound of his voice, as he paused, glancing out through the side windows, and giving laughing greeting to the soldiers.

"Ah! my bold gunner of Staunton," he exclaimed as he stepped onto the pulpit platform, "and is everything still quiet here? Now you know what it means when they sing if you want a good time fine the cavalry. Let me get a glimpse without."

He stood gazing forth into the moonlight, and our eyes took in the same scene. Except for the dead bodies lying in the open, there was little to see although a few figures, apparently of men, moved back and forth at a distance well beyond range.

"As I thought, Wyatt," said the Lieu-

tenant, finally turning about. "They are massing their forces again at the front. My lady you will witness some real war presently."

"They may delay the next attack till daylight."

"No such luck; those fellows are soldiers, not Indians, and are anxious to get through with the job."

"I have been urging your cousin to let us send her out under a flag of truce," I said quietly, "to the protection of Captain Fox."

"That is really what I came here for," he admitted, "and we haven't any time to spare. What say you, fair cousin?"

"Is this asked of me on your account, gentlemen, or my own?"

"Your own, of course."

"Then my choice is to stay." Suddenly I felt her hand on mine. "You will not refuse me this privilege, Tom?"

"No," reluctantly, yet at the same time strangely delighted at the prompt decision, "but I thought the other best."

Harwood laughed lightly.

"Again the blood," he said gaily. "Bah! so far as I am concerned the asking was mere form; the answer was already in the lady's eyes. But I must go back to my lambs."

"You have secured the door?"

"The best we can; braced it with benches solid to the wall. The wood will not resist long, but 'twill make an ugly abatis for the Yanks to clamber in over."

He lifted his cap gallantly, and turned away, humming some gay tune softly as he felt his way along the moonlit aisle. His very light-heartedness left me sober and depressed. She must have realized all this, for her handclasp tightened.

"You are sorry? You wished me to go?"

"I hardly know, Noreen; I have every confidence in Fox—who is making that noise? Is it the preacher?"

He was propped against the wall, not far from us, and I bent over, noting how he was bound. Instantly I cut the cords, and began rubbing the man's wrists to restore circulation.

"I never noticed you were strung up like that, Nichols," I said earnestly. "Who did the job?"

"The sergeant," he answered, choking. "I tried ter speak as soon as I saw you an' the lady yere, but I couldn't git the gag out 'er my mouth. Bend down a bit lower; I don't want o' them sojers ter hear."

"All right—what is it?"

"Yer ol' Jedge Wyatt's boy, ain't yer?"

"Yes."

"An' she's the darter o' Major Harwood?"

"This is Noreen Harwood."

"I thought so, but thar ain't hardly light 'nough fer me ter be sure. I married yer over cross ther mountings—an' is Anse Cowan along with them Yanks out thar?"

"Yes, and all the gang, excepting old Ned, who was shot last night."

"You shot him?"

"Well, it was my pistol; we were fighting together." Suddenly a new thought swept through my mind. "See here, Nichols, you are in as bad shape as we are. Anse has treated you like a dog, and he will never forgive you for that marriage, even if it was performed to save your life."

"It wasn't," he chuckled. "I wa'n't afeerd yer would shoot. I wus thet mad at Anse I didn't care; but I reckon he'll 'bout skin me alive if ever he kitches me here."

"Do you know of any way out?"

He glanced about cautiously, to assure himself that no soldier was within earshot.

"The baptistry."

"The what?"

"The baptistry under the pulpit; this is a Baptist church, and there is an opening in the floor just back of where you are. Feel a little to the left—yes, about thar—don't you touch an iron ring? What, well thar's one thar, an' it lifts two puncheon slabs spiked together."

"Yes, but what is below—just a tank?"

His voice trembled with eager excitement, and he gripped me tightly.

"I ain't afeerd ter tell you, 'cause I knew both yer daddies, an'—an' I reckon yer'll take me 'long with yer, won't yer? Yer won't leave me yere fer ter face that Anse Cowan? Yer'll promise me that?"

"Of course, Nichols," I said soothingly, the man's cowardice almost disgusting, "if you show us a way of escape we'll go together if the chance comes—what is it, speak quick."

"I know the ol' trail over the mountings down ter Covington; I reckon as how you couldn't never git thar without me. I thought it all out while I was lyin' there trussed up like a turkey, but they never give me no show fer ter git loose. Now if you folks will cut this yere rope offen my legs I'll show yer how fer ter git out—an' nobody'll never know nuthin' 'bout it."

(Continued next week).

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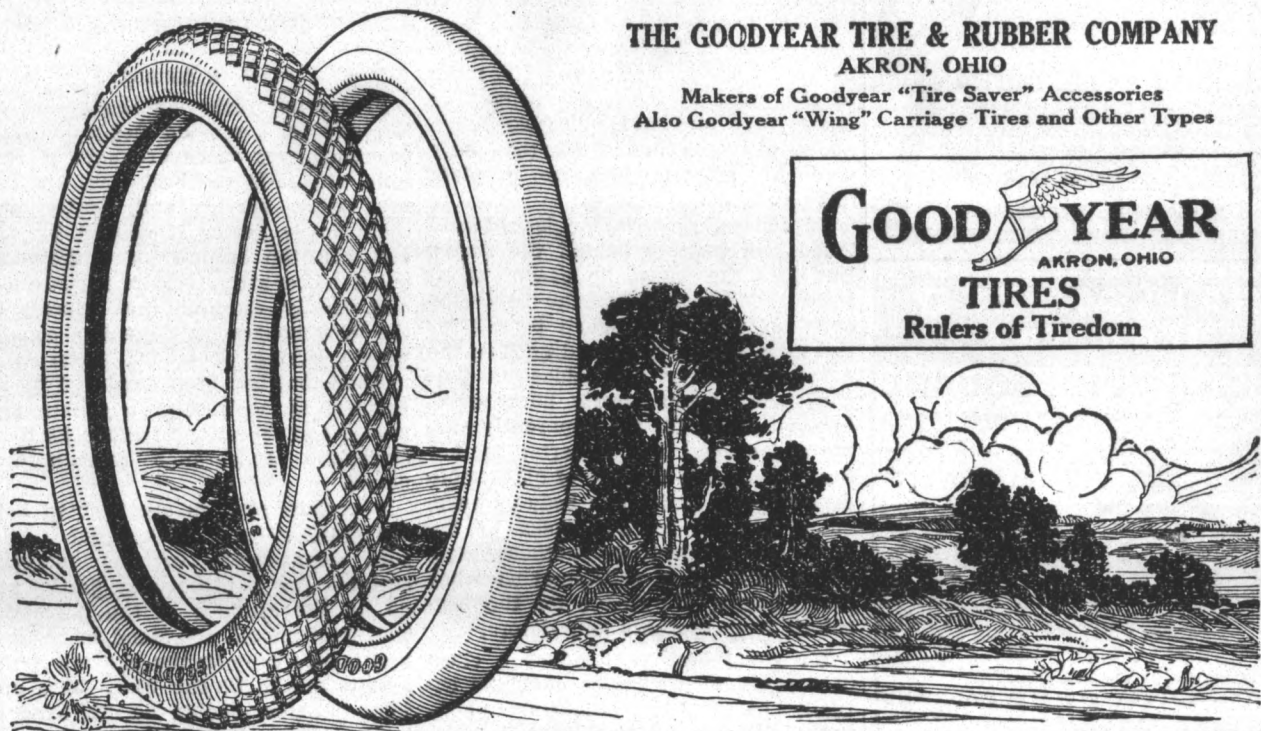
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(2661)

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Woman and Her Needs

At Home, and Elsewhere

Woman's Natural Vocation

THE pride of the family had just returned from college, finished. She boasted of two letters after her name; mother boasted that she could talk in three languages, though mean-spirited friends whispered on the side that she could think in none; father bragged of her knowledge of soils and the solar system; sister quoted her on food values and dishes "au gratin," and brother bowed down in reverence because she had a speaking acquaintance with the football captain. In short, her knowledge was limitless as regards science, both domestic and otherwise, and the family felt they had a right to be boastful.

"She's ready for anything," said mother proudly. "If I do say it, there isn't a better educated girl about here and she's bound to make her mark." "Humph!" grunted grandfather disgustedly. "Can she wash and dress a baby?"

Mother and daughter were shocked, and quite properly. For what place have babies in a school or college curriculum? They hushed grandfather up, but he was heard to mutter later that raising a family was every girl's natural vocation, and it would be more to the point to teach her something about that and not quite so much about the fads and frills that only made her stick up her nose at plain folks at home.

Of course, grandfather is old-fashioned and terribly behind the times. But just the same, he seems about right this time. Even the best educated of women is bound to fall for the little god in time, and such is the great wisdom of our educators that she finds herself utterly unprepared, in most cases, for the apparently simple and normal task of caring for her first child. The number of oldest children who are delicate in body or warped in temper bears witness to the fact that the average mother "practices" on the first child, and uses her dearly-bought knowledge for the benefit of later brothers and sisters.

We could hardly introduce a class in schools where babies could be actually cared for, "practiced" upon, though there are one or two such places in the country. But any school could introduce the study of infant feeding as easily as the study of cooking and food values for adults has been introduced. Mothers might supplement the valuable knowledge by a frank handling of the subject with their daughters. Babies are quite the most important thing in the world, and why not be as straightforward in discussing with our daughters the care of their possible children, as in discussing the care of Persian kittens or bull terriers? Why not prepare the girls to be mothers instead of school teachers or stenographers? Surely the task of bringing children into the world is far more important than spending six hours a day in a school-room or taking dictation from one's employer. It is far more important for one's own baby to be fed right than for Johnny Jones to know how to do cube root, or for a letter to be punctuated correctly.

Quite the most helpless and pitiable object on earth is the young mother whose baby is not thriving. She has nothing to go by but the advice of well-meaning friends, for she has no foundation of knowledge on which to build. It is a simple thing to have a

healthy baby, only the following of a few commonsense rules will suffice. And the first of these is regular habits. Regular hours for bathing and sleeping and eating and these insisted upon day in and day out does much to establish good health. And as for eating, the same rule that her father observes in feeding his prize cattle would hold for her baby. A certain amount of scientifically prepared food at given hours is all that is needed. For the baby is nothing more nor less than a little animal and needs to be handled as one would any other valuable animal.

We hear a great deal nowadays about woman's broadening sphere and her right to choose a vocation. But in spite of the clamor, woman's sphere is still raising children, and will be to the end of the chapter. Why not see that she is prepared to do it instead of wasting valuable time and money teaching her something that only gives her a wrong idea of what she is here on earth for?

DEBORAH.

SUN PRESERVING.

BY C. H. CHESLEY.

Preserving fruits by the action of the sun is a method not commonly practiced, yet there are several reasons why it is the best way. In the first place berries and fruits keep their flavor better if cooked by the sun. In the second place they are much more attractive in appearance, and, finally, an item that appeals to the busy housewife, there is a considerable saving of labor. Here is a method that has been employed by an eastern farmer's wife and her preserves and jellies are famous for their attractive appearance and natural flavor.

Porcelain platters are best to hold the fruit while it is exposed to the sun. Graniteware or any material suitable for a preserving kettle will do, in the absence of the porcelain. The fruit should not stand more than two inches deep in the platters if the results are to be the best. Jars and jelly tumblers should be sterilized in boiling water and carefully wiped out before the cooked fruit is put in them.

Pick out all soft and decayed berries or fruits, remove stems and wash carefully so as not to mash. In sun-preserving the berries should go into the jars whole and unbroken, therefore be careful in washing them. Weigh the fruit and allow the same number of pounds of granulated sugar. Some consider this too sweet and put in less. Put the whole in a preserving kettle, first a layer of fruit then a layer of sugar. Let this stand for an hour then put it on the stove and bring slowly to the boiling point. Boil for a few minutes and skim off anything that appears on the top. Do not stir.

After this preliminary cooking has been done pour the fruit into the platters and place in the direct sunlight. If there is a suitable place indoors, it is much better than placing outside. However, the usual place for such preserving is the top of a piazza. See that the platters set fairly level. This may be assured by nailing a joist on the roof of the veranda. Cover with glass or cheesecloth. Glass is best. This is necessary to keep out flies and insects. Three or four days of bright weather suffice to prepare the

fruit for the jars. Dampness must be avoided, thus it is necessary to take in the platters at the first sign of nightfall or an approaching summer shower. When the syrup becomes thick and almost of a jellylike consistency the jars should be filled. Put on a sealing of melted paraffin and clamp or screw on the tops.

Strawberries, raspberries, currants, gooseberries, cherries, plums and pineapples, to say nothing of other kinds, may be preserved in this way. In fact any fruit, large or small, can be preserved by the sun method and the flavor is better than when cooked on the fire. All sorts of jellies may be put up with less cooking by the same method. Cook the fruit in the usual way, strain out the juice and add the sugar to the hot syrup, boiling just long enough for the sugar to dissolve. Fill the tumblers and set in the sun, covering with cheesecloth. A few days in the bright sun will set the jelly, when the paraffin should be put on. Sun-cooked fruits and jellies should be kept in a dark place to preserve their natural colors.

LETTER BOX.

Replies to "Miss America."

Dear Deborah:—In the issue of the Michigan Farmer of July 3 I read with much pleasure and interest the article by "Miss America," in which she wants to know what other people think.

I am 16 years old and have read the Michigan Farmer for four years, more or less. We live in the S—L—Valley in the southern part of Colorado. My father runs a dairy and peddles milk in A—. The glass bottles, separators, cans, kettles and milk buckets make lots of dish washing. This is my job. We have a 40-gallon tower in the pantry with a sink in the milk-house, with cold and hot faucets. The milk house is 12 feet wide and 20 feet long. In the north end we have a one and three-fourths horsepower "chore-boy," and a washing machine and wringer combined, which is a great convenience, I think.

Now my father does not have a fine barn, blooded stock, all the new machinery, etc., neither does my mother have a lot of fine things in the house. We always have plenty to do; and we all try to have a good time with our work. There are four boys and two girls, of whom I am the oldest. We are one of four families who, although we do live ten miles apart, get together once or twice a month, and have a good time.

I do not think "Miss America" will get a lot of "notions" and be "stuck up" at school this summer and I do think her family will be of a different mind about a few things when she returns home; for no home is complete in this day and age of the world without a water system.—"Miss Colorado."

The Country School Ma'am.

Household Editor:—I am a reader of your valuable paper, although I am a "mere woman," and permit me to say that I enjoy it thoroughly. I particularly enjoy the articles for the welfare of boys and girls and improvements for farm women.

There is one more person whom I believe could be discussed to good advantage through your paper, and that person is none other than the country school-teacher. I have been one of those despised beings but because I cannot do what I consider right, I am seriously thinking of changing my occupation.

The country school teacher, taking for granted "she" is of the weaker sex, is a very insignificant person when she is viewed from general outside, when she is on her throne—generally from 9:00 a. m. to 4:00 p. m., but when she is outside of her realm she is the object of neighborhood gossip, envy, hatred, ridicule, praise, confidence and trust. She is only a human being after all, and while I believe in parents discussing problems of school work with the teacher, I do not believe in the neighbors trying to run her business for her.

It is true that she is paid for devoting her time to the work of the school but that is not always sufficient to take every minute outside of regular school hours. And if Tom Jones or Bill Lewis think enough of her to take her for a ride in that new car, don't act as if it were highway robbery, because she is wasting some of the valuable time that your taxes help pay for. Wouldn't you have done the same thing if you had been her? But, then, I suppose that's different.

She don't teach school on Saturday or Sunday, of course, so what do you suppose she does with that valuable time? I usually did my mending and ironing if I hadn't done it before, or perhaps went to town, on Saturday. On Sunday I went to church if there was a chance, but, of course, I can't say what the others do. There is a difference in teachers as well as in fathers and mothers.

There is either too much expected of some teachers or else they are not able to meet their requirements. Mr. A. thinks that unless she whips at least one child a day she is an utter failure, and Mrs. B. thinks if she does she is a perfect brute. Some people seem to think that the success of the school depends on criticism—and they are right, too. But please bear in mind that there are two kinds of criticism—favorable and unfavorable. Which is yours? We must admit that there is a lot of misunderstanding in life but do we always dispose of it favorably? Maybe Johnnie or Mary didn't get as high a mark in arithmetic this month as they did last. Which is the better way to do—ask the teacher or call up all the neighbors and see if their children suffered, too?

Another thing, do you find fault with your teacher when your school boys and girls can overhear you? If so you are doing a three-fold harm; first, to the child because it encourages him in disobedience and robs him of his respect for his teacher; second, to the district because no teacher cares to stay in a school where she cannot give satisfaction, and this will give your school district the name of being hard to suit; and lastly its distribution robs the teacher of the confidence of the entire school. She no doubt overhears your children tell others and it takes away her courage and her respect for you and her work. On the matter of punishment it is the same in school as in the home.

I found that a whipping or shaking up usually bring the desired result but you pay a pretty dear price for it. Don't you?

Maybe your teacher doesn't care what you say about her but generally she does. I always shall insist that no teacher is not faultless except one, The Great Teacher. If you don't understand her or don't like her, tell her. If you do understand her or like her, then tell the others. But above all, give her a square deal, and I think she will do the same for you.—J. B.

CANNING CORN.

Corn is easily canned according to the method that is being used by the extension workers of the North Dakota Experiment Station. Use newly picked corn, remove husks and silks, boil on cob ten minutes, then plunge quickly into cold water. Slice off the

corn, fill the can full, and add a teaspoonful of salt to each quart of corn. Put the rubbers in place and the covers on loosely, then set the cans into a wash boiler that has a false bottom made of lath so as to keep the cans raised from the boiler bottom. Then boil for three hours and screw on covers tight. The corn is then ready to be set away. The whole ears of corn can be put into the cans, the only difference being that half as much salt is used.—N. D. Ex. Station.

TO TREAT PLANT PESTS.

BY J. M. WILLSON.

There are few pests on house plants that give more trouble than the two or three species of scale to which they are liable. These latter multiply and develop with astonishing rapidity and are very inimical to the vigor and beauty of both woody and soft-textured plants. On the former they can be successfully treated with kerosene emulsion or strong whale-oil soap-suds; but on begonias and other juicy leaved varieties, there is no alternative except the slow process of carefully rubbing them off with a cloth or soft brush.

They should be gone over in this way at least every three or four weeks. Such plants as are treated with kerosene emulsion or whale-oil soap, will need rinsing with clear tepid water in about an hour after the application of the insecticide, and should not be exposed to strong sunlight until dry.

Tomato Salad.

Peel large tomatoes, chill, then slice and put on watercress, sprinkling over with chopped celery, olives and a little finely chopped onion for a good salad. Use cream mayonnaise; serve cold.

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Our latest Fashion Book, containing illustrations of over 400 designs of ladies', misses' and children's garments in current fashions, also newest embroidery designs, and a concise and comprehensive article on dressmaking which gives valuable hints to the home dressmaker, will be sent to any address upon receipt of ten cents.



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Farm Commerce.

Selling the Surplus

By B. H. ALLBEE

WHEN the farmer bartered with the shoemaker, or the tailor, or the store keeper, the question of appearance of supplies did not appear so important. There was less need of attracting favorable attention. The shoemaker probably knew the farmer and was less disposed to be critical than he would have been of a stranger. It is quite likely, too, that the shoemaker might have been a shade remiss in the style and appearance of his shoes. In this respect, then, the two were able to get along without much trouble. But when the farm product goes to market and must compete with a great quantity of other farm products the appearance becomes a matter of such vast importance that it is second only to actual quality. Indeed, a product with good appearance will frequently out-sell one with better quality, but poor appearance. The truth is that the average purchaser in a city market buys almost exclusively by eye, therefore, the farmer has need to study appearance and make his products look as well as he can. The better they look the more likely he is to sell them at a good price.

Appearance Gets Better Prices.

The writer has been particularly interested in seeing the peaches which have come into one of the great markets of the country thus far this year. Some have been assorted and graded before they left the farm. The small baskets in the crates were evenly filled with fruit of substantially the same size and where extreme care was used, of the same color. When the crate was displayed the fruit was very tempting. In some instances they place green leaves over them, but not always and the practice may be questioned because of the fact that the leaves wilt and present a faded appearance which is not wholly pleasing. Of course, a small matter like this is largely a question of individual judgment, but if the producer would get the best appearance possible for his fruit he probably would not distribute green leaves to wilt and look stale upon his crates.

Such peaches as this will sell at once and bring the highest price of the day. Perhaps they are of no better quality than some other fruit which is not so carefully handled, but the difference of a dollar or more in a crate is well worth considering and will enable the grower to obtain the most possible for his goods.

Advantage of Even Grading.

On the other hand, the same market has been flooded a portion of the time with peaches packed in the old time peach basket. The tops are satisfactory but a few layers down the size begins to diminish and by the time the bottom is reached the size and quality of the fruit leaves much to be desired. If a buyer will take it without examination there is little difference in the price, but buyers are wiser than they were a few years ago and it is difficult to secure an order without displaying the fruit. And when that is done the basket will be turned back. Unless the fruit runs even throughout it is difficult to dispose of its profitably.

Buyers are not prejudiced against small fruit. Some prefer it and were the small sized peaches packed in baskets by themselves, and sold for just what they are, small fruit, it will sell readily enough. It is the deception which is practiced that arouses the buyers' opposition. They have no ob-

jections to small peaches because they are small, but do have objections to buying a basket by the fruit on top, which is of good size, even and well colored, then to find further down the small fruit, often partially green and in other instances so far gone as to be positively decayed.

Should Help the Commission Men.

Not infrequently the farmer will say that he is not to blame for what the commission man does after the fruit arrives at his store, and quite often he is right. But the farmer can establish his own trade mark, he can select a commission man who will not repack for the purpose of deceiving customers and he can insist that his product, bearing his trade mark, shall be handled in such a way that his reputation does not suffer.

Fifteen years' experience among the commission men of the largest city in the United States has convinced the writer that the proportion of commission men who take advantage of the customer on one side and the producer on the other is not large, though every market has some. If, however, the farmers perform their part in the transaction there is less likelihood of any such practices. It requires drastic measures sometimes, but a few examples will suffice to put a stop to this in any market.

The commission man, on the contrary, blames the producer. He says that he has to take whatever is sent him and that it is necessary to pack the goods in this way to sell them at all. But this argument doesn't stand analysis excepting in rare instances. Of course, there are farmers and oth-

men saw the light and followed substantially the same methods. The results in all instances justified the additional effort and cost of preparation.

And the fruit grower in Michigan who must, perforce, send his product to a distant market where it is to compete with the products of other orchards, which the Michigan grower never saw, must adopt the same general method if he hopes to secure the best prices for his products. This is a repetition, it is true, but it is one of those repetitions which serve to emphasize the need and will develop a business if adhered to that will out-last the season.

Make Inspection Easy.

Be careful of your peaches. Pick them without bruises. Grade them according to size and color. Pack them honestly in baskets or crates so that they will run evenly all through. The crate with the small baskets is best because it enables the buyer to see exactly what he is getting. There is no deception and no opportunity for any. The basket holds but three or four layers and it is not difficult to discover what is being offered in each one. With the fruit packed in this way, perfectly sound and well colored, there is no question of price.

Every man who raises produce for sale, no matter whether it is fruit or

vegetables, should appreciate this matter of color—or appearance, it may best be called. If it is good the buyer feels satisfied and will take what is offered, but if it is off color there will be trouble all along the line and finally the offering will go at the lower value. Sometimes the color doesn't indicate the real flavor of the fruit, but that does not matter for few have an opportunity to taste before they buy. And therefore they are compelled to select by appearance.

Exercise the utmost care in your peach orchards this season. The Michigan peach has an enviable reputation in all markets, but sometimes the packages are so manipulated that the buyer questions whether or not he has obtained a Michigan peach. It isn't easy to discover unless one may be certain of the mark. However, if the grower exercises due caution and sends out only such fruit as will pass the critics in each market then he may be sure of good returns for his effort.

Picking and packing are important parts of the work of peach growing and deserve closer attention than some Michigan growers have given them in times past. Perhaps it will be different this year, but a warning uttered now may be helpful to those who have this crop yet to ship.

Economy in Use of Trailer

ON Tuesday of this week we saw a young farmer marketing 3,400 pounds of corn with his twenty-horsepower pleasure car and a trailer. He carried 2,700 pounds of the weight in the trailer and the other 700 pounds in the car. It was sixteen miles to market and the trip was made in one hour. With a team he would have spent at least ten hours in marketing this load; with the equipment used he was back home inside of four hours from the time he started, fully two hours of which time was spent at the market. Viewed from

reflection will put the thoughtful man right in this matter. All know that a man cannot carry as heavy a load as he can pull on wheels that are on a reasonably good road. In other words, a man's drawbar pull is much greater than his lifting power; this has been pretty well figured out and it has been found that one pound of pull will move an eight-pound load. On ordinary roads, therefore, we usually figure a pull of about 250 pounds for the average ton load.

Efficiency in Use of Trailer.

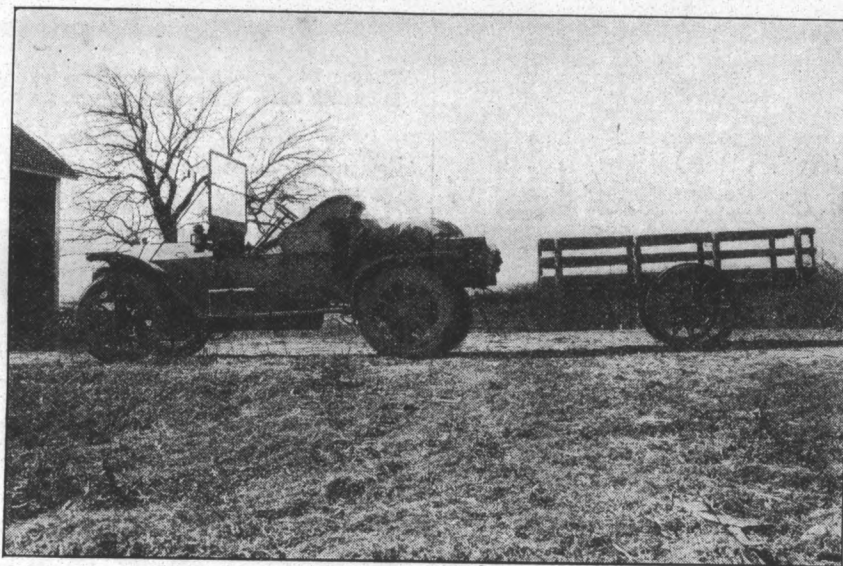
From this it will be observed that there is great efficiency in the use of a trailer. It takes advantage of the drawbar pull and when we come to think comprehensively about it, we recognize at once that practically all of our land transportation is accomplished in this manner. The railroad companies move goods at an average cost of seven mills per ton, whereas if their loads were carried on the engines instead of being pulled by them, the cost would be multiplied many fold. In the case of the young farmer mentioned above, he carried practically four times as much weight upon the trailer as was carried in the machine which did the pulling.

By using this drawbar power the profit from the investment in an automobile is not only doubled but frequently multiplied many fold. There are numerous occasions where automobiles could not be afforded by farmers if they were obliged to merely use them for carrying purposes, but where they can take advantage of the pulling capacity of the machines as well as their carrying capacity, the investments will prove to be exceedingly wise and profitable.

Keep the Machine Busy.

The machine that usually makes the most money for its owner is the one that is used to its fullest capacity. Depreciation is almost as rapid in an idle machine as it is in one that is used constantly, so that the original capital is absorbed quite as fast whether one is getting work out of the implement or not. It stands to reason therefore, that when one buys a corn binder, a cultivator, a plow or an automobile he should employ it in useful and economic work as much as it is possible to do so.

Here, then, is a chance for the farmer who owns an automobile or a truck (for trucks have the same advantage in pulling as the automobile),



Taking Advantage of the Pulling Power of the Automobile as well as its Carrying Power through the use of the Trailer.

er growers who will seek the temporary advantage by packing their fruit in this way, but they are so few that they are scarcely worth noting. They form no considerable part of the great whole who send produce to market.

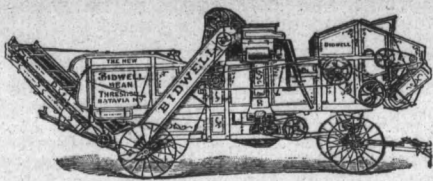
The next few months will be the season for the shipment of fruits of all sorts. Peaches now, apples later, pears in between, and grapes where they are produced, with plums and various other sorts in their respective seasons. It is quite impossible to lay down a separate rule for each one. If, however, the main facts are kept in mind while preparing shipments less difficulty will arise. The market can be kept active and the higher prices can be obtained. The California orange growers discovered that grading and packing according to size and color insured more active selling of oranges. Then the peach, and pear, and apple

whatever angle, this young man's method of marketing is superior to the old system of his father's in which horses were used.

Conserve the Waste Power.

Here is a waste that he transformed into a profit or advantage. If the young farmer could afford a pleasure car without making use of it in marketing his product, he can certainly make the investment a valuable one when the car is used for both a pleasure vehicle and a means of carrying produce to town.

This conservation of waste power appears to be little understood. Most men have not thought the matter through or they would recognize the amount of pulling power that is going to waste every time they make a journey to town in their automobile and take no load with them when there are products to be marketed. A little



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to increase his motor car income by keeping the machine busy more hours and days in the year. And it will be found that on the average farm there are a multitude of opportunities for using a trailer to advantage. We say to advantage advisedly because where one has a load that can be carried in a trailer he can handle it with such increased dispatch as compared with team hauling that the saving of time is very appreciable. The farmer can haul seed, fertilizer, feed, grain, live stock, poultry, coal, posts, salt, flour, and a thousand other things that must be transported to and from the farm and upon it, and he can double the capacity of his motor truck by adding a trailer when marketing milk, fruit, vegetables, grain, hay, etc.

Crop and Market Notes.

Michigan.

Shiawassee Co., Sept. 7.—Weather is favorable for farm crops. Corn is coming to maturity and some fields will be ready to cut in two weeks. Plowing for wheat about done. New seeding looking fine. Clover seed not filling; potatoes badly hit with the blight. Beans, also badly injured by wet weather. Alfalfa ready for the third cutting; sugar beets promise a banner crop; prospects for apples very poor; no pears. Some wheat is going to market; wheat 97c; oats 38c; corn 74c; butter 19c; early potatoes 60c; plenty of feed in farmers' hands.

Berrien Co., Sept. 6.—Alfalfa good, but was hard to secure the second and third crops. Clover seed not filling well. Oats yielded 30 to 70 bushels per acre but of low grade. Wheat yield ranged from 15 to 35 bushels per acre and not a good grade. Corn later than usual, only that on sandy land giving promise of a fair crop. Too wet for beans and spoiling badly. Potatoes 95 per cent of a crop, though some blight is reported. Seeding preparations slow as shock threshing is not done yet. Not many cattle or sheep; hogs in fair quantity; poor crop of late apples; pears a normal crop. Wheat 96c; oats 35c; wool 25 @ 30c; butter-fat 25c; hogs 7c. Market strong for good cattle and mutton.

Hillsdale Co., Sept. 6.—Threshing is in progress and proves that bumper crops of wheat, oats and barley have been produced. Wheat 25 to 40 bushels; oats 40 to 85 bushels, rye light, averaging 10 bushels per acre; wheat was not damaged at harvest time, and is being sold direct from the machine for a little better than \$1. Corn is late and needs three or four weeks of warm weather to ripen; the crop promises well except on low or heavy soil. Late potatoes have been hit hard by blight; not much clover seed; not much plowing for wheat yet.

Livingston Co., Sept. 6.—Oats have been harvested in good condition. The yield of wheat was reduced probably 25 per cent by wet weather. Threshing just begun with good yields reported. Beans almost a total failure on account of blight, though the stand was the best in years. With favorable weather corn will make a good crop. Potatoes will be about 50 per cent of a normal crop on account of the blight.

Ohio.

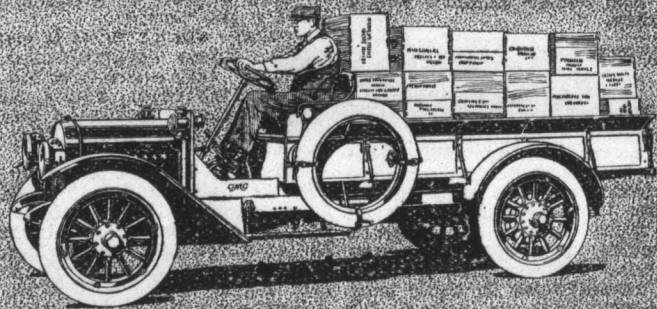
Columbiana Co., Sept. 6.—Cool rainy weather here for several weeks. The farmers are well along with their fall plowing. Oats a bumper crop, running from 50 to 80 bushels per acre; wheat just fair; little clover seed is being made, as the heads do not seem to be filling very well. Potatoes not in good condition; have had very little rot but blight has done considerable damage. Corn is well along but needs a couple of weeks warm weather to mature. There is an abundance of all kinds of fruit, especially apples. Wheat \$1; oats 40c; potatoes 50c; wool 26c; chickens 12½c for old and 15c for young; butter-fat 26c; eggs 22c.

Madison Co., Sept. 6.—The corn crop is still very green. About one-third of wheat and oats yet to thresh; damage by rains has been heavy. The clover seed crop is a failure. Potatoes are good and will be a large crop. It is too wet to plow except sod which some are plowing for wheat, so seeding will be late. Cattle and sheep are scarce and high. Horses in fair demand. Live stock prices steady. Grain prices vary according to quality. Eggs 23c; butter 25c.

Medina Co., Sept. 6.—Wheat yielding between 25 and 40 bushels; oats 70 to 80 bushels. Early potatoes are rotting badly, and late ones affected with blight. Very little clover seed. Corn is falling short of expectations. Seeding is backward because of the wet weather. Fruit of all kinds very plentiful. The average amount of live stock on hand. Wheat 98c; butter 25c; eggs 24c.



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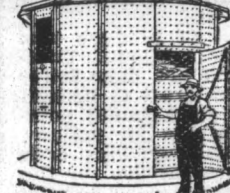
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Markets.

WEATHER FORECAST.

For week beginning Wednesday, September 15, for region of the great lakes. Local thunder showers at the beginning of the week will be followed by fair and cooler weather beginning Thursday.

GRAINS AND SEEDS.

September 14, 1915.

Wheat.—Prices have reached a higher level the past week. The weather has had a direct bearing upon price making, the recent rains having done additional damage to the grain in the fields of the northwest and delayed deliveries from farms in sections where threshing has been under way for some time. Besides this, farmers have been conservative in their marketing, believing that the outlook for future prices warrants holding onto the grain until later. This restricted delivery is indicated by the primary receipts which show a falling off of a third of a million bushels as compared with a year ago. In Minneapolis and Winnipeg receipts on Monday were 3,835 cars as compared with 5,231 cars for the corresponding day last year. Besides this the American visible supply was more than 23,000,000 bushels greater a year ago than now. Much will depend, however, upon the needs of foreign countries, thus far the belligerent nations have not come into the market here for large blocks of the cereal. Occasionally, however, purchases are being made. It is likely, too, that on account of the depreciation in exchange that the colonies will be given first preference on the markets. One year ago No. 3 red wheat was quoted at \$1.06 per bushel. Quotations are as follows:

	No. 2	No. 1	
	Red.	White.	Dec.
Wednesday	1.07½	1.04½	1.02
Thursday	1.08	1.05	1.02½
Friday	1.11	1.08	1.05½
Saturday	1.12½	1.09½	1.07
Monday	1.12	1.09	1.06½
Tuesday	1.12	1.09	1.07

Corn.—Values remain practically steady. Over a wide area the growing crop seems to be making wonderful progress because of the ideal weather. The chances for the grain maturing satisfactorily are greater every day. In Liverpool the market is quiet. One year ago No. 3 corn was quoted at 78½¢ per bushel. Quotations are as follows:

	No. 3	No. 3	
	Mixed.	Yellow.	
Wednesday	79	81½	
Thursday	79	81½	
Friday	79	81½	
Saturday	79	81½	
Monday	79	81½	
Tuesday	78	81	

Oats.—During the week prices advanced a fraction. There is a fair supply on the local market and the American visible supply has increased 2,350,000 bushels. One year ago standard oats were quoted at 48½¢ per bushel. Quotations are as follows:

	Standard.	White.	No. 3
Wednesday	37	35½	35½
Thursday	37	35½	35½
Friday	37	35½	35½
Saturday	37½	36	36
Monday	37½	36	36
Tuesday	38	36½	36½

Rye.—There is practically no dealing in this cereal on the local market with cash No. 2 quoted at 91½¢ and September at 90¢ per bushel. Chicago quoted No. 2 rye at 93¢.

Beans.—Reports continue to come in of an impaired crop. No dealing here. Detroit nominal quotations are: Cash \$2.95; per bu; October \$2.80; Chicago trade is quiet and steady. Pea beans, hand-picked, choice, are firm at \$3@3.25; common \$2.62@2.80; red kidneys \$3.50@3.60. At Greenville the elevators quote \$2.60.

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

FLOUR AND FEEDS.

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

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$34.50; corn and oat chop \$31.50 per ton.

New Hay.—No. 1 timothy \$18@19; standard timothy \$17@18; light mixed \$17@18; No. 2 timothy \$16@17; No. 1 mixed \$14@15; No. 2 mixed \$12@14; No. 1 clover \$12@14.

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

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

DAIRY AND POULTRY PRODUCTS.

Butter.—Is easier and lower. Offerings more liberal. Extra creamery 24c; firsts 23c; dairy 21c; packing stock 18c per lb.

Elgin.—Liberal offerings and warm weather brought a reduction of 2c per pound from last week's prices. Quotation for the week is 24c.

Chicago.—Buying is slow and prices are lower. Extra creamery 24@24½c; extra firsts 23½c; firsts 22½@23c; seconds 21@21½c; packing stock 19@19½c per pound.

Poultry.—The market is easy for all kinds. Some accumulations on the market. Live.—Broilers No. 1, 15c; No. 2 14@14½c; heavy hens 14@14½c; others 11@11½c per pound; ducks 14@15c; geese 10c; turkeys 15c.

Chicago.—Market is steady at prices slightly lower than last week. Fowls, good weights 13½c; others 10@12c; spring chickens 15c; ducks 12½@13½c; geese 12c; guinea hens \$2.75@3 per dozen; turkeys, good weights, 14c; spring turkeys 20@22c.

Eggs.—Market is firm with offerings light. Canned firsts sell at 24c; current receipts 22c.

Chicago.—The feeling is firm at prices slightly higher than last week. Miscellaneous lots, cases included, 17½@22c; ordinary firsts 21@21½c; firsts 22@22½c.

Veal.—Quoted steady at 14@14½c for fancy, and 13@13½c for common.

FRUITS AND VEGETABLES.

Apples.—Supply good. Fancy \$2.25 @2.50 per bbl, and 75@80c per bu; common \$1@1.50 per bbl and 40@50c per bushel. At Chicago the market is easy with supply good. Duchess sell for \$1.25@1.50 per bbl; Wealthy \$2@2.25; Maiden Blush \$2@2.50.

Pears.—Market is fair for good stock, good Bartletts bringing \$4.50@4.75. At Chicago prices vary as to quality. Michigan Bartletts sell for \$3.50@4 per bbl; 25c@1.25 per bu.

Potatoes.—But few Michigan tubers coming. Jerseys are quoted at 63¢ 65c per bushel. At Chicago Michigan whites selling at 40¢ 50c per bushel in carlots. At Greenville 30c per bushel is being paid.

Peaches.—Market active and firmer. Demand is good. Island peaches are bringing \$1.25 for A's; 95c@1 for A's; 50c for B's. The market at Chicago has not recovered from slump of last week. Michigan fruit sells for 50@75c per bu; 5@10c per one-fifth bushel basket.

WOOL.

Boston.—The announcement that Great Britain will raise the embargo on wool under certain conditions has disturbed to some extent the market on this side. Prices, however, remain at practically the same level, but transactions have not been on so large a scale as before the announcement. A fairly good amount of fleeces were sold last week with fine unwashed delaines at 30c; three-eighths combing at 37½c; three-eighths clothing at 33½c. Dealers remain confident that prices will advance and sales in London show an upward trend of values.

DETROIT EASTERN MARKET.

The usual amount of produce was handled at the Eastern Market Tuesday morning. Prices are only fairly good. Tomatoes are down to around 60¢ 65c for average good grade; potatoes 70¢ 75c; onions 50c for yellow; apples 60c@1.25; cabbage 35c; crab apples \$2; cucumbers 65¢ 90c for the large, \$2.25 for medium; corn 60¢ 70c for five dozen ears; eggs 35c per doz; loose hay generally sells at \$15@22 per ton, with the range from \$15@24, good timothy being scarce.

GRAND RAPIDS.

Frequent rains and the hot weather have not been good for peaches, grapes and other fruit and the growers seem likely to sustain heavy losses. Peaches have wide range, depending on quality, but good fruit is still commanding fair prices. A few of the large fruit growers in this section have engaged a local commission house as sales agent for this season, the arrangement being similar to one that has been successfully carried on for years by growers of lettuce and other vegetables under glass. Creamery butter is off 1c and dairy No. 1 is quoted at 25¢ 26c; fresh eggs at 22¢ 22½c; potatoes are worth around 40¢ 45c; tomatoes 50c on the city market. Hay brings \$12@15. Mills are quoting No. 2 red wheat at \$1@1.03 per bushel.

LIVE STOCK MARKETS.

Buffalo.

September 13, 1915.

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

We had 160 cars of cattle here to-

day, including several loads held over from last week; Chicago came in with 19,000, lower, and Kansas City with 28,000, lower, and we were up against it good and proper. Buyers would not take hold readily, as the eastern markets are in bad shape and we were forced to take off all the way from 40 to 75c a hundred in order to make sales. The outlook is not very bright, still we look for a little improvement next week, as the takeoff was pretty liberal today.

Our receipts of hogs, 94 d. d., were about like a week ago, but the quality much poorer and a lower market on all grades, especially common and pig stuff. A good many hogs weighing around 150 to 250 lbs. sold at \$8.50 generally, with some common kinds at \$8@8.25. Extreme heavies quotable from \$7.75@8; choice yorkers \$8.50 generally. Pigs, as to weight and quality, from \$7@7.75, select hogs weighing around 130 lbs. at latter price. Trade on anything weighing less than 140 lbs. was in a demoralized condition and at the close of the market fully 1,000 pigs going over unsold. Would advise buyers to be very careful on common hogs of all weights. Roughs sold at \$6.25@6.50; stags \$5@6, with the bulk around \$5.50. All good hogs closed steady, but others extremely dull at opening prices.

With 40 d. d. of sheep and lambs here today, trading was active on both, with prices 15c lower than the close of last week on lambs, sheep firm; most of the choice lambs selling at \$9.10. Look for steady prices last of week with moderate receipts.

We quote: Lambs \$8.90@9.10; cull to fair \$7.50@8.80; yearlings \$7@7.25; bucks \$3@5; handy ewes \$5.50@5.75; heavy ewes \$5@5.25; wethers \$6.25@6.50; cull sheep \$3@4.75; veals, choice to extra \$11.25@11.50; fair to good \$8.50@11; heavy calves \$5@8.50.

Chicago.

September 13, 1915.

Cattle. Hogs. Sheep.
Receipts today..19,000 30,000 22,000
Same day 1914..23,580 25,218 23,603
Last week.....51,465 95,960 56,002
Same wk 1914..40,474 66,639 120,149

Shipments from here last week amounted to 9,580 cattle, 28,009 hogs and 2,912 sheep, comparing with 15,543 cattle, 15,919 hogs and 39,063 sheep a year ago. Hogs received last week averaged 238 lbs.

Cattle receipts today included about 6,000 western rangers. Trade was late in getting well started, and while the choicer offerings went at steady prices, it looked as though others would go a little lower. Hogs sold at steady to 5c better prices, the improvement being in mixed lots. Inferior to prime hogs brought \$6.30@8.25. Lambs declined sharply, the best selling around \$8.90.

Cattle prices were unevenly lower last week except on a few fancy heavy steers. The depreciation in values was a surprise to most traders as they had anticipated a good trade but the packers claim that the consumptive demand is unusually small and that there are selling many carcasses at a loss. It is predicted that receipts will diminish because of the sharp price cuts. Prime steers, averaging upward of 1,400 lbs., \$10.35; choice heavy animals \$10@10.25; best yearlings \$10.25 per cwt; bulk of good to choice lots \$8.40@10; common to fair offerings \$7@8; good cows \$5@5.50; canners \$3.50@3.75; cutters \$4@4.40; choice heifers \$6@7; thin do. \$5; fancy lots \$7.50@8.25. Butcher bulls sold chiefly at \$5.50@6 while common to good bolognas made \$4.50@5.25.

Hog trade shows slight improvement. Shippers were good competitors and took more of the good mixed and heavy grades than usual while they all wanted some prime light stock. A few days ago heavy packers were selling slowly at \$6.25@6.40 and now they are worth \$6.50@6.85 with a good medium weight mixed class around \$7. Prime lights reached \$8.30 the highest price of the year, with grassy kinds at \$7.50@7.85. Pigs generally sold at \$7.50@7.75. When the week ended heavy packers closed at \$6.30@6.65, heavy shipping kinds at \$6.75@7.75, light bacon at \$7.40@8.15, light shipping at \$8.15@8.25 and pigs at \$7@7.50.

Sheep and lambs were lower in mid-week despite light receipts but packers were unreasonably bearish until late days when scant supplies compelled them to support the market. Consequently prices, worked upward and at the close sheep were strong to 15c higher on the bulk and lambs were steady to 10c above a week ago. On Saturday lambs closed at \$7@9.10; best natives \$8.75; ewes \$3@5.50; bulk of good to choice ones at \$5.25 upward; yearlings \$6.25@7; bucks at \$4.50@4.75; wethers \$5.75@6.

Commercial horses were in slow demand the past week but there continued a good call for army classes. Prices of all grades were not materially changed. French and English buyers were liberal purchasers of sound

offerings and country shippers gave them a good quantity to pick from.

MICHIGAN CROP REPORT.

Wheat.—Average estimated yield in the state is 19.50, in the southern counties 20.24, in the central counties 20.03, in the northern counties 16.99 and in the upper peninsula 20.53 bushels per acre. The quality as compared with an average per cent is 86 in the state, central and northern counties, 85 in the southern counties and 96 in the upper peninsula. The total number of bushels of wheat reported marketed, by farmers, in August at 51 mills is 66,573 and at 56 elevators and to grain dealers 73,431 or a total of 140,004 bushels. Of this amount 112,491 bushels were marketed in the southern four tiers of counties, 26,147 in the central counties and 1,366 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in August is 500,000. Sixty mills, elevators and grain dealers report no wheat marketed in August.

Oats.—The estimated yield in the state is 37.99, in the southern counties 40.54, in the central counties 36.02, in the northern counties 33.03 and in the upper peninsula 40.62 bushels per acre. The quality as compared with an average per cent is 89 in the state, 86 in the southern counties, 91 in the central counties, 93 in the northern counties and 94 in the upper peninsula.

Rye.—The estimated average yield in the state is 14.80, in the southern counties 14.58, in the central counties 14.87, in the northern counties 14.09, and in the upper peninsula 21.55 bushels per acre.

Corn.—The condition of corn compared with an average per cent is 70 in the state and central counties, 75 in the southern counties, 56 in the northern counties and 62 in the upper peninsula. The condition one year ago was 89 in the state, 84 in the southern counties, 94 in the central counties, 95 in the northern counties and 91 in the upper peninsula.

Beans.—The probable yield of beans compared with an average per cent is 69 in the state, 76 in the southern counties, 67 in the central counties, 56 in the northern counties and 71 in the upper peninsula. One year ago the probable yield was 80 in the state, 79 in the southern and northern counties, 81 in the central counties and 95 in the upper peninsula.

Peas.—The estimated average yield in the state is 18.85, in the southern counties 15, in the central 17.50, in the northern 19.62 and in the upper peninsula 22.33 bushels per acre.

Potatoes.—The condition of potatoes compared with an average is 78 in the state and central counties, 83 in the southern counties, 67 in the northern counties and 80 in the upper peninsula. The condition one year ago was 89 in the state, 86 in the southern counties, 88 in the central counties, 94 in the northern counties and 100 in the upper peninsula.

Clover Seed.—The condition of clover seed compared with an average per cent is 75 in the state, 71 in the southern counties, 78 in the central counties, 86 in the northern counties and 91 in the upper peninsula. The condition one year ago was 81 in the state, 74 in the southern counties, 84 in the central counties, 94 in the northern counties and 104 in the upper peninsula.

Live Stock.—Live stock generally reported healthy and in good condition.

Crop correspondents, quite generally complain of the excessive moisture doing considerable damage to wheat, oats, rye, corn, beans, potatoes and hay. Twenty-six of the 27 northern counties in the lower peninsula report a heavy frost on August 27 which did serious damage to corn, beans, buckwheat, potatoes, cucumbers and late peas.

CARRIAGE BUILDERS' CONVENTION.

The Carriage Builders' National Association, which was organized in 1872, will hold its forty-third annual convention and exhibition at Cleveland, Ohio, September 21-22-23. To those who have believed that the "horseless age" was near at hand, it may be a little surprising to learn that more than 1,000 builders of buggies and surreys are expected to be in attendance. Builders of these vehicles, in most parts of the country, are finding a satisfactory market for their product. While thousands of vehicles of all descriptions are purchased annually by town users, yet the best customers of the manufacturers of horse-drawn vehicles are found among the prosperous farmers. There are 23,000,000 horses in this country, and, while we have horses, we will have horse vehicles—buggies, surreys and wagons.

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.

September 9, 1915.
Cattle.

Receipts 1923. There was a heavy supply of live stock on sale at the local yards again this week, especially in the cattle division where the quality was on the common order, there being a large number of light stuff and common cows in the receipts, which were draggy but the general market held about steady with the close last week and the market Thursday held steady. Nothing doing in stockers and feeders or milch cows yet. Best heavy steers \$8@8.25; best handy weight butcher steers \$7.25@7.50; mixed steers and heifers \$6.50@7; handy light butchers \$6@6.50; light butchers \$5.50@6; best cows \$5.50@6; butcher cows \$5@5.25; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$5.50@5.85; bologna bulls \$5@5.25.

Bishop, B. & H. sold Sullivan P. Co. 3 cows av 925 at \$5; to Parker, W. & Co. 4 canners av 850 at \$4; to Trumbull 2 bulls av 1105 at \$5.50, 1 do wgh 650 at \$5, 1 do wgh 730 at \$5, 2 do av 735 at \$5, 2 do av 1020 at \$5.50; to Breitenbeck 26 butchers av 870 at \$6.60, 1 canner wgh 920 at \$4, 1 cow wgh 990 at \$5.50; to Kamman B. Co. 28 butchers av 827 at \$6.75; to Mich. B. Co. 24 do av 814 at \$7, 3 do av 617 at \$6.50; to Mason B. Co. 1 bull wgh 950 at \$5.50, 12 butchers av 675 at \$6, 2 steers av 1040 a \$7.50; to Trumbull 2 bulls av 660 at \$5, 6 do av 850 at \$5.25, 2 do av 1450 at \$5.85; to Sullivan P. Co. 1 do wgh 1370 at \$5.75; to Hammond, S. & Co. 18 steers av 875 at \$7, 4 butchers av 1080 at \$6, 6 do av 1010 at \$7.50; to Newton B. Co. 4 do av 1150 at \$6; to Parker, W. & Co. 3 canners av 810 at \$4; to Sullivan P. Co. 1 do wgh 950 at \$4, 4 do av 1059 at \$5.50, 11 butchers av 807 at \$6.40, 14 steers av 1056 at \$7.65, 5 do av 864 at \$6.60; to Ratner 5 cows av 1116 at \$5.75; to Grant 29 butchers av 714 at \$5; to Thompson Bros. 6 steers av 1100 at \$7.85, 8 do av 800 at \$6.50, 3 cows av 980 at \$5.60; to Mason B. Co. 7 steers av 780 at \$6.50, 13 do av 970 at \$7.60; to Sullivan P. Co. 9 do av 935 at \$7.30, 11 cows av 1096 at \$5.50.

Roe Com. Co. sold Sullivan P. Co. 5 heifers av 530 at \$5.50, 6 cows av 930 at \$4.80; to Goodwin 1 do wgh 1200 at \$5.75; to Mason B. Co. 15 steers av 935 at \$6.65, 2 heifers av 765 at \$5.75, 1 cow wgh 800 at \$4.50; to Rattkowsky 4 butchers av 495 at \$5, 2 cows av 900 at \$5.25; to Kamman B. Co. 1 bull wgh 990 at \$5.50, 1 do wgh 920 at \$5.50, 1 do wgh 1280 at \$5.50, 3 do av 1017 at \$5.75; to Sullivan P. Co. 6 steers av 1140 at \$7.60, 20 do av 862 at \$6.25, 6 do av 666 at \$6.25, 7 do av 1007 at \$7.25, 7 do av 914 at \$7.25, 1 cow wgh 1250 at \$6; to Hammond, S. & Co. 16 steers av 1009 at \$7.40; to McNabb 16 do av 1286 at \$7.50; to Sullivan P. Co. 1 cow wgh 1250 at \$6; to Merritt 9 butchers av 714 at \$6.35, 8 do av 790 at \$6.35, 8 do av 840 at \$6.35; to Rattkowsky 2 cows av 935 at \$5.25, 1 do wgh 870 at \$4.75, 3 do av 940 at \$5.75.

Veal Calves.

Receipts 539. The veal calf trade was dull and 50c@1 lower than last week, due to there being no Jews on hand, this being their New Years. Heavy grades were very dull and sold low. Best brought \$11@11.50, with once in a while an extra fancy one at \$12; mediums \$8@10; common and heavy \$5@7.50; the close was dull.

Sandel, S. B. & G. sold Parker, W. & Co. 15 av 160 at \$11; to Lowenstein 6 av 140 at \$12; to Sullivan P. Co. 5 av 185 at \$11.50, 13 av 170 at \$11.50, 3 av 175 at \$12, 1 wgh 250 at \$10; to Rattkowsky 2 av 350 at \$5.50; to Sullivan P. Co. 17 av 150 at \$11, 1 wgh 260 at \$9, 3 av 200 at \$11.50; to Burnstine 4 av 140 at \$11.50; to Nagle P. Co. 2 av 190 at \$11.

Sheep and Lambs.

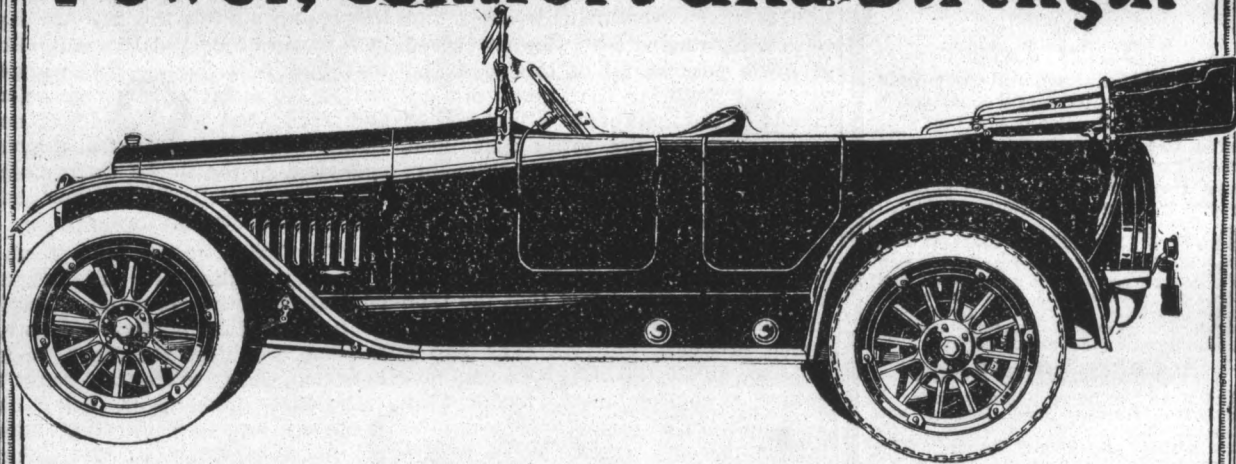
Receipts 6190. The sheep and lamb trade held about steady from start to finish. Swift & Co. were heavy buyers and were the means of keeping prices up. Without them they would have been much lower. Best lambs \$8.40@8.50; fair do. \$7.25@8; light to common do. \$6@7; fair to good sheep \$4.75@5; culls and common \$2.50@3.50.

Roe Com. Co. sold Barlage 26 lambs av 80 at \$8.25, 34 do av 75 at \$8.50, 6 sheep av 85 at \$4, 34 do av 120 at \$4.50; to Newton B. Co. 45 lambs av 80 at \$8.25, 44 do av 77 at \$8, 4 sheep av 90 at \$5.

Hogs.

Receipts 5830. There was nothing doing in hogs until late in the day; prospects are steady to 5c higher, or pigs \$7.95@8.05; heavy \$7.50@7.75; mixed \$7.75@8.

2925 Lbs. of Beauty, Silence, Power, Comfort and Strength



This is the unique way one owner of **THE SIX** of '16 describes the latest Mitchell masterpiece. This beautiful, long, luxurious car calls for a new method of description.

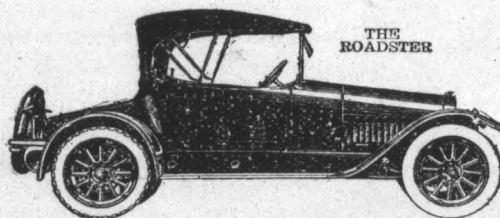
All predictions for its success have been surpassed, but by pushing the factory to its utmost limit—twenty-four hours a day, seven days a week—we are able to meet the demand, so that immediate deliveries are possible.

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Top, making all-year-round car, \$105 extra
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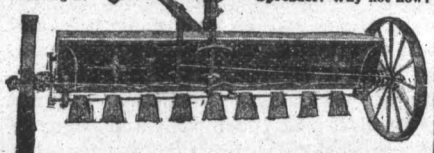
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Good Stock Farms, 450 acres, level, black land, good buildings, well watered, at half price. Also 200 acres, cheap buildings, woven wire fenced, creek, cheap. Owner, Lock Box, Hart, Mich.

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

CULL BEANS FOR FEED. Write if you can use a car or less.
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BELGAIN Hares fine pedigree, bucks 4 months \$2.50 each, utility bucks \$1.00 each, fine healthy stock. No Does for sale. Rose Comb White Leghorn Cockerels \$1.00 S. S. Ham-burg Cockerels \$1. Riverview Farm, R. 8, Vassar, Mich.

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Price list free. C. J. DIMICK, Rochester, Ohio.

FERRETS FOR SALE. Catalogue free.
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POULTRY.

Barred Rock Cockerels—for Sept. and Oct. fairs, 500 yearling hens and pullets for shows and breeders. W. C. Coffman, R. 6, Benton Harbor, Mich.

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

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

BIG BARGAIN SALE OF BARRED ROCKS. 200 yearling hens that have laid 140 eggs each since Jan. 1st, 1915 to Aug. 1st, 1915 an average of 20 eggs per hen per month. Prices 6 hens \$10, 12 hens \$18, 20 hens \$25, 50 hens for \$90. They are pure bred, large and closely related to our first winners at Chicago, Cincinnati and Indianapolis shows. Suitable males to go with them at \$2 to \$5 each. 1500 young birds growing. G. EARL HOOVER, R. 7, Matthews, Indiana.

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

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

ORPINGTONS—S. O. W. 12 wks. cockerel \$1.25. 1 pen 12 4-mo. pullets, 1 cockerel \$18. Yearling hens cheap. M. E. Thompson, Redford, Mich.

Pine Crest White Orpingtons—Splendid early hatched cockerels and pullets. Belgian hares and Collie puppies. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

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

Rose Comb Brown Leghorn Cockerels from Mad. Sq. winners 50 cts. up according to age. CLAUDIA BETTS, Hillsdale, Michigan.

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

SILVER Laced Golden and White Wyandotte Eggs for hatchling. Ten cents each or 30 for \$2.50. 1 pay parcel post charges. C. W. BROWNING, Portland, Michigan.

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

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

DOGS.

HOUNDS FOR HUNTING—Fox, Coon and Rabbits, all ages. 500 ferrets, send 2 cent stamp. W. E. LECKY, Holmesville, Ohio.

Utility in the Farm Flock

REEDING for practical utility should be the purpose of every farmer regardless of whether the flock is maintained for the production of market products or the sale of breeding stock. Breeding along lines that add commercially to the value of the flock in no sense involves the formation of new principles and theories, but the direct and constant application of those already understood and thoroughly approved. No one breed of fowls possess all of the good and essential qualities that meet the demands of the markets at a low cost of production, yet the fowls that most nearly meet the general requirements in both market and cost of production are found within the breeds that have been bred for years to conform to a recognized standard of excellence. It is a well recognized fact that the type of hen most needed today is one which produces uniform eggs and a superior quality of meat. The smaller breeds of poultry are not looked upon as producers of high-grade meat. The larger breeds grow to excessive weight and do not possess the essential egg producing characteristics. The intermediate, or general purpose breeds, more nearly meet the all around need, coming to laying maturity at an early age and producing a palatable grade of meat.

The Kind of Bird to Breed.

Essential to success in breeding for utility is the general appearance of the individual. This is indicated by stylish carriage and a symmetrical form. In mating the birds that are to be used as breeders one should discard all that have any serious defects. No bird with a crow head, long neck or weak knees should be permitted to enter into the breeding pens, no matter how good he or she may be in other respects. Such defects will be reproduced in the offspring to a large extent and will injure both the value and appearance of the young stock. The breeding pen is no place for any bird that has ever had any serious sickness or disease. To use such birds will be to invite and foster the very elements that will work havoc in the flock in direct proportion to the number of such birds that are used. The requisite of good health and strength of constitution cannot be too strongly emphasized when selecting birds for the breeding pen, as it controls the results to a very large extent.

Naturally it is desirable to select females for the breeding pen that are good layers so as to improve the laying qualities of the flock generally. It is impossible, however, to tell exactly which birds are the best layers unless a trap nest or some device is used and this is impractical on the average farm where the laying flock consists of above 200 hens. Besides, in the light of present day experiments the theory that heavy layers transmit that quality to their daughters in any marked degree has not been demonstrated. Hens laying from 150 to 200 eggs a year make better breeders than those laying considerably over 200 eggs a year. In fact, such authorities as Dr. Pearl, of Maine, and others, have demonstrated that males from heavy-laying ancestry exert a greater influence on the egg producing qualities of the flock than the female, and there is a physiological reason why this should be so. When a hen lays an egg she is exercising her organs of reproduction, and these organs cannot be overworked in any member of the animal kingdom without developing weakness in the offspring. Does it not seem unreasonable to select the very best layers from any flock and expect them to make safe breeders? Have they not produced eggs so far in excess of their sisters, whom they are like in so

many respects, that it would be safe to assume that they have passed the danger point in egg production for a breeder? The fact that these heavy producers do not produce heavy-laying flocks clearly indicates that they have been overworked. This, perhaps, explains the failure of the Maine station to develop a strain of hens capable of producing 200 eggs a year. At the Maine station the 200 egg layers in a strain of Barred Plymouth Rocks that had been laying an average of 120 to 130 eggs a year were selected and bred; but at the end of seven years it was found that the average egg yield of the flocks thus produced was not materially better than that of the original strain.

The Value of the Male Bird.

These results are no argument against selective breeding, but they go to show that poultry breeders, by making trap nest records a basis of selection, have made the same mistake that breeders of dairy cattle made in selecting breeding animals on the strength of the dam being admitted to the advanced registry on the basis of her own production record alone. It is a plain, common sense proposition that the mere fact that a cow is admitted to the registry tells one nothing of the future prospects of her heifer calves as producers. On the other hand, a bull is eligible to advanced registry if a certain number of his daughters have made performance records which entitle them to entry in the advanced registry. He is there because he has demonstrated his ability to perpetuate his high dairy qualities in his progeny. He has demonstrated his breeding-on qualities. The cow has shown nothing except that she is a good milker. She too often is worthless as a breeder. Do not the same laws of heredity apply with equal force to poultry breeding? Is not the cock with a large number of daughters in the 200 egg class of more value as a breeding-on force than the one that is kept simply on the strength of his dam's egg record? Only the scientist or the experimenter who has the necessary equipment and the time required for experimenting can hope to ferret out to a certainty family lines in egg production. The farmer who is interested in breeding along practical utility lines will find it possible to develop a flock of efficient egg producers by selecting females from appearance alone. Birds that show superior physical vigor as manifested by the symmetrical development of all parts of the body, bright glossy plumage, quick, alert actions, bright eyes, singing and cackling, will naturally be good layers, healthy and full of vitality. Such birds when mated with a vigorous male from a family of heavy-laying qualities will not only maintain the health and vigor of the flock but will invariably increase an already good egg yield.

The Best Way to Improve Egg-Producing Qualities.

The selection of superior males to improve egg producing qualities in the flock is the most practical way of obtaining results at a moderate cost. The purchase of settings of eggs in the spring, from breeders who are breeding for utility and egg production, is a cheap and common way of buying cockerels. Always buy of some breeder where the history of egg production is well known. By selecting some of the best females for the breeding pens and mating them with two males from good laying ancestry the males will exert a greater influence in upbuilding the flock than the entire flock of females.

Many poultry-keepers have attempted to produce an ideal flock by crossing the different breeds. No student of breeding problems need be enlightened upon the result of such practice.

Breeding for uniformity of product should be the purpose of every poultry keeper. Men who keep mixed flocks cannot sell eggs for hatching, cockerels for breeding, day-old chicks or mature breeding stock. The problem of marketing is greatly simplified when one keeps a flock of standard-bred poultry. Any business with a large outlook can be made more profitable than one with few possibilities. These facts are enough to prove that pure-bred poultry, bred for practical utility, can be made far more profitable than mongrels.

Improving the Fertility of Eggs.

To get a better percentage of fertility and eggs that will hatch well it is best to keep the male birds away from the females during the winter, or at least for a few weeks before the breeding pens are made up. This will give the male birds more vitality and they will be more attentive to the hens when they run together. The result is a greater number of strongly fertilized eggs. If possible, it is best to have pens that accommodate about 20 birds; and use two males, allowing one to run with the flock one day and the other the next. This avoids continual fighting which seriously interferes with the proper fertilization of the eggs. More fertile eggs will result in this way than when the two male birds have the run of the same pen at the same time.

If the breeding stock is thus carefully selected the battle is half won; the other half is won by keeping the birds in the pink of condition. The essentials of good health are clean, airy and sunny houses; good food, which includes a regular supply of green food; and healthful exercise. Eggs that are produced under these favorable conditions should, if properly handled, hatch vigorous and healthy chicks.

Good Feeding an Essential.

The next essential is good food, which means a variety of sound, wholesome grain. No one kind is good food for fowls, they need a variety of food to supply the various needs of the body. A good variety of grain to feed in the litter twice a day is made up by mixing a bushel of cracked corn and a half bushel each of wheat and heavy oats, to which should be added five pounds each of buckwheat and heavy sunflower seed. In addition to this dry grain one or two hoppers containing a good dry mash mixture should be where the birds will have access to it at all times. A regular supply of green food should be fed daily, but care must be exercised not to feed so much as to produce scours.

There is nothing mysterious or spectacular about breeding for utility. One is not likely to astonish the world with the story of his results. It is rather of a workaday proposition, not a game of chance, but a regular business. But it is possible for many farmers by such methods of breeding, proper housing and methods of feeding to make net profits of from four to six hundred dollars a year from flocks of from two hundred to four hundred hens, and there are a few men who are doing it.

New York. W. MILTON KELLY.

CULLING PULLETS.

There seems to be a general rule among the farmers of the country to dispose of no pullets. The pullet that does not give promise of laying before cold weather will rarely lay until spring, and it certainly is an economical practice to dispose of all runty, under-sized pullets, rather than carry them through the cold weather without profit.

If one would build up a profitable flock it is essential that the pullets be culled as closely as the cockerels. The pullets that grow rapidly and begin to lay early, should be marked and held as future breeders.

Indiana. T. Z. RICHEY.

Grange.

THE GRANGE AND CO-OPERATION.

(Continued from last week.)

One of the most valuable as well as one of the most difficult lessons to teach, is that of co-operation. No Grange is making the most of its opportunities that does not teach its patrons the value and importance of a well devised system of co-operation intelligently applied. Co-operation is, briefly stated, a means to secure wealth and better social standing, which, under the existing relationship of capital and labor, is impossible. "Competition is the life of business," is an old and trite saying. Today, this statement is universally recognized as false, and has been changed to "Co-operation is the life of business." Organization and co-operation are so closely related to and dependent upon education that, in practice, a campaign of education must produce successful results in either organization or co-operation. We must first teach the farmer the benefit and importance of organization. When this is done, organization becomes a potent factor in extending and broadening the educational work until finally effective co-operative action is the national sequence.

The three most important factors then, are education, organization and co-operation. Economically considered the three words may be defined as follows:

Education is that continuous process of enlightenment that enables mankind to know, do and enjoy the things not before comprehended. Or, it is a reconstruction of our experiences.

Organization is the assembling of individuals into a working force where the whole may operate as one in the accomplishment of a given purpose.

Co-operation is the working together as a unit, of many individuals under a well defined plan for a common purpose.

Many things can be done quicker, easier, better and more economically collectively, through organized effort, than they can be done singly. In fact, it is a safe proposition to state that all civic, social, economic, commercial and educational progress is directly traceable to organization based upon education, in the sense of working together for the common good and in the reconstruction of an experience.

The weak point in agricultural co-operation is the self-same spirit of selfishness, enhanced in many places by the independence which large natural opportunities have in the past bred in men accustomed to consult the wish of anyone but themselves. The isolation of the farmer plays an important part. As a rule he is not a good co-operator in the home. He does not consult with his family about the affairs common to their interests, but acts upon his own judgment. If he is going to save himself and family from failure through the disruption of the home, the farmer, must first of all learn to co-operate with those of his own household. His first and most necessary step toward better living and toward the retention of his financial and social independence, must be to socialize his own business, and to make his own farm a factory where the best possible standard of efficiency shall be maintained. Then, and only then, will he be ready to co-operate effectively with his neighbors.

Too many farmers are lacking in confidence, both as to their own ability and that of their fellows. If any attempt is made to better his condition, as that of his neighbor, he at once becomes suspicious and refuses

Farmers' Clubs

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

THE ANNUAL MEETING.

A meeting of the executive committee of the State Association of Farmers' Clubs was held in Lansing, Thursday, August 26, for the purpose of outlining the program for the annual meeting or the organization which will be held on December 7-8. A good strong program was outlined and same will be published in this department as soon as details have been worked out.

The executive committee desire to impress upon every local club in the state the importance of sending delegates to the annual meeting this year. It is not too early to discuss this matter in the local Clubs and provide not only for the election of delegates to this important meeting, but to discuss as well any matters of public or Club interest which it may be desired to have the delegates of the local Clubs present to the annual meeting next December. This course will not only assure a more adequate representation of the Club, but will as well save time at the meeting of the Club and make it possible to crowd more of interest into the programs during the two days' session of the State Association.

CLUB DISCUSSIONS.

Noxious Weeds.—Mr. and Mrs. Tilden Tait entertained the Wells-Dayton Farmers' Club at its September meeting, Wednesday, September 1, and about 40 members were present. Mrs. Della Hunt read "Burdick's Music Box," in a way to win applause from the crowd, and Mrs. A. L. Adams gave a recitation, "Whistling in Heaven," in her usual happy style. George Rumble gave a valuable paper on the subject of growing, selecting and caring for seed corn and he and S. G. Ross gave talks on noxious weeds and the means of exterminating them. They find that the wild carrot and wild mustard the worst of all they have to contend with and the hardest to exterminate. Miss Nora Wells served an excellent supper and as Mr. and Mrs. Tait are "newly-weds" the members, through S. G. Ross, presented them with a rocking chair as an evidence in the interest and good will they have for them. Mr. and Mrs. Frank Raymon will entertain the Club at the October meeting Wednesday, October 6, and it will be an all-day meeting.

Business Man and Farmer.—The East Otisco Farmers' Club met at the beautiful home of Mr. and Mrs. Wm. Leach, Thursday afternoon, September 2. About 30 people were in attendance. Among them were Mr. and Mrs. E. C. Lloyd and Mr. and Mrs. Gonsolus of Belding. Mr. Gonsolus gave a very interesting talk on the "Relation of the Farmer and the Business Man," after which Mr. Lloyd responded with several items of interest. A delicious picnic supper was served, and Mr. and Mrs. Lloyd received the thanks of the company for the fine ice cream they brought, which was enjoyed by all. The next meeting will be an all-day meeting, and will be held at the pleasant home of E. C. Lloyd in Belding, on Thursday, October 7.—Mrs. Mattie B. Anderson, Cor. Sec.

to lend any assistance. He is distrustful, as a rule, of the other fellow's integrity of purpose. American farmers do not, as a rule, make the best co-operators; they are slow to adopt new methods and still slower in attempting any movement that requires organization or the use of any money as a working capital. Many well planned and essentially business propositions have been wrecked because of indifference and lack of support on the part of the farmers. It will take time and education to get them to understand that to stand together is the only possible way for them to maintain their social independence.

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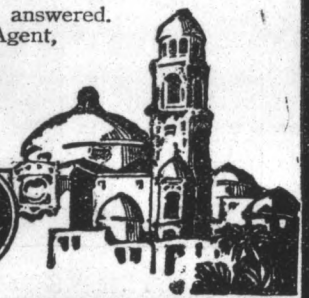
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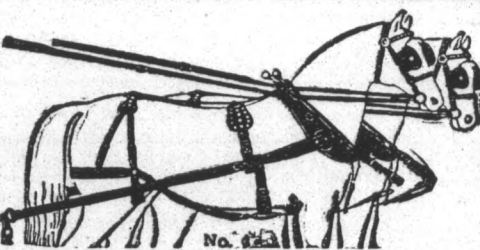
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CONDUCTED BY W. C. FAIR, V. S.

Sprained Hock—Scirrhus Cord.—For the past two years my seven-year-old horse has occasionally showed some lameness, and I am quite sure the trouble is in hock joint. After a rest he starts off sound, but soon shows some lameness. I also have another colt which I castrated that has a large cord which appears to be connected to scrotum and the bunch is about as hard as a stone. C. H. F., Marion, Mich.—Clip hair off hock and apply one part powdered cantharides and four parts lard three times a month, and he will perhaps get well. The scrotal tumor should be cut out and the cord considerably shortened, then he will get all right. When you castrated him, you left the cord too long.

Weak Back.—Have a seven-year-old mare that occasionally finds it difficult to get up and I am somewhat inclined to believe that her back is weak. She always lays on her right side and after she gets on foot her right hind leg is stiff. J. J. S., Lakeview, Mich.—Give your mare 1 dr. of ground nux vomica, 1 dr. acetate of potash at a dose in feed night and morning. Rub her back with alcohol twice a day.

Sprained Hip.—We have a mule six years old that is lame in hind leg; I have examined foot and found it all right, no fever in any part of leg, but working her makes her very lame. When walking she shows very little lameness, but when trotted limps a good deal, and I might mention that working her has always made her worse. G. R., Jackson, Mich.—Give her a rest and apply equal parts turpentine and aqua ammonia to hip and stifle three or four times a week.

Bloody Milk.—We have a cow that is giving bloody milk, as there is usually a few little clots in strainer. E. M. G., Geneva, Ind.—Your cow bruises her udder and perhaps you can figure out the cause, then remove it and she will cease giving bloody milk, or perhaps more careful milking will correct this trouble. Giving her drugs will not produce satisfactory results. Cows sometimes give bloody milk when a change of feed is made from non-nutritious to nutritious and fed liberally.

Infectious Ophthalmia.—I have a cow and two calves that are troubled with sore eyes which I believe is catching. Our local Vet. has never seen any similar cases. R. H., Lum, Mich.—Dissolve 40 grs. of borate of soda, 40 grs. of boric acid in a ¼ pt. of clean boiled water to eyes twice a day; also blow a small quantity of calomel into eyes every day or two. Keep them in a dark, clean, well ventilated place and the rest of your cattle should be kept away from them.

Barren Cow.—Have a Jersey cow that has raised two calves; now after several services she fails to get with calf. I injected her with a soda solution, bred her several hours later, but she failed to get with calf. She has now been milked for 15 months. R. D., Lucas, Mich.—A certain percentage of cows are shy breeders and some cows prove barren. If your cows have been bred to only one bull, why don't you change.

Sprained Leg.—I have a sow with a swollen hind leg, near foot, and it must pain her for she holds leg up most of the time. E. N., Lake City, Mich.—Apply one part tincture of arnica, two parts witch hazel and seven parts alcohol to sore leg three times a day. Have you examined the foot to ascertain if there is anything in it?

Chorea.—One of my four-months-old pigs began to shake and jerk in muscles, gradually getting worse until about a week ago; since then he has not been able to stand, but lies on his side and shakes. What ails him and is there a remedy? F. H. K., Millington, Mich.—Your pig is incurable and might as well be destroyed for he will never recover.

Looseness of Bowels.—My 13-year-old horse had severe attack of indigestion and pneumonia early last March, since which time his bowels have been very loose and he does not thrive. I feed him corn and timothy hay. C. B., Otsego, Mich.—Mix together equal parts of ginger, gentian, charcoal and catechu and give him a tablespoonful at a dose in feed three times a day. Why don't you turn him out to grass, instead of feeding him corn and timothy.

Mare Disowns Her Colt.—I bought an eight-year-old mare that is heavy with foal; since I bought her I have learned that she has had three colts before, but has never owned any of them; she appears to be a gentle mare. M. S., Maple City, Mich.—I know of no remedy for this kind of a case, other than to fasten the mare until she and the colt become recon-

ciled to each other. Sometimes by placing another horse within view of mare has the effect of her assuming protection to colt, but as soon as she foals, place a twitch on her nose and force her to let colt suck and keep someone with her to give the colt attention and she may own it.

Injured Hock.—We have a yearling colt which, when two months old jumped from a six-foot gangway and injured hock, which has left a bunch on fore part of hock and the remedies we have applied fail to reduce it. D. H. G., Owosso, Mich.—Apply one part iodine and nine parts lard to bunch once a week.

Chronic Scours.—My eight-year-old mare has scoured all summer and fecal matter which passes from her has an offensive odor, but her appetite is good. She is losing flesh; our local Vet. filed her teeth. W. T., Ortonville, Mich.—Give your mare 1 dr. of dried sulphate of iron, ½ oz. of ground ginger and ½ oz. hyposulphite of soda at a dose three times a day. An animal of this kind should not be driven faster than a walk.

Distemper—Broken Wind.—My 12-year-old horse had distemper early last spring; since then he has breathed much like a horse that has heaves and when exerted much makes a wheezing noise. When he was sick our local Vet. took care of him. H. A. T., Nunica, Mich.—I am inclined to believe that most of the trouble may be in throat and before the wheezing is remedied a surgical operation will have to be performed on throat, which your Vet. can doubtless do. Rubbing throat with one part tincture iodine, two parts camphorated oil every day or two and using an independent bit and over-check to pull head up and nose out, will perhaps cause him to breathe without making a noise. If you believe he has the heaves, you can safely give him any of the commercial heave remedies that are regularly advertised in this paper.

Sore Feet.—I recently bought a horse that had been used on pavement, both fore feet are sore, heels low and coronet bulging over wall. He cannot be used unless shod. J. C. H., Hamden Highlands, Me.—Standing horse in wet clay for two or three hours a day and proper shoeing is all that can be done for him.

Indigestion—Heaves.—My 16-year-old horse has frequent attacks of indigestion and lately I have thought he showed symptoms of heaves. J. T., Breckenridge, Mich.—Feed your horse no clover, or musty, dusty, badly-cured fodder of any kind. Oats and grass is the best summer feed. Also give him ½ oz. of hyposulphite of soda and a tablespoonful of Fowlers solution at a dose in feed twice a day.

Cow Gives Bloody Milk.—We have a cow that came fresh one week ago that gives bloody milk from one fore quarter. M. O. M., Wayne, Mich.—Your cow bruised udder and if you will ascertain the cause and remove it she will soon get well.

Rheumatism.—I have a cow that recently became stiff, hardly able to move. This soreness all came on her since she has been turned to pasture. J. L., Monroe, Mich.—Give your cow a dessertspoonful of powdered nitrate of potash at a dose in feed once or twice a day for a few days, then give 2 drs. of salicylate of soda at a dose two or three times a day.

Ringworm.—I have a few yearlings that have sore spots around the eyes and ears and some on body which I am inclined to believe is ringworm. L. K., Park Lake, Mich.—Apply tincture of iodine cautiously about eyes and sore spots of body three times a week.

J. F., Coleman, Mich.—Your pigs died as the result of food infection, giving rise to indigestion which no doubt affected the nervous system, resulting in death. I do not believe the spots on skin or liver caused their death, but am inclined to agree with your Vet. that they died as the result of digestive disturbance. A change of food and water, also avoid feeding them house swill with soap in it.

Congestion.—During the spring and summer I have lost 150 chicks and during the past few days I have lost 30 which were less than 20 days old. These chicks have no diarrhea, but just give up and die. They act as if they might die from the effects of lice, but I have failed to find any on them. These chicks appear to be dull and dumpy. Are fed dry feed, meal, rolled oats, bran, good water and occasionally have a dish of milk. Also for meat I feed fish and cleanings from other meat; they also have some clover and lettuce. Mrs. J. D. C., Everett, Mich.—I am inclined to believe your chicks die either from exposure or from lack of a proper food supply, or perhaps you feed them before they are two days old, which, if so, is usually a mistake. I suggest that you thoroughly clean and disinfect your coop, avoid exposing your young chicks to cold rain storms or

too much wet. It will do no good to give them drugs, unless you know what is causing their death. There must be some mismanagement on the part of feeder and caretaker, or you would not lose so many.

Barren Cows.—I have a cow that comes in heat regularly, has been bred several times, but fails to get with calf. A. S., Lansing, Mich.—Dissolve 2 ozs. of bicarbonate soda in three pints of tepid water and wash out vagina when she comes in heat, but don't breed her for six hours after you have treated her. After she is mated stand her in a position with the fore feet six inches lower than hind ones, for 12 hours.

Infected udder.—Will you tell me what is the cause of my cows giving stringy milk and what can be done to correct this trouble. These cattle appear to be well and gave a good quality of milk up to a short time ago. The cows are running in pasture and are fed an occasional feed of clover hay. Do you consider this kind of milk fit to use? J. H., Allegan, Mich.—Give your cows ½ oz. doses of hyposulphite soda night and morning in their feed. Also change their pasture and milk them in a clean stable or yard; also, be painstaking in keeping milking utensils and hands of milker clean. Cows with infected udder should be milked last. Throw away milk taken from diseased quarters.

LIVE STOCK NEWS.

Farmers are getting comparatively low prices for their heavy hogs at the various markets but those who are fortunate to have light weights and pigs are getting profitable prices. The cause of the discrimination against heavy hogs is the poor demand for lard. The war in Europe practically eliminates Germany from buying American lard and it is an admitted fact that this country takes more of this product than any other foreign nation.

Pigs are numerous on most farms but owners are satisfied to hold them as they are in healthy condition. The marketing of 60 to 130-lb. pigs is exceedingly small for this season of the year even though prices are higher than any other month this year. Some of the lightest kinds have been commanding \$8.25 upward to \$8.50 at Chicago recently and even the strong-weight kinds are worth mainly \$7.75 @8.

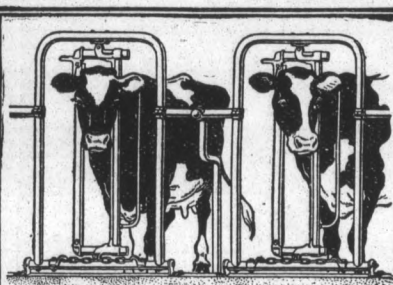
Calves continue to sell on a high level and at Chicago they are landing largely at \$11.50@12. The run of calves is not very liberal as many owners are keeping them back to make them into cattle as the opportunity to buy young feeding stock is small. The only way some will be able to continue in the cattle feeding business is to hold back their own calves and those of the beef breed are seldom marketed even though they would bring substantial profits as vealers.

The range sheep men are not marketing any yearling ewes as they want them for breeding purposes the coming season. Many are buying from others on the range who are not in a position to increase their present production and corn belt feeders are having an unusually hard time getting western breeding stock at the markets where it is generally numerous. The sheep and lamb business is getting down to a state where it almost means that the corn belt farmer will have to raise his own stock or abandon the idea of raising them.

Prime heavy cattle and yearlings are selling on a profitable basis and are \$1@1.75 higher than early in April but the cheaper kinds of steers of all weights find a narrow outlet. There is a wide spread at the market between prices for common grassy natives and prime dry-fed animals. The rangers have a bearish influence on the natives below top grade and packers seem to be better buyers of the former kinds.

The number of range cattle to be marketed this season is comparatively light and the owners of most of those still back intend to feed them up to a good standard so that the average quality of western stock will be better than most previous seasons. Hay is plentiful and the pasture was good because of numerous rains at the time when they were needed. Range men have confidence in the market and are proving it by holding back the thin stock which usually is quite abundant by this time of the season.

Minnesota and South Dakota say that pigs are in larger supply on farms than ever before and mostly healthy. Hogs are selling at very much lower prices than in recent years, and so are provisions, recent sales of pork on the Chicago Board of Trade being made fully \$9 per barrel lower than a year ago. Recent prices for hogs covered the widest range ever known, the spread being fully \$2, whereas a year ago it was only \$1. Hog products have been selling close to a \$5.75 basis for hogs.



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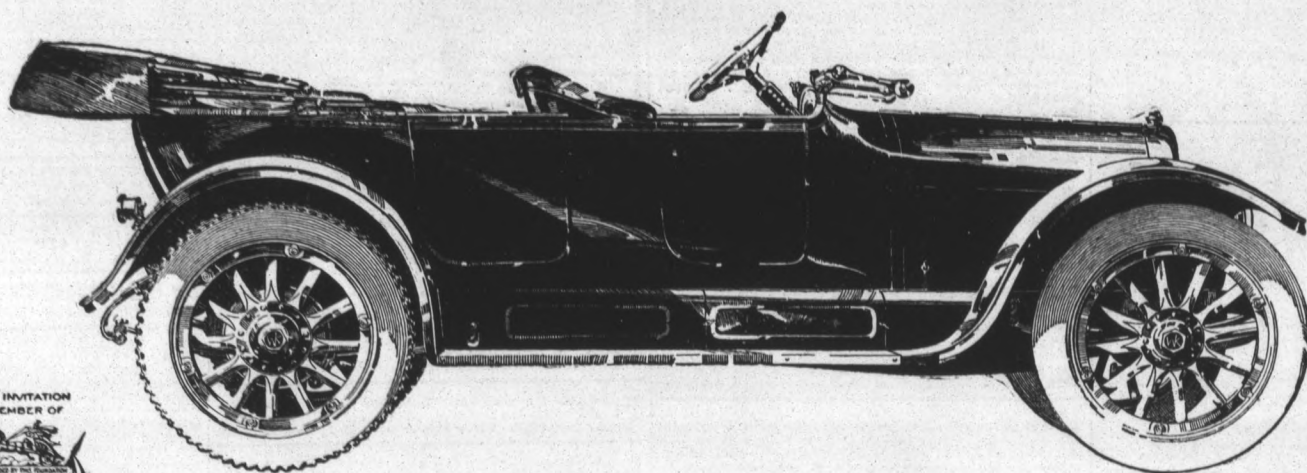
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