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Practical Houses for Farm Poultry

By E. I. FARRINGTON



A Poor Type of Hen House.

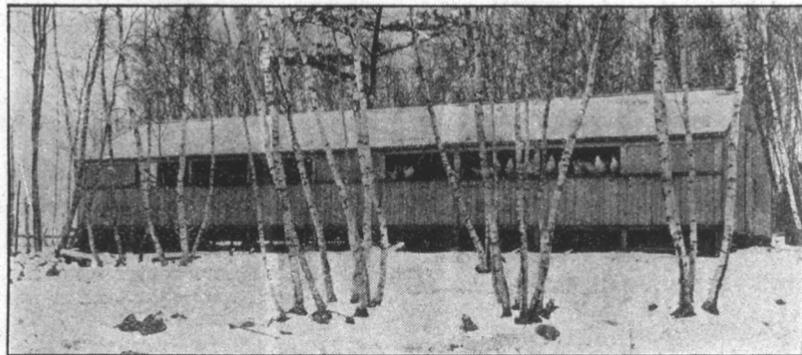
There is no end to theories about poultry house construction, but the practical farmer seeks simply a practical house that will give his birds the protection they need and not cost very much. As a matter of fact, the least pretentious houses are often found on the most successful farms. It is well enough for the wealthy man to build a costly poultry house; he can afford the expense and some carpenter gets a good job. The man who is raising poultry for profit, though, will find difficulty in getting a fair interest on his investment if he spends much more on his houses than \$1.50 for each bird that is to occupy them. Many poultrymen figure their housing expense at one dollar a head, although they make an extra allowance if cement floors and foundations are to be used.

Poultry houses have been much simplified in the past few years. It used to be supposed by all classes of poultrymen that hens would not lay in winter unless they are kept in warm houses. As a result they built houses with double walls, put on double windows and doors and even installed stoves. The writer was recently looking over an old poultry book in which several more or less elaborate devices for keeping out the cold were described and pictured. In the old days, though, the hens were forever getting sick and some poultry keepers had large pits in which dead birds were thrown. Moreover, winter eggs were few and far between.

Then came the discovery that fresh air and not warm air was what hens needed, that damp houses were much worse than cold houses and that if a house was kept tightly closed it was almost sure to become damp. It was a

common thing in a tight house to find the walls covered with moisture in the morning and some experts had tried to remedy this trouble by filling a small loft over the roosting room with hay to absorb the moisture. As soon, however, as the glass windows were removed and musline substituted, all trouble with dampness disappeared. It was hard even then for poultry keepers to realize that the hens did not need to be kept warm, and the state experiment station in Maine, built a so-called fresh air house which became famous. This house had a long roosting closet at the rear, the hens being entirely shut in at night by cloth screens which were dropped in front of them.

Then Joseph Tolman, a Massachusetts man, took the bull by the horns, as it were, and constructed a house the front of which was entirely open.



An Open-front House which Houses 300 Leghorns.

This was a radical departure from anything in the line of poultry houses which had ever been known before, but it was successful and the Tollman type of hen house is now in use all over the country, in the most northern states as well as in California and the south.

While the Tollman house is entirely open at the front, the fowls are not exposed to the elements to the extent that might be supposed. The house is 24 feet deep and has a double pitched roof, with the front slope much longer than that to the rear. It is open at the front only, and the air inside is comparatively still, even though a gale may be blowing outside. The confined air seems to act as a cushion and does not flow away from the perches when it becomes warm, as in a shed roof house. The original Tollman house

was 14 feet wide, but of late years Mr. Tollman has been building and recommending a much wider house divided into pens. A house 24x14 will accommodate 100 hens and need not cost more than \$125, if built with an earth floor. A wider house will cost less in proportion. Any house that is square will cost less than one of the same design which is long and narrow. A wide Tollman house should have windows in the west end, but these windows must be kept closed in winter. A single-boarded house of this type, covered with roofing paper is economical to construct and a very satisfactory building for a business farmer to put up or for a business hen to occupy.

In some ways the semi-monitor style of house resembles the one just described, but the roof construction is different, for the front slope is made several feet lower than the rear half,



A Practical Colony House on Runners.

and the roosting quarters at the rear of the house kept cool. This is a good feature, but the windows are valuable also because they allow the rear of the house to be flooded with sunlight, something which is not possible in the Tollman house.

In some houses of this kind the wall in which the roof windows are set is carried down inside the house to within two feet of the floor. This gives the fowls a perfectly protected roosting place, although with no lack of fresh air. When this plan is followed, it is best to leave the front entirely open, giving the birds an ideal scratch pen all through the winter. It would be hard to improve upon the semi-monitor type when a permanent house is desired. At least, that is the opinion of the writer, who might easily write a book on "Poultry Houses I Have Met."

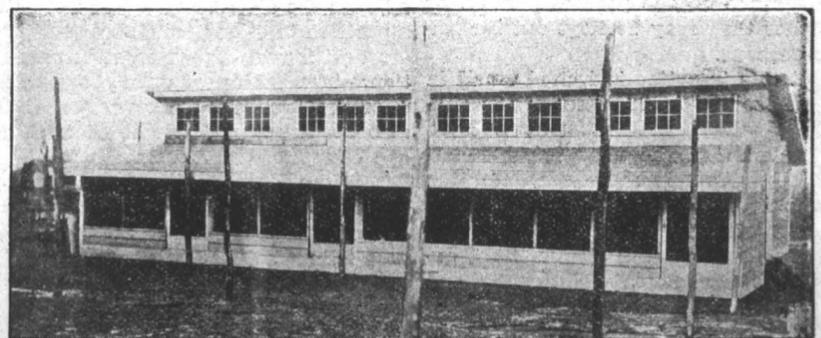
Perhaps it might be well to point out here that many shed roof houses which are too high in front to look well or which are lacking in space might easily be transformed into semi-monitor houses with but little labor and at comparatively slight expense. All that needs to be built is a front extension, with a row of windows at the top. In this manner the capacity of a house may be nearly doubled at considerable less cost than would be required to construct a new house.

After all, though, the shed roof type of house is the one which will be most often selected by the farmer, as its construction is simple and it is cheap to build. The shed roof house is likely to be rather hot in summer but that trouble can be remedied to a large extent by cutting openings in the rear wall just under the eaves, having shut-

(Continued on page 448).



The Tollman Fresh Air House is Good for Housing Farm Flocks.



The Semi-Monitor House is one of the Most Practical Types.

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DETROIT, NOV. 4, 1916

ADVANCE IN SUBSCRIPTION RATES.

Owing to the prices of paper we use having nearly doubled and all other of our expenses advanced from 20 to 40 per cent, we are forced to announce a reasonable advance in the subscription terms of the Michigan Farmer as follows: On and after February 1 next our prices on all subscriptions will be \$2.25 for five years, \$1.75 for three years and 75 cents for one year. Our readers are well aware of the increased cost of conducting our business under present conditions and we are fully convinced that they will justify us in these necessary advances. We are making this announcement thus early to give all our readers and new subscribers an opportunity to subscribe for any number of years they choose at the old rates, which are \$1.50 for five years; \$1.00 for three years, and 50 cents for one year, if sent in before February 1 next. Our readers all well know that the Michigan Farmer has always led all other agricultural publications in low subscription prices and in high value of the paper.

CURRENT COMMENT.

Attention has recently been called to the need of an aroused public sentiment for better rural school attendance and a more rigid and effective enforcement of the compulsory attendance law to make sure of this better attendance, by an official of the National Bureau of Education.

Our rural schools have become notoriously small in size and their average efficiency perhaps correspondingly decreased during the past generation, yet the school tax is in most localities the heaviest item of tax paid by farm owners. It is certainly unfair to property owners who are taxed that other people's children may have the advantages of education in our free school system to permit the foregoing of those advantages in even individual cases, whether the children are permitted to be absent from school through carelessness or indifference on the part of parents or whether they may be kept out for selfish reasons.

But this injustice is indeed small in comparison to the injustice to the children themselves. Statisticians have estimated that the time spent in attending school is more remunerative to the average child than any similar amount of time spent in subsequent employment, it being claimed that every day's attendance when capitalized into future achievement is worth \$9 to every pupil of the primary school. It has been estimated that in the United States something like 5,000,000 boys

and girls of school age are daily absent from school. Think of the enormous loss to the next generation from this cause if the above estimate is anywhere nearly correct. In very many cases where farm surveys have been undertaken, it has been found that the farmers who have had the advantage of a high school education have made notably better labor incomes than those who had not had such an advantage. This is unquestionable proof that school days are exceedingly valuable to rural school children, far more valuable than their services in any other capacity were they kept from school for the purpose of aiding their parents. Still greater is the loss where the children are humored to occasional mid-week holidays during the school term. Surely public sentiment will be easily aroused to favor the more rigid enforcement of compulsory attendance wherever the remedy is needed as a matter of justice to children of school age.

The elective franchise is everywhere considered the most sacred right of a free and enlightened people. Unfortunately many men who would not patiently suffer even a suggested infringement of the right to vote somehow fail to appreciate the morally binding obligation which is the natural accompaniment of that right.

The elective franchise is a duty as well as a right. Every voter owes it to the community in which he lives as well as to his family and himself to exercise the right to vote at every election be it local or general. Particularly is it the duty of every good citizen to go to the polls and cast his vote upon important issues which have a direct bearing upon the welfare of the commonwealth and community, as is the case at the coming November election.

The farmer who, barring physical inability, does not take the time to go to the polls and vote because he is busy at some important task in the closing up of the fall campaign is falling short of his binding duty as a citizen and his moral duty as a man. We believe there are few such in Michigan.

The casual reader might find it difficult to classify as between business and philanthropy the policy recently adopted by one of the largest of Detroit's milk distributors. In the Detroit Free Press of October 28 appeared the following item:

As a result of the milk shortage and the high cost of feed, the Detroit Creamery Company will lend money to farmers of Shiawassee county with which to buy cows. Feed also will be sold by the company to farmers at reduced rates.

"The plan," said Jerome H. Remick, president of the company, "is not new, though it is being tried out by our company as an experiment at Owosso. We are trying to aid the farmers as well as increase the production of milk."

There is no prospect of a reduction in the price of milk, according to Mr. Remick.

To Michigan milk producers this will be illuminating as a practical admission on the part of this large distributor that the profits accruing from the distribution of milk to the consumer have been greater than those resulting from its production at price schedules which have heretofore been maintained, else the distributor would not be in a position to offer financial aid to farmers desiring to engage in milk production. The taking of such steps in an effort to increase milk production is also an acknowledgement of a shortage of market milk from the territory heretofore developed as a source of supply.

It must be conceded as good business for milk distributors to undertake the stimulation of market milk production under these conditions. Had such an effort been made by the payment of compensatory prices for market milk during recent years, there is little like-

hood that there would be any evidences of milk shortage at the present time. The rapid increase in the cost of milk production, together with a closer study of costs in this department of specialized farming, have brought the milk producers of Michigan face to face with the problem of getting a better price for their milk or curtailing their output of this commodity. Both results have in a measure been accomplished. Some farmers have become dissatisfied with the business and sold their cows. By acting co-operatively in the sale of their product the farmers of many dairy communities have secured better prices, and by standing together where such united action is necessary, the producers of market milk will in the future assure to themselves a price for market milk which will pay the cost of production and leave a living profit. Mr. Remick is undoubtedly right in the statement that there is no prospect of a reduction of price of market milk, at least unless there should be an unexpected reduction in the cost of its production.

If the milk distributors are farsighted business men, they should be grateful to the milk producers of the state for organized action for the sale of their product and organized insistence on a compensatory price, since such action on the part of milk producers will do more to stimulate milk production than could the united philanthropic or business efforts of the milk distributors along any other line.

With this issue of the Michigan Farmer begins a new serial story entitled, "Mister 44," by E. J. Rath. A large number of excellent stories were carefully reviewed before making our final choice, so that in the selection there is the fullest confidence that we are presenting to our readers the very best story that can be procured. Sadie, with whom you will be introduced in the first installment, is a plain but wholesome country girl that shows unusual resourcefulness under very trying and unprecedented circumstances and the hero a successful engineer, who appears later, rises above the strata of his class and the bonds of the society in which he was born and follows, true as steel, the longings of his heart. We bespeak for those of our readers who, from week to week follow the chapters of this story a season of genuine entertainment.

ATTENTION, SUBSCRIBERS!

On page 449 will be found a lot of clubbing offers at prices which will save our subscribers considerable money. Orders for these combinations should be received by us as early as possible. All prices will advance on February 1.

New subscribers to the Michigan Farmer will receive the rest of this year FREE—in other words, all subscriptions will be dated from January 1 and the paper will begin the week the order is received.

Renewals whose orders are received before their present term expires will not receive two copies, their date will be extended from the date now shown on their name tab—no time will be lost.

The Customary Christmas Cards will not be offered this December. The saving the subscriber will make through being able to save the advance in subscription price will more than make up for them and will be sufficient inducement to subscribe early.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Fighting on the Roumanian frontiers continues unabated, with the central powers following up their successes on the south in the province of Dobrudja and the Roumanians checking and throwing back the Austro-German forces in Transylvania. In Macedonia on the left bank of the Struma river the British soldiers re-

pulsed a Bulgarian counter-attack. No fighting of importance is reported in Galicia, in Russia to the north, nor on the Italian front. At Verdun the French have not only been able to hold the big gain made last week, but they have also taken the offensive against Fort Vaux, the only important position in front of Verdun remaining in the hands of the Germans since last week's remarkable victory. On the Somme front notwithstanding great artillery activity, but few infantry attacks have been made and changes in the lines are unimportant. A daring naval raid was carried out by the Germans last week when several of their sub-sea boats and other craft entered the English Channel and worsted the British ships in an engagement. The extent of the damage done has not been ascertained.

Capt. Boelcke, the famous German aviator who last Friday shot down his fortieth aeroplane, was killed later when his machine collided with another aircraft.

The French steamship Chicago enroute between Bordeaux, France, and New York City, caught fire in mid-ocean last week and was obliged to race for the Azores where she finally landed the 265 passengers on board in safety.

The fall of an 80-foot smokestack at Chatham, Ont., resulted in the death of three workmen.

National.

The burning of a bridge, supposedly by Mexicans, 300 miles east of El Paso on the Rio Grande river has resulted in the strengthening of the border guards at all points. Chihuahua is still held by Carranza's soldiers, although Gen. Villa with approximately 4,000 bandits is reported to be manoeuvring to attack that position.

Virginia entered the ranks of prohibition states on Tuesday at midnight, increasing the total number of states in the Union that prohibits the manufacture and sale of intoxicating liquors to eighteen.

The leader of the bandits who stole over \$30,000 from the pay car of the Burroughs Adding Machine Company, of Detroit, on August 4, was recently captured in Texas and returned to this city, where he announces a willingness to plead guilty to the crime.

Following the wholesale primary vote frauds and the large number of improper registrations in various precincts in the city of Detroit, extra effort is being made by those interested in a clean election, to safeguard against fraudulent voting on November 7. Representatives of the citizens and the federal government will be on hand during voting and the counting of the ballots to challenge irregularities.

A shortage in the supply of coal at distributing points is becoming more or less acute in different places and as a result prices have generally advanced. In some places as much as 50c a day has been added to the quotations. The shortage of cars for transporting coal is largely responsible for the situation.

Fire destroyed the electrical departments of a car company at Butler, Pa., Sunday, crippling the entire works and throwing 3,000 persons out of employment. The property loss is estimated at \$500,000.

At the fifth annual convention of the American College of Surgeons in session at Philadelphia, 228 surgeons from all parts of the United States, China, India, Philippines, and the Panama Canal were admitted to fellowship. At the session it was stated that 96 per cent of the cases of cancer cures could be effected if treatment is started in time, whereas after the disease has been fully developed only 25 per cent of the cases are cured.

Paper manufacturers are hesitating about making long term contracts for news print paper for 1917. The shortage in the wood pulp supply and chemicals used in the manufacture of this product is such as to make the producers of this class of paper uncertain as to what prices they will be able to manufacture for. An official of one of the largest paper companies stated a few days ago that the price would at least jump from one cent a pound to three and a quarter cents a pound, delivered. This increase is equivalent to \$45 a ton over 1916 prices.

Full consideration of the question of constructing a tunnel under the English Channel to connect England and France has been promised by Premier Asquith in receiving a deputation in favor of the project. The matter is to be taken up by either the war committee or the committee on imperial defense.

The English government is at the present time considering the whole question of a minimum wage for all workers. It is also probable that because of the high prices of food, legislation will become necessary to deal with the sale of milk and the establishment for municipal shops for the supply of bacon and other foodstuffs.

Production Costs on the Average Farm

By W. MILTON KELLY

It is not the gross income but the net profits that measure the success of any business. The failure to keep accounts holds many farmers in the dark about their financial affairs because they are unable to tell what part of their business is profitable and what costs them more than it returns. It is admittedly difficult to proportion profits and losses onto those factors of the farm which are responsible for them, yet this is gradually being done by those who realize the benefit to be derived from an accurate knowledge of the farm's financial details. The tendency on the part of many men to look upon book-keeping as an added element of expense instead of a producing factor in their business has prevented them from making a close approximation of the expense, income and profit or loss per year of the various factors of their farming.

In many instances farmers are making money from one crop or one branch of stock feeding only to lose it on some other crop or on unprofitable stock. These men persist in growing certain crops or keeping particular kinds or breeds of animals because of custom, when the balancing of accounts would reveal a source of hidden loss.

Idle work horses, low producing cows, unprofitable meat-producing animals, unnecessary machinery that stands idle, fruitless orchards and unprofitable trees that occupy good land, unproductive pastures—these are some of the factors that keep down the net profits of hundreds of farms. Such losses cannot be dodged and it will pay every farmer to spend a few days studying the situation and devising means to cut down all wastes and unnecessary expenditures to a minimum. It is the only effective means of making a start toward better efficiency methods. The tax of ignorance in growing inferior crops, feeding unprofitable stock and maintaining unprofitable fields is greater than any other tax, and it cannot be dodged, for it is a charge against the business every day in the year.

"Too Many Irons in the Fire."

Now the great trouble with many of our farmers is that they have too many irons in the fire—they are struggling under too heavy a load of profit sinkers. I mention this in order to make clear that this article, although primarily to encourage keeping records of the cost of production of the various farm products, is written also to encourage greater efficiency through the dropping of profit-sinking crops, stock and investments. The most successful farmers today are those who have kept cost sheets, studied them at the end of the year and cut out all unnecessary wastes and expenditures. These are the men who are making their farms pay and are a factor in agricultural progress. In addition to making their farms pay decent profits, they are able to spend proper sums for the upkeep and improvement of their property and develop it along profitable lines. On the other hand, the farmer who is struggling along in a blind way supporting a heavy load of profit-sinkers is so pressed for money with which to meet his living and running expenses, that he is unable to maintain his farm, buildings and equipment in condition to keep the cost of production low enough to leave him a decent profit. Therefore, as above stated, the keeping of records of the cost of production tends toward better efficiency methods because it enables us to eliminate the profit-sinkers from our business and develop along more intelligent lines the branches that have the proved ability to return us a profit.

Making a Cost Sheet.

The cost sheet can only show the actual facts concerning the cost of production of the various products. In order to derive the most benefit from such a record one must take a compre-

hensive view of the situation from the standpoint of the fertility of the farm. In this way he can meet the situation intelligently and give credit where it is due.

After reading many articles and studying various methods of keeping cost records I have tried to work out a system by which the farmer can make out a cost sheet which separates the cost of his various products in such a way that he can understand the dependence of certain crops and products on others. This plan separates the cost of production of the products and practically explains the exact distribution of indirect expenditures which are too often overlooked. Some of these expenditures must be arbitrarily apportioned it is true and, although some error may exist by this arbitrary apportionment, nevertheless the proposed cost sheet explains approximately the real as well as the relative cost of each crop and product. After all you see, it is not merely a matter of records for a considerable period. By studying such a cost sheet the farmer will be master of the situation and can plan his farming with a higher degree of efficiency. The cost sheet submitted with this article is one that I made

titles of the mineral elements of plant food tends toward a more economical use of the available supply of nitrogen, thus enabling a better growth of wheat, clover and mixed hay. The growth of several crops on the farm and their reciprocal effect upon the soil and the net income from the farm cannot be thoroughly understood unless we keep a cost sheet and know what it actually costs to produce each crop.

In getting at the profits of farming I can not agree with a large number of economists who persist in distinguishing profits from earnings. This method only complicates the problem and makes it more difficult to understand. Looked at from any standpoint the varied earnings are better understood if we regard them all as the returns from labor; returns marked by many peculiarities, among which the most striking are the risks and uncertainties, the wide range of market and weather conditions and the high gains from good management.

Wages vs. Profits.

In most cases farming profits are separated from wages by considering as wages that amount which the individual would receive if hired by some-

duct is compelled to stand strictly on its own merits, we can trace every loss to its source.

The farm from which I have submitted the above cost sheet consists of 156 acres of land, about 43 acres in pasture, 10 acres in bearing apple orchard, the rest of the land being devoted principally to the growing of potatoes, corn, hay and wheat a five-year rotation of crops being practiced. About two-thirds of the manure is applied to the sod ground in preparation for the potato crop, the balance is used to patch up the thin spots in the clover and grass seedings. The stock consists of from 26 to 34 dairy cows, the number required to maintain a minimum production of 80 gallons of milk a day which goes to the city trade, six work horses, 24 sheep and about 300 hens.

Proportioning the Costs.

In making up this cost sheet I have not attempted to get at the exact cost of producing each crop and product on this farm, but I have charged each crop and product what the owner and myself thought a fair amount, providing they were compelled to stand on their own merits. At first glance many would say that I am charging a small proportion of the labor against the milk output, but further study will show that the labor is charged against the corn and hay crops which are consumed by the cows, sheep and horses. It has been my aim to charge each crop and product maximum prices for labor, seed and fertilizer so that through good management the owner could materially reduce the cost of growing each crop and producing each product.

For example, I have charged the potato crop \$1,445 for labor, seed, manure, horse keep and interest on the farm, while actually the larger part of this cost is being credited to the farm and the other lines of production. The point I wish to make clear is that many times a crop or product that appears to be paying a fair profit may be tapping the other lines of production so heavily that it conceals a source of loss. Some crops and some products that appear to be produced at a loss may more than make good this apparent loss through their direct benefits upon the other crops or products which depend in a large measure upon them for their most profitable production.

In the above case of milk production the cows have left a by-product in the form of manure, worth at least \$600 for use in preparing the ground for succeeding crops. The cows have stood on their own merits and paid full price for their feedstuffs; therefore, it is only fair that we charge the crops which profit from the use of the manure a reasonable sum for its use. This enables us to get more nearly the cost of production so that we may know which lines of our farming are paying the most profit. It also goes to show to what extent the crops produced on the farm are dependent upon the presence of the cows. The feeding of stock enables the growing of a wider variety of soil improving crops and the reciprocal effect of each crop and the stock upon the profits of the farm afford a highly interesting and profitable field for study and investigation.

REPAIR FENCES THIS FALL.

Most farmers delay the repairing of fences until spring, but this is generally a costly delay. Where parts are rotted off the fence will sway back and forth with the wind and weak posts will be broken off which might otherwise have lasted for a year or two longer. Then the fence may become broken or stretched, to its injury. The spring is always a rush season for every farmer. Fence repairing done in the fall or winter is just that much time saved. There will be plenty to do next spring.

Cost Sheet.

Cash Paid Out.		Produced on Farm and Used in Making Other Products.										
Products.	Labor.	Fertilizer.	Feed, Seeds, Spraying.	Depreciation of Stock.	Taxes, Insurance, Gen. Repairs, etc.	Total Cash Paid Out.	Interest on Investment.	Manure.	Hay, Silage, Pasture, Feeds, Seeds.	Horse Keep.	Family Allowance.	Total Cost of Production.
Milk	\$360		\$1670	\$425	\$70	\$2525	\$200		\$1640	\$200	\$80	\$4625
Corn	150	30	10		20	210	60	110		75		455
Hay	150	50	55		20	275	60	90		75		500
Wheat	60	40	30		20	150	60	50		50		310
Fruit	100	30	120		20	270	60	20		30	60	440
Poultry	60		55		2	117	20		60	5	90	292
Potatoes	240	160	190		40	630	150	380	120	125	40	1445
Horse keep	80		60	75	30	245		200				505
Sheep	40		10	10	2	62	10			5	20	217
Totals ..	\$1240	\$310	\$2200	\$510	\$224	\$4484	\$680	\$650	\$2140	\$565	\$290	\$8809

Sales Sheet.

80 gallons of milk per day for 365 days at 15c per gallon.....	\$4,380.00
14 veal calves	134.00
Six cows sold from herd	196.00
3640 bushels of potatoes	2,548.00
243 barrels of apples at \$2.00	486.00
170 cwt. of apples at 50 cents	85.00
Poultry and eggs	318.00
640 bushels of wheat at \$1.10	704.00
Wool, lambs and breeding rams	214.00
Small fruit, truck, etc	72.00
Total products sold from farm	\$9,137.00
Total cost of production as per cost sheet	8,809.00
Leaving a profit of	\$328.00

for a farmer who employed me to check up his accounts for the year. A study of the sheet will give the reader an idea of the actual cost of producing milk, potatoes, apples, wheat, corn and hay here in New York, and I believe the figures will apply approximately to thousands of farms in Michigan and other parts of the country. On this farm we find the potato crop actually made the most profit, but it was in a measure dependent upon the manure from the dairy herd and the supply of organic matter from the roots and stubble of the hay crop, yet the liberal use of plant food from outside sources more than made good this dependence, because the plant food that was not utilized by the potato crop helped out the other crops in the rotation.

Factors to Consider.

The gradual addition of more plant food to the soil than is removed by the crop helps to balance the supply for the succeeding crops. If the potato crop is omitted from the rotation the cost of producing milk would be greatly increased, and the net profits of the farm materially reduced. This is due to the fact that the potato crop affords a better distribution of labor and fertility, and that the use of larger quan-

one else. An efficient farmer's earnings are likely to exceed that sum; the excess is profits. Here emphasis should be put on the element of risk. Profits are the result of an assumption of risk. To know exactly what you are entitled to draw from the business it is necessary to study the facts, avoid fallacies and add every expense, and get the price that will pay the profit. This is no small order of things, but if you have the ability to figure the cost of each product and get at the real facts you will be able to materially reduce the cost of each product on your farm.

This profit of \$328 is found after deducting the total cost of production from the amount of the total sales. This comes after allowing the owner the difference between total cost of labor as per cost sheet and the amount he actually hired, or \$1,240 minus \$760, leaving \$480; interest on his investment \$680; pay for manure \$650; pay for hay, seed, pasture, silage, etc., \$2,140; and \$200 worth of food for his family, or \$5,093. So long as each crop and product is made to practically pay its cost of production we are on a safe basis and good management can make a good showing for the year's business. When each crop and pro-

Good Roads In Michigan

KENT county has appropriated \$107,000 for good roads the coming year and \$25,000 for reconstruction and repairs. It is expected about 25 miles of new road will be built. Concrete roads are coming into greater favor, with six and a quarter miles planned for next year. There are about 130 miles of improved roads in Kent.

Cass county has voted \$34,000 for good roads the coming year, expending \$10,000 on the Cassopolis-Edwardsburg road in Jefferson, \$8,000 on the pike between Dowagiac and Van Buren county, and smaller sums elsewhere.

Hudson township, Lenawee county, has sold its bond issue of \$25,000 for good roads to an Adrian bank, at premium of \$510.

Bay county will expend about \$58,000 on the upkeep of its roads in 1917.

Calhoun county has set aside \$78,000 for good roads the coming year. This sum is raised by taxation and has no connection with the proposed \$800,000 bond issue to be voted on in November.

Jackson county has made no appropriation for road work the coming year but voted to resubmit the question of continuing or rejecting the present county road system to the tax payers at the general election on November 7.

Washtenaw county has adopted a road building program that foots about \$43,000 and also sets aside \$15,000 to assist in building the Whitmore Lake road over the Michigan Central tracks.

This is the first year of the county road system in Van Buren and about \$60,000 has been set aside for good roads. The road commissioners asked for a three-mill tax and were granted two mills.

Grand Traverse county voted \$38,157 for good roads in 1917.

Oakland county is completing 25 per cent more mileage of good roads this year, so it is claimed, than any other county of the state has ever done in a like period. The money available was \$469,568 and 32.9 miles were completed up to October 1, while 12 miles were nearly done, and 39.39 miles will be completed January 1. It is planned to build 74.5 miles next year at a cost of \$298,000. Many roads will be graveled under the township plan and all improved roads will be maintained by the patrol system.

Clinton county had completed 24.5 miles of road up to October 1 and has eight miles under construction.

Emmet county has voted \$45,000 for roads next year.

Charlevoix county has adopted a road building program for 1917 as follows: One mile on East Jordan and Charlevoix road, 1.2 miles in East Jordan, two miles Boyne City and East Jordan, 2.36 miles Horton Bay west, 2.11 miles Boyne City and Boyne Falls, one mile trunk Charlevoix to Norwood, 2.21 miles connecting Charlevoix and East Jordan, 1.5 miles east limits of Boyne City, 1.5 miles west limits Boyne City. Estimated county expenditure is \$31,450.

Ottawa county's road appropriation for 1917 is \$91,400, including \$10,000 for repairs. The supervisors believe in cement or some other type of permanent road.

Contract has been let to Cone & Atherton to build state reward road from Portland to Kent's corners, Ionia county, for \$8,783, which includes everything except cement culverts.

Ingham county has built 27 miles of road this year and will expend \$113,000 on road work next year. Two mills for roads, which is the limit, was voted. It was recommended that the number of county road commissioners be reduced to one.

Eaton county votes to raise \$63,670 for roads the coming year and it is proposed to build a mile and a half of road in each township, with an extra

half mile in Oneida, Roxana and Sunfield if the funds will permit.

Barry county voted a two-mill tax for roads, or about \$43,000 exclusive of state reward money, Barry's first two miles under the county system are now being constructed.

Mason county voted a three-mill tax and will expend about \$16,000 on new roads and \$23,000 for repairs, new work including stone work asphalt carpet top on west division Mason county road. The patrol system was adopted on the following roads: South A. M. & T. B., west Mason county road, north and south O. & M. and the north and south C. & F.

Genesee county has 260 miles of improved road and has completed 19 miles under the county system this year, with 31 miles still to be built.

Alpena county voted \$18,000 for good roads, or \$7,000 less than last year. Road commissioners were placed on salary basis of \$100 a year and may act only in advisory capacity, road building to be in charge of a highway engineer. All road work in future will be done by contract, with adoption practically of state reward system.

The state highway department called a meeting of road commissioners at Marquette and Lansing recently to consider the question of how best to use the federal good roads money that has been apportioned to Michigan. This must be provided for by legislation and the following committee was named to



Yellow Dent Corn Grown on the Farm of L. M. Kent, of Lake County.

prepare its recommendation to the next legislature: P. T. Colgrove, Barry county; Wm. Kelly, Menominee county; Wm. Loutit, Ottawa county; Frank Mahrie, Calhoun county.

HOW A HOBO TAUGHT A SENATOR A LESSON.

The hero of this tale is a farmer, senator, agricultural college graduate, and a live wire generally. "I had for years backed my horses off from the barn floor singly, following the unloading of a wagon of hay," he said to me the other day, "and I had never thought there was any other way by which it could be done, easier."

One day last summer a hobo happened along and wanted a job. The senator was removing a crop of hay from a field and he hired the man to assist him. The barn was an ordinary farm barn with an elevated approach, and when the driver had gone in there with a load of hay, it was barely wide enough on either side to allow the passage out of one horse at a time.

"It had always been my plan," declared the farmer, "to unhook the team, uncheck the lines, and lead the first horse out and fasten him to something on the outside while I went back after the other one. Then I backed the wagon out of the barn, snapped the horses together again and hooked the team on to it. This always took considerable time, as well as being rather inconvenient. It had never occurred to

me that there was another and better way of doing this stunt.

"The hobo was driving the team this day, however, and I was in the hay mow, and I was surprised when I looked down and found that he had the team on the outside and hooked up almost while I was turning around. I watched the next time to see how he got away with it, and was surprised at the simplicity of it.

"My new-found strategist, however, instead of taking each horse out singly, one at a time, as I had done, merely dropped the four tugs, and going to the heads of the horses, backed the off horse out, at the side of the wagon, and made the near horse follow head foremost, until they reached the rear of the wagon, where they were again straightened up and ready to be hooked to wagon again.

"He had my plan beat a mile, and after I had practiced it a few times the horses soon learned to back out single file, noses together, with perfect ease. For doing things with ease the Michigan senator thinks the hobo in this instance has the world beat by several laps.

Ingham Co.

W. E. WOOD.

REPAIR THE IMPLEMENTS.

Before the real work of spring begins, it is best to look over the tools and find out which ones need repairs.

Most repairing can be done at home, but if there are any implements so much out of repair that the services of a mechanic are required, now is the

can. It saves time. Then hunt up an old mouldboard. It, too, may be some rusty, but by some exertion on your part, and sore shoulders on the team, you may, after a day or two, do quite a fair job of plowing. Well, the drag teeth may be dull, though they were sharpened a couple of seasons ago, but drive them farther through the wood. If this is so decayed that it splits get some more wire and tie it together, you will have to get it fixed when you go to town sometime. Then there is the grain drill. A piece of old canvas will mend the hose—didn't think the snow and rain would rot rubber. Again the wire comes handy for the cow stepped on the tongue last summer and broke it.

So I might go on through the whole catalogue of farm implements, but it is unnecessary, as such a state of things will always exist, and nothing can be said or written that will change these matters, but the influence of the Grange and Farmers' Clubs, throughout the country has brought about quite radical changes in this direction, Shiawassee Co. D. H. MORRIS.

GROWING A NEW KIND OF WHEAT.

A new strain of red wheat, known as the "Red Rock," is being pushed by the county agricultural agents and will soon be grown extensively in Michigan should the results of this year's seeding prove at all satisfactory. This wheat was bred by Prof. F. A. Spragg at the Michigan Agricultural College in a series of experiments extending over a number of years and the tests made so far show qualities of exceptional winter hardiness, extra stiff straw, high qualities of grain for flour purposes and a big yield per acre.

Kent county farmers have been raising more white wheat than red, because they have been able to get better yields. This year, largely through the activity of County Agent Smith, 404 bushels of Red Rock seed certified by the M. A. C. have been sold to farmers, also 50 bushels of uncertified seed, and it is estimated the county has 300 acres in to the new kind of wheat this fall. Millers of the county are interested and promise to pay a premium for the new variety if it comes up to expectations.

Calhoun county has 200 acres of Red Rock wheat growing, according to estimates, and both certified and uncertified seed obtained at the college are being tried.

County Agent Bentall, of Allegan, reports that 60 farmers of that county have sowed Red Rock wheat this fall, or a total of about 340 acres. This wheat is growing in 16 different townships of Allegan county, so that next year the seed will be available throughout the county.

Red Rock wheat was introduced in Saginaw county in 1913, when a peck of seed was sown, which produced at the rate of 44.5 bushels per acre. In 1915, 65 acres were sown and the yield was over 2,000 bushels. Most of this has been sold for seed purposes at good prices. One farmer received \$2.50 per bushel for 500 bushels of certified seed, while uncertified seed brought from \$1.60 to \$2.25.

County Agent Robinson points to one instance in Saginaw county of a yield of 11 bushels more per acre of Red Rock than of the other variety grown in the same field. He says it is better quality than any other variety grown in Michigan, is pure, is particularly resistant to winter-killing, is a vigorous grower and stands up well.

Michigan millers are importing thousands of bushels of a Turkey Red or hard wheat every year to put the necessary gluten into their flour blends. They say that the Michigan white wheat is too starchy for flour purposes when used alone and they will gladly buy all their wheat at home when they can get it.

Kent Co.

ALMOND GRIFFEN.

Thawing Dynamite

At this time of the year, when the farmer has his fall work done and has a breathing spell, so to speak, he turns his attention to the odd jobs that are to be done, and there usually are some for the rush of work, which is almost continuous all summer, accumulates small chores for the fall. Many farmers who have stumps to remove or stones to blast, prefer doing it at this time rather than have the stumps to contend with in the spring when everything else is crying for attention.

The one problem that all farmers using dynamite at this time have to solve is the keeping of the powder in shape for use; the cold weather that comes along now chills the dynamite so that it will not do as much execution as it should; therefore, on cold days it is necessary to use some method of thawing. It is in the hope of being of service in the solution of this problem that I am writing these lines.

To begin with, let me warn you, never thaw dynamite by an open fire, or exposed to the direct heat from a stove. To illustrate this point, I think I can do no better than relate a little of my own experience:

I was a lad of seventeen, had seen some blasting done but knew practically nothing about it; when I went to work for the Michigan Turpentine Company and started blasting pine stumps for their factory. I slept in the storehouse, in which was stored a ton of dynamite; had a stove in there, as the weather was cold.

The boss knew nothing about dynamite and had failed to supply a thawing kettle; therefore, I used to thaw it by the stove in the store room. One day when I had just opened a fresh box of powder and had spread some of it out on the floor to thaw, I had placed some on a chair about six inches from the stove—I was in a hurry for it—and suddenly it burst into flames. I caught up the chair and threw it outdoors, but some of the burning grease had dripped onto the floor and started the rest to burning; I caught up the box of powder and ran out and scattered the contents on the ground; then dashing back, I caught up the burning sticks one at a time and threw them out. As I threw the last one out it exploded with a roar, but fortunately it didn't set off any of the others. The old saying of one's knees knocking together with fright is no joke; when I had succeeded in extinguishing the fire I was so weak that I could scarcely stand.

It is likely that the last stick exploded by striking a stone as it fell, which might easily occur when the dynamite was hot; but I have known it to explode when quietly burning. Many people will tell you that dynamite will burn as harmlessly as a candle; while as a rule it will, yet it isn't a safe experiment to try. I wish also to call attention to the fact that in the episode just related the dynamite was not exposed to flames, and did not touch the stove by at least six inches.

There are kettles on the market made expressly for thawing dynamite; these are made on the principle of a double boiler such as we use in preparing breakfast foods, etc. The outer vessel, or jacket, is filled with water and the dynamite is placed in the inner one; this obviates all danger of fire or explosion. Many farmers, however, have the means at hand of making a very good thawing kettle without going to the expense of buying one, which item is not to be winked at. Most farmers have a jacket kettle or other feed cooker; having this, it is an easy matter to get the rest. Procure a fifty-pound lard can, or other receptacle of suitable size which has a tight fitting cover; place your dynamite in the can, put on the cover and place it in your tank of water and start the fire.

The object of the can being covered

is to prevent the powder's coming in direct contact with the steam from the hot water, as this is apt to have a deteriorating effect on it; also be careful that the dynamite doesn't become over heated as this is just as bad; it causes it to leak, that is, the explosive agent is apt to run out with the grease and be lost.

Otsego Co. G. F. DE LA MATER.

CORN FOR THE SILO IN NORTHERN MICHIGAN.

Not until just the last few years have farmers thought it possible to grow corn in Northern Michigan. A glance at the accompanying cuts will prove conclusively that we can produce corn for the silo profitably.

The corn here shown is a White Cap Yellow Dent. It was planted the sixth day of June. A good clover sod with a light dressing of stable manure was the foundation upon which this crop grew. Our season in this northern country is so short that unless the ground is in good condition, our corn will not mature. The soil in this field is a medium clay loam. It was plowed early in the spring and well worked through the growing season. In spite of the fact that we had a very dry sea-

son, and even in times of peace, we cannot expect seed grown on foreign soil to give entire satisfaction under our different climatic and soil conditions. For over a generation, Germany has been mothering along the sugar beet business in that country and it is not reasonable to expect that she would cut her own throat by sending her best selected strains of beet seed to this country to build up a competitive industry.

A reliable supply of well-bred home-grown seed is the great need of the sugar companies today. Such a supply can only be secured by the careful selection of mother beets high in sugar content. Extensive selection in the past has raised the sugar percentage from four up to 15 and in a few rare cases to above 20. As in the past, these high percentages can only be maintained by continual selection.

The best solution of the problem for the present is through the co-operation of the government and the large sugar companies that have sufficient resources to build up the seed business and stay by it in the years to come. Some of the western states have taken steps in this direction and such a co-operative experiment is already under way at Blissfield, Mich. The latter

ones, and none overly large. If there are five rows to the rod (and that is about what they will average) this would make 200 bushels per acre—not so bad for potatoes planted the middle of July this abnormal year. Perhaps they won't all run like this. I had better wait until they are all dug before I say more.

We have just got the traction engine fixed up and the big plow ready for plowing. We had to wait two days for plow repairs. During this time the three teams of horses have plowed about 30 acres while we were getting ready with the tractor and plow. Now it may rain so much we can't use the tractor at all this fall. Well, if we can't it will be all ready for next spring.

Rural Credit.

The new rural credit law is being discussed pro and con. Some people are trying to make political capital out of it. One daily paper in the state is trying to ridicule it out of business. Now I don't consider this a political question. There is not, and ought not to be, any politics in it, whatever. The law may not be just what it ought to be at first, but it is a move in the right direction and can be modified later. We need something of this sort in this country. Farmers are not extended proper credit in many localities. The business of farming will not stand 10 and 12 per cent interest on short time loans, and it ought to get money for four or five per cent for long-time loans, because the security is the best. It is absolutely safe; just as good as a municipal bond or a government bond, yet these securities draw only from three to four and a half per cent.

The farmer many times pays for his farm two or three times over because he has to pay six to eight per cent on long-time mortgages. He has to pay six to 12 per cent and even 15 per cent on short-time loans. Other men get money for less and no one will argue that the security is better. It is hardly ever as good. The farmer submits to this just because he works hard, is busy and don't stand up for his rights. He is going to do differently, and the rural credit law is going to be the foundation for his financial success, or it can be made to be, at least.

Does the farmer need to stand up for his rights? Let me give you two instances that have come to my notice just recently. One farmer had a fair crop of beans. He needed cash. His bank did not want to loan him money so he could hold his beans. The elevator man would not pay the established price, so the farmer sold at the price offered. A few days later the elevator man boasted he made \$500 off this deal. Think of it! The dealer made more money off this crop in a few days than the farmer who performed all the labor, took all the risk and had all the investment. Incidentally this elevator man was a stockholder in the bank.

A farmer in this state wanted to start his boy to college. This takes money. The farmer had a crop of beans and other crops but he wanted to hold them for the established price. He went to the bank to borrow for a short time and the banker wanted 12 per cent. Did the banker want to force the farmer to sell his crops or did he want just the 12 per cent? There may be no connection between banks and crops but these two instances look like it, "to a man up a tree."

Now, land banks founded on farm wealth and under the control of and for the benefit of the farmer, can be made to do away with such practices as this. It is up to the farmer. A farmer with a crop of beans or wheat or cotton ought to be entitled to a loan if he wants it, as well as a man who owns a factory and gives the capital stock in that factory as security. The beans, the wheat or the cotton are safer security than the stock or bonds of the factory, and can be converted into cash more quickly.

COLON C. LILLIE.



Field of White Cap Yellow Dent Grown on the Farm of Fred Herron, Wilson Township, Alpena County.



son, this corn yielded over 12 tons per acre. On the twentieth day of September, the corn was put in the silo. It was well dented at that time and had not been touched by frost, which will insure the making of first-class ensilage.—David Woodman, County Agricultural Agent, Alpena County.

SUGAR BEET SEED PRODUCTION.

The price of sugar beet seed has kept pace with the twelve-cent loaf of bread and the soaring price of meat. Before the war, the United States imported eight million pounds of beet seed annually. The bulk of it came from Germany, although France and Russia furnished some. Developments since the war have shown that much of the so-called high-bred German seed was really a Russian product and it is today being shipped in by Russia, with the understanding that none of it be allowed to reach Germany.

state is free from the curly leaf hopper that causes the very destructive mother-beet disease known as curly leaf. The highest sugar content is, however, secured in high altitudes having little rainfall.

The cost of production of sugar beet seed is around one hundred dollars an acre but yields of as high as one ton of seed selling at 15 cents a pound are not unusual.

Jackson Co. R. W. PETERSON.

LILLIE FARMSTEAD NOTES.

A good soaking rain stopped plowing on stubble ground for a few days and made the potato field too wet to dig potatoes. The digger would not work well in the lower places of the field today, October 24. The men went across the field and back and quit and went to plowing. The rows are 40 rods long. On those two rows there were 20 bushels of potatoes. Fair medium sized tubers with very few real small

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NOTICE

Hastings, October 29th, 1916. Notice is hereby given that there will be a special meeting of the members of the Michigan Mutual Tornado, Cyclone and Windstorm Insurance Company to be held in the city of Hastings, Michigan at the city hall on December 5th, 1916 at one o'clock P. M. for the purpose of voting on the revised charter of this company as adopted by the board of directors October 3rd, 1916. By order of the Board of Directors. D. W. Rogers, Sec.

The Popularity of Apple Varieties

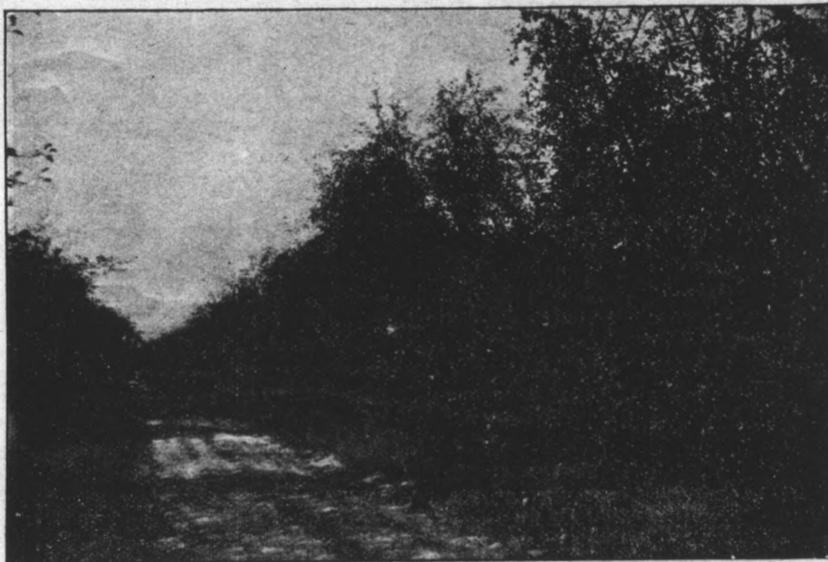
WHAT variety should I set?" is the common question of those who are setting out new orchards. In solving this question to get maximum results from varieties, the character of the soil should be taken into consideration and in that regard what may do well on one farm would not be adaptable to a neighboring farm. There is, however, a disadvantage in adhering too closely to the selection of varieties according to local conditions as it often causes the growing of a large number of varieties in a community and sometimes even in an orchard. A conglomeration of varieties is not as easy to market and an orchard, community or even a state, which grows a few good standard varieties which do well in a wide range of soils gains a reputation for growing these certain varieties and is therefore better able to dispose of them to advantage.

It is therefore interesting to note what varieties are most popular in this state and the standing of the state among others in the production of the standard varieties. In the past we have had no means of getting any comparison in this regard but this year the

Baldwin crop of the country. Michigan is not included in the list of Ben Davis producing states, and we are glad of it, although even that variety has its field of usefulness. But in the production of the Greening, which variety was next to the Baldwin in popularity twenty years ago, and which is still a good commercial apple, we rank third. New York occupies first place and Pennsylvania second.

In the production of the old stand-by of quality varieties, the Northern Spy, Michigan is second, New York holding first place by a margin which nearly doubles Michigan's production. The Spy is a variety which will always be in demand and therefore it is hoped that Michigan will hold or even increase her standing in the production of this variety, as Michigan presents ideal conditions in which to grow this variety.

The Wealthy variety has a total crop decrease of 13 per cent as compared with last year, while Michigan, the banner state in the production of this excellent market variety, has an increase of 33 per cent over last year. This state leads New York by 106,000 bbls., although New York crop is 57



Thrifty October Foliage, which is the Result of Thorough Spraying.

Department of Agriculture has issued an apple crop forecast which is given by varieties. From this report the following information was deducted:

Michigan's Crop a Good One.

The apple crop of the country is an average one but is 12 per cent less than last year's crop. The crop is larger than last year in eastern and western states, but smaller in the middle states except Michigan, which has a crop 34 per cent larger than last year.

Baldwin is the leading variety in production, crop being 12 per cent larger than last year, while Ben Davis, the leading variety last year, is 17 per cent short of last year's crop. The Baldwin crop is estimated as being 57,000 bbls. larger than Ben Davis. Winesap is third in production, although the crop is 32 per cent lower than last year. Greening is fourth with a crop slightly larger than last year, and Northern Spy is fifth with a 25 per cent increase over last year's estimate. Other varieties popular in Michigan rank this year as follows: Wealthy, sixth; Jonathan, eighth; Grimes Golden, tenth; Duchess of Oldenburg, eleventh; Tompkins King, fifteenth; Wagener, McIntosh and Snow, sixteenth, seventeenth, and eighteenth respectively.

Michigan's Baldwin crop is forecasted at 561,000 bbls., or 59 per cent larger than last year. It is quite surprising to find that with even such an increase, Michigan is only fifth in the list of Baldwin producing states. New York, of course, is first by a large margin of nearly 3,000,000 barrels more than Pennsylvania, which ranks second. Massachusetts and Ohio hold third and fourth places respectively. New York produces over one-third of

per cent larger than it was last year.

The Jonathan crop is 46 per cent less than last year's crop, and though this apple is a favorite among Michigan fruit growers, this state is not mentioned in the list of states leading in the production of this variety. Missouri leads with Kansas, Illinois, Iowa and New York following.

Neither is Michigan prominent as producing Grimes Golden, which has a crop of 30 per cent below that of last year. Ohio is the banner state in the production of this variety, with West Virginia, Indiana and Pennsylvania also prominent in producing one of the best yellow apples grown.

The Duchess, the variety which really opens the apple season because it sells well as a pie apple, even when quite green, produces a crop eight per cent less than last year. In this variety Michigan also holds first place, with a crop 30 per cent larger than last year's. New York holds second place with a crop 144 per cent larger than the last harvested crop.

Michigan is third in the production of King, which forecasts a total crop 20 per cent less than last year, but is first in the production of the Wagener, with an increase of 39 per cent in production over last year. Pennsylvania is a close second in the production of the latter variety.

Michigan's production of the McIntosh is not great enough this year, at least, to be ranked among the five leading McIntosh producing states. This seems peculiar because Michigan is one of the leaders in the growing of the Snow, the most popular of the Fameuse group of apples, of which the McIntosh is a member. This year Michigan takes second place in the

production of the Snow, because New York had a 98 per cent increase over last year and Michigan a six per cent decrease. The figures indicate that New York and Michigan are strong competitors for first place when an average season's production is considered.

The above figures show that Michigan tops the list in the production of the great trio of early bearing varieties, Duchess, Wealthy and Wagener. It goes to show that the fruit growers of the state realize that there is no better place to grow the Duchess than the southern part of the state and the Wealthy develops to its highest perfection in the northern part of the state where it is practically a winter apple.

Although the Wagener is a good quality apple and the trees are productive it does not always sell as well as other varieties. Nevertheless, it is an excellent variety for filler purposes, especially for Spy orchards, as it is the antithesis of that variety.

Michigan is also prominent in the production of the Baldwin, Greening and Spy, the old standby market varieties.

It goes to show that Michigan growers have been conservative in the selection of varieties; that they prefer varieties which have been thoroughly tested and have proven well adapted to Michigan conditions.

It is interesting to note that Michigan's sister state in apple production, New York, is the leader in producing market apples. She maintains big leads in the production of the Baldwin, Greening, Spy, King and McIntosh, and ranks second in producing the Ben Davis, Wealthy and Duchess.

TROUBLE DEPARTMENT.

Controlling Cabbage Lice.

Can you tell me what to do for lice on cabbage?
Lapeer Co. A. B. S.

The best way to control cabbage lice is to dip the infested seeding in either a tobacco extract to which soap has been added, or a five per cent kerosene emulsion. The tobacco extract would probably be most convenient to use, and the manufacturers would give directions for its use for this purpose.

When the lice are noted on the plants, they should be thoroughly sprayed with either of the two solutions mentioned. The most satisfactory results can be obtained by spraying the plants before the heads begin to form.

As the aphid passes the winter in the egg stage on old cabbage stumps or heads, it would be advisable to dispose of all the crop remnants. The rotation of crops will also help to prevent the attacks of this pest. Wild mustard and shepherd's purse are also attacked by the cabbage aphid, and therefore should not be allowed to grow near the cabbage patch.

HORTICULTURAL SOCIETY MEETING.

The Forty-sixth Annual Meeting of the Michigan State Horticultural Society will be held in Grand Rapids, on December 5-6-7, 1916. The meetings will convene in the Audience Room of the Coliseum, and the large Exhibition Hall in the Annex will be used for the display of spray machinery, spray material and other articles used in fruit growing.

A fine display of fruit will be exhibited and all fruit growers are urged to have some choice specimens. Prizes will be offered for collections and single plates.

A splendid program is being prepared with speakers of national and state reputation. Program books will be ready for distribution in November. Send your name and address if you wish a copy.

For any and all information address Robt. A. Smythe, Secretary, Benton Harbor, Mich.

THE FALL CAMPAIGN AGAINST INSECTS.

Take advantage of the bugs in their winter quarters, the remnants of old plants, the trash and litter about the garden and orchard. Burn out the fence rows, destroy the trash and litter wherever it has accumulated, by burning it or plowing it under. Cut out the dead trees and limbs in the orchard and make them into fire wood.

This cleaning up about the orchard and garden will destroy a dozen or more of our most destructive pests. For example, the plum curculio is now wintering as a full grown beetle in the trash and litter along the fence rows or about the trees; the codling moth will be found in the worm stage within a silken cocoon tucked away under the shelly bark of dead trees and dead limbs; and the fruit tree bark beetles or shot-hole borers will also be found wintering mostly as adult beetles in dead or dying trees.

Under the old stalks and rubbish in the garden, and about the borders will be found the adult asparagus beetle, bean leaf beetle, harlequin cabbage bug, flea beetles, the striped cucumber beetle, and the chrysalis of the cabbage worm. If you want to kill these pests, pile and burn dead tomato and pea vines and other remains of vegetation in the garden and along the border.

Deep fall or early winter plowing will also destroy many insects. This is especially true of the cut-worms, potato beetles, white grubs, and wire-worms which are now hibernating in the soil. Late fall or early winter plowing will turn these insects up near the surface and expose them to an attack of birds, poultry, and other animals. At this season of the year the insects are in a dormant or semi-dormant condition and when brought up near the surface of the ground they are unable to go deeper in the soil or to construct new cases or cocoons and they are killed by being subjected to excessive weather conditions and to the alternate freezing and thawing.

Fall plowing and cultivation will also enable you to have vegetables a week or ten days earlier next spring because you will be able to plant earlier on fall-plowed ground. Early, thrifty, healthy plants are also less liable to injury from insects.

Mo. Ag. Exp. Sta. T. J. TALBERT.

TROUBLE DEPARTMENT.

Hogs in the Orchard.

In the issue of your valuable paper of September 30, page 293, appeared an illustration of the orchard of Luther Hall, Ionia county. You stated, "Mr. Hall raises bumper crops of pork and apples on the same ground, forage crops for hogs being grown in the orchard." I failed to find any article in the same issue explaining more at length Mr. Hall's methods. I am very much interested in learning more about the conditions under which he works, and details of his success. I conceived that some plan similar to that of Mr. Hall would be profitable. I should like very much before installing it to obtain the benefit of some other person's experience, the more details the better.

Van Buren Co. T. M. S.

Briefly, Mr. Hall's methods are as follows: He plows early in the spring and conditions the ground for Canada field peas which he sows at the rate of two bushels per acre. When the peas are matured he turns in the hogs. After the peas have been harvested by the hogs he spreads shelled corn in the orchard for them to eat. The hogs are allowed to remain in the orchard until the fruit begins to bear the limbs down to within reach of the animals. After the fruit is harvested they are again returned to the orchard to pick up any apples that may be left.

Mr. Hall says that one will experience no trouble with hogs in the orchard if he provides plenty of feed and not more than five hogs to the acre. While Mr. Hall has been very successful with this method both as regards production of fruit and pork, other

orchards may suffer from a similar practice on account of local conditions being different.

CRAPPLES PROFITABLE.

The Chicago market held up an active demand for crab apples this fall. A Michigan grower is supplying a large proportion of this demand from a crab-apple orchard of seven acres on which there are 1,000 trees, 600 of them in bearing. They are of the Hyslop variety and his orchard presents a beautiful sight to look upon.

This year he sold his crop at the rate of \$1.33 a bushel basket, delivered at his own landing on the Kalamazoo river. Five years ago his crop amounted to 525 barrels, which he sold at the rate of \$3.25 a barrel.

The name of this successful crab-apple grower is Henry Mead, his farm



A Crabapple Picker who Likes Crab-apple Jelly.

is in Allegan county. He says that he had had luck in producing fruit until he tried crab-apples. He plowed up one peach orchard after another until not a tree was left standing, and put the crab-apple trees in their places. Illinois. J. L. GRAFF.

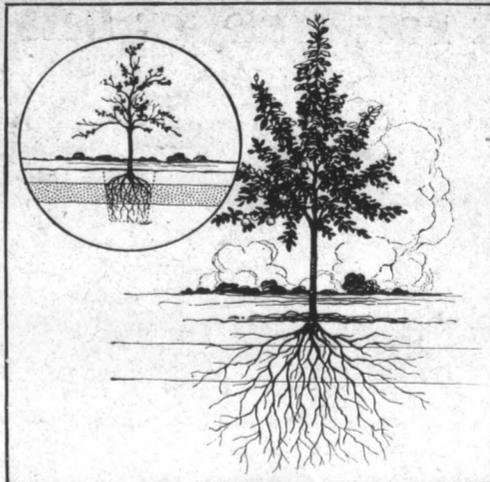
LIGHTNING DANGER OF TREES.

Recently statistics have been collected in different parts of Germany as to the danger of different varieties of trees being struck by lightning. The result has been the following percentages: Oak 32.1; larch 9.5; fir 3.8; pine 1.8; Scotch fir 0.9; birch 1.4; beech 0.3; alder 0.0.

The character of the soil is an important factor among others as to the lightning danger. Trees growing in moist soils and along the courses of rivers and brooks and in the neighborhood of ponds are especially exposed to the danger. Trees with deep penetrating roots are more easily struck than those with shallow roots nearer the surface. As proof of this is the greater frequency of the apple tree being struck than the pear in the same orchard. It is also stated that the poplar stands first in danger before the oak, elm, ash, gum, and pear tree. Together with the beech the least attractive to lightning are chestnut, maple, alder, and mountain ash. Between these two groups stand the apple, cherry, linden, and walnut.

During thunder storms it is advisable therefore to avoid oaks, poplars, all varieties of pine, willows, elm, and pear. If shelter is taken under a tree, which is always dangerous, it should not be under one standing alone. The planting of trees which attract lightning is recommended in the neighborhood of houses, especially poplars, partly to prevent the possibility of the rebounding of the lightning.

WEST MICHIGAN APPLE SHOW will be held at Ludington, Mich., November 28-29 in connection with The Second Northern Michigan Agricultural Congress. Prominent horticulturists will address the meeting and liberal cash premiums will be awarded for box collections and single plates. For information apply to O. G. Prettyman, Sec'y, Scottville, Mich.



Picture in circle shows how "hard-pan" or "plow-sole" prevents roots from reaching the necessary amount of plant-food. Larger picture shows how this is overcome by dynamite and the resultant improvement of tree-growth.

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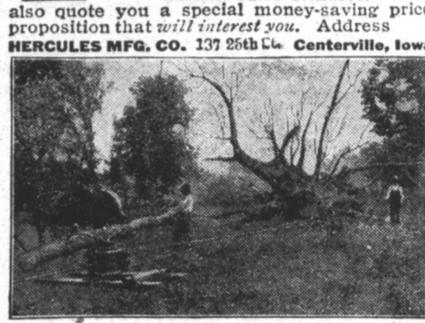
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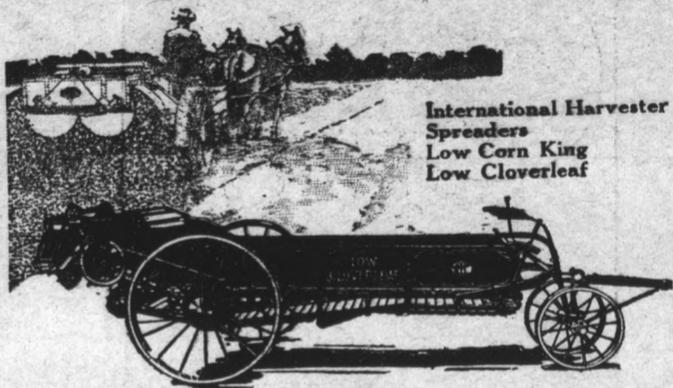
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Stock Breeding Hints III.

By N. A. CLAPP

WE have been taught to revere the teachings of the old masters in the art of live stock breeding, but the more thoughtful ones of the present time have discovered the fact that some things taught by those old worthies which have come to us as maxims, or fixed principles, do not convey to the mind a correct impression when given even as they have come to us. The saying that "like produces like" is not a correct statement when used in connection with live stock breeding. The statement is true if used in reference to different kinds of stock. For instance, sheep bred to sheep produce sheep, and swine bred to swine produce swine, etc., but to use the saying in connection with improving the kinds, or breeds of the kinds, is not correct. The effort is, or should be, to produce the unlike or something better than the ancestors on the side of either sire or dam. A skillful breeder aims to, and does accomplish such results.

The "Unlike" Essential to Progress.

If we were producing just the fac simile in looks and reproducing just the same characteristics in our stock, we would not have anything at the present any better than we had fifty years ago. I am aware that some old men are repeatedly referring to the good old stock that was kept and raised in their time, that, as their memory serves them, was superior to what is kept at the present time. If such stock as was kept fifty years ago could be produced and shown beside some of the best of today, a good judge could point out great differences and great improvements made in a half century. It is not the likeness of the old-style animals that suits the tastes and meets the approval of the up-to-date breeder, but it is the unlike which surpasses all former productions in the breed that we are striving for and securing at nearly every turn in our movements as breeders.

Everything in nature teaches us that there is progress or a forward movement in every successive step in creation's methods. The seven steps or periods in creation's processes prove it. There was first gas, then water, then rock, then soil, then plants, then animals, then man.

The ancient Grecian philosopher, Thales, (600 years B. C.), discovered that all life form begins in water. Changing conditions brought about changes in forms. Improved conditions brought forward improved representatives of the kind. The improved representatives of the kind established a higher level. Then better conditions caused some of the representatives of the higher level to make a leap to a still higher level, and so on. The history of the progress and successive steps of life forms are written by the hand of nature on the rock ribbed surface of the earth. The fossilized remains of life forms of the early periods of life on the earth, stand as silent, and yet unimpeachable witnesses that testify to the facts in the history of life as it existed during the successive periods. Geologists have found them and Paleontologists have read and interpreted the story.

The Horse as an Example.

If we were to begin at any point in the history of the life forms of the ancestors of any of our domestic animals we would not be satisfied to breed and hold them as they were. There have been digressions which have made marked differences in the progeny. It is claimed that the ancestors of the horse, the ass and the zebra were the same. The ass may have been utilized by man first, and yet the horse, by his intelligence and beauty, as well as his agreeable ways, has become universal popular as a companion and servant. The horse is recognized as a horse

throughout the civilized world, whether it be the diminutive Shetland pony or the ponderous drafter that weighs a ton. If at any time in the history of the horse breeders had been satisfied to only produce the like of the animals they had in hand, we would never have seen the majestic specimens of draft horses which we have today, the trotter that can cover a mile in two minutes or less, or the running horses that can run a mile in a short period of time and endure to run at a rapid pace ten miles. Capability and endurance have been secured by selecting those that possess those characteristics in a greater degree than any among their immediate or remote ancestors. When greater capabilities of speed and endurance have been acquired, such animals have the power to transmit the tendency to speed and endurance to some of their progeny, and those that inherit those capabilities are prepared to establish a higher level than had been known before.

Performance the Standard.

The rule of securing, as far as possible, the best and most capable and breeding from the same, has been followed by the breeders of all kinds of live stock. If that rule had not been followed by the breeders of the different breeds of dairy cattle we would not have the heavy producers of milk and butter that we have today. Instead of a Lilla Alcartra that produced 30,452 pounds of milk in a year, we would have more of the thin chested, slab-sided, short-hipped, thin-blooded cows that are star boarders that are present to eat and do not yield enough milk and butter to pay for what they consume.

The breeders of dairy cattle have been acting along common sense lines, and like the running horse breeders have selected their breeding stock very largely from among the best performers. Instead of following the old rule of breeders of fifty years ago of selecting the heifer calves from the best cows, regardless of the sires, they have taken into consideration the breeding of both sire and dam. The aphorism published in an old English Reader, "A good cow may have a bad calf," proved to be true in too many cases under the old plan.

The laws of heredity as discovered in the human apply equally as well among the animals. The saying that "like father like daughter, like mother like son," comes nearer what can be proven by actual practice to be correct than the old plan of selecting the sires only for the beef animals and from the dams only for the milk animals. Both sire and dam wield a potent influence on the progeny.

If we keep in mind the fact that there are, and will be, exceptions to the rules laid down to follow, we will avoid many disappointments when things do not turn out as we hope and expect they will. So when we select a sire from which to raise heifers that is out of a cow that possesses the characteristics we wish the heifers to possess, we may expect that he will transmit the same in a great degree. We may reasonably expect that the dam will transmit to her sons the characteristics which she inherits from her sire. It should also be remembered that what is called "family traits" have a great influence on the progeny, whether they are in the ancestral line on one side or the other.

The skillful breeder studies all the influences that are due to come in the ancestral lines on both sides, and so mingles the blood that the currents may unite and produce something better than the animals that make up the ancestral lines on both sides. He is not satisfied with something like the ancestors, but is looking for and getting something unlike them, because it is better.

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Small Pigs

In traveling through the country at this time of year a great many pigs weighing not more than fifty to seventy pounds are seen in the feed lots and pastures.

To be marketed at a price anywhere near the top these pigs must be carried through the winter at least until January or February. When one considers the additional cost of gains made through the winter months when no green feed is available one is led to wonder whether it would not be more profitable to have these pigs larger at this time of year. That it is more profitable to have the pigs larger at this time of year, at least in most cases, is proven by the fact that the most successful hog raisers see to it that their spring pigs weigh at least 110 to 135 pounds by the end of September. Should one undertake to criticize a man with 60-pound pigs and tell him that his pigs should be larger, an argument immediately follows. The average farmer knows that his pigs should be larger at this time of year to be profitable. His problem is how to get them larger. Wherever small pigs are found at this time of year several shortcomings can be located in the management the pigs have had. The first is that inferior, undersized breeding stock has been used, the second is that the pigs were farrowed late in the spring and the third is that they have

made to get the pigs early in the spring and grow them rapidly through the summer months.

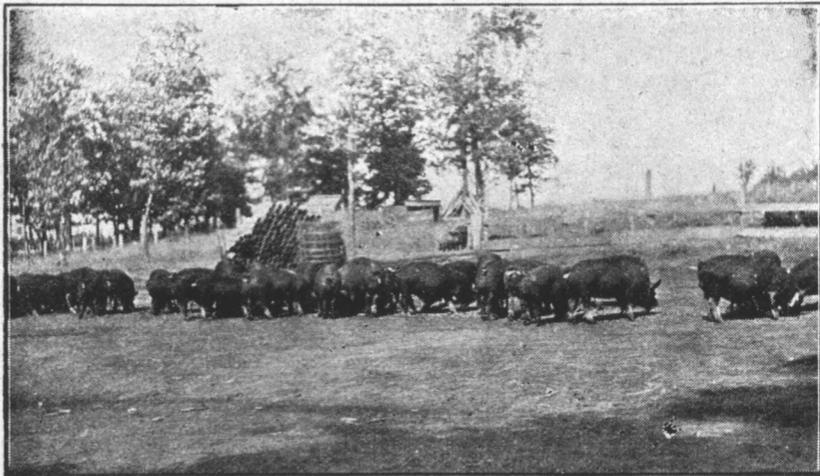
N. D. Exp. Sta. W. H. PETERS.

WINTERING STOCKERS.

Science and good farm practice are being brought into better understood harmony by such experiments as those completed by Dean F. B. Mumford at the Missouri Agricultural Experiment Station. Dean Mumford finds, as the results of his tests, that the common practice of feeders buying stockers in the fall is justified by the fact that they are usually from fifty cents to a dollar cheaper than in the spring following. This difference enables the buyer to winter them in such a way as to secure a fair price for the coarse and otherwise unmarketable roughage used and to build up the fertility of his farm.

The experiences of the College agrees with that of other feeders in indicating that under Missouri conditions cheaper gains can be made by summer feeding on pasture than by full feeding in dry lots during the winter, and that the greatest and most economical gains cannot be secured in summer feeding on pasture unless the cattle are rather thin when put on grass.

Having secured his stockers, the farmer's next question is, "What shall they be fed and how shall they be handled during the winter?" The wide



Early Pigs, Well Fed on Pasture, Make Cheap Gains and Sell at High Prices.

gone through the summer on pasture but with too limited a grain ration. The first essential in raising big growthy pigs that can be marketed in the month of November at a weight of 175 to 200 pounds is that good big, heavy-boney breeding stock must be used. For some reason or other a pig farrowed in March or early in April always seems to grow faster than one farrowed in May or June. The second essential to rapid growth of the pigs is that they be farrowed early. March is the month selected as the most successful farrowing month by the best hog growers. It is true that it takes something of a building and a little care to farrow the pig crop in March, but it pays. In order that pigs may make a rapid growth through the summer months they must have a combination of good pasture and a suitable grain ration. It has been proven a good many times that pigs will make the most rapid growth when running on good pasture and getting their grain from a self-feeder. However, this has not always proved the most economical method of making the gains. In the work at the North Dakota Experiment Station covering several years, good gains have been made when growing pigs were pasturing on alfalfa and receiving a grain ration of three pounds per day per 100 pounds live weight of pigs.

It has been demonstrated that hogging off corn is one of the most economical and practical ways of fattening pigs. However, if this is to be done successfully the pigs should weigh an average of 115 to 125 pounds at least, when they are turned into the corn in September. This is another reason why every effort should be

variation in practice indicates a need of more knowledge on this subject.

The most economical ration consisted of corn silage and alfalfa hay. Timothy hay did not prove any more economical than wheat straw for use with corn silage, but the efficiency of a ration of six pounds of shelled corn and clover hay was materially increased by substituting corn and cowpea silage for corn and clover hay.

CORN, OATS, WHEAT FOR FEED.

In an experiment at the Wisconsin Experiment Station three lots of heifers weighing about 350 pounds were fed equal amounts of nutrients. For one lot the nutrients were wholly from the wheat plant, another from oats and the third from corn. All lots grew at about a normal rate, but after a few months it became easily observable that the wheat lot was not so well nourished as the others. This was evident from the appearance of the coat. The corn and oat fed lots bred earlier than the wheat fed one, showing that the latter were depressed in some degree. The corn fed lot produced calves which were of normal size and full of vigor. The oat-fed lot produced calves, which were of about normal size but with very low vigor, while those from the wheat lot were about half as large as the normal calf at birth and were dead or ready to die when born. When half of the roughage of the wheat lot was replaced with alfalfa hay the calves were normal.

No reasons have yet been worked out as to why these foods should act so differently but it is important to know how they affect animals.

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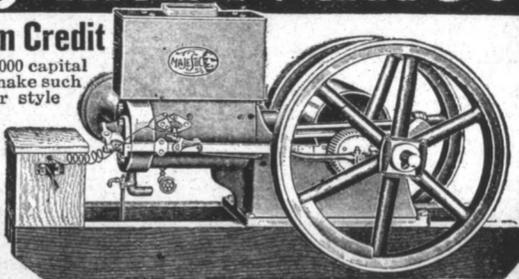
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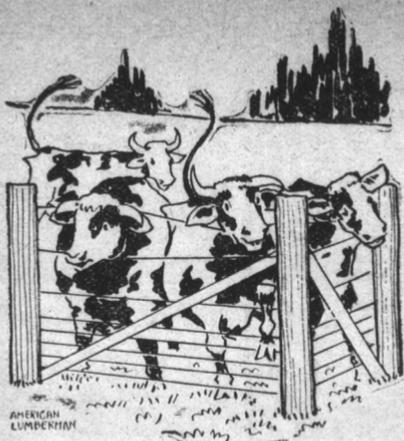
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Wanted Agents to sell Farmers' Account Books. Quick Seller Big Profits. Exclusive Territory. Address E. L. Syphers, Fort Wayne, Indiana

Roughage Feeds for Dairy Cattle

IN order that each cow may produce the maximum of butter-fat in the year, it is always advisable to have them freshen in the fall. Sometimes they have ways of their own about freshening, and we have to be content to abide by them, but in a general way we are usually able to control this matter quite fully.

October and November are both good months in which to have the cows come fresh. The silos are filled, seeding is over, and while corn husking and potato digging are making demands on our time, they do not last long, and all the cows do not come fresh in one day anyway; and we can afford to work a little harder for a few days if we may have the cows thus early in line for a good winter's work.

Then, too, the calves dropped in the fall are apt to do much better when turned upon grass in the spring, than those that come along later in the winter.

Care After Freshening.

Just a word now about getting these cows started right. Care is necessary at first not to overfeed them. There

quality of hay. If it is over-ripe, if it has been damaged by rain in the field, or if it has been allowed to lie in the sun and burn too long a time, then it is of less value as a feed. It requires more labor to cure hay in the cock than to shake it out with a tedder, let it lie in the sun until perfectly dry and then haul it to the barn or the sack, but hay cured in the cock with practically all the leaves remaining, contains less crude fiber and more food value than hay cured by any other methods.

Silage Most Valuable.

But I have neglected to speak of ensilage. Ensilage after all, is probably the most important form of roughage when considered by the dairyman. There is a great deal of difference in the value of ensilage, some people ensilo the corn before it is sufficiently mature, and lose out there, while some allow it to get too ripe and the hard kernels will not digest. Some corn planted for the silo has no ears on it at all. Generally speaking, the corn that is cut too green yields a larger tonnage because it is a larger kind of



Three Generations of Jerseys.

are plenty of people who keep cows who were never guilty of overfeeding them, and while they fail to get out of them what they should, for a few days after freshening, their practice is good.

I have a cow in the stable now that is a victim of too much feed too soon after calving. She is a splendid animal, she was quite fleshy when she came into milk, and I was anxious to give her the best possible chance. I crowded her just a little too hard, and now she is not eating more than sixty per cent of what she should eat. She is still milking well, but is taking it from her body. Yes, she is a very economical producer now, but by and by she will be thin in flesh, her milk flow will fall off, and it will take her months to catch up. All the time she will make me pay for my mistake. So we should take plenty of time to get the cows on full feed after calving.

The cow is made to consume large quantities of roughage. It is sometimes argued that some breeds of cattle will eat more roughage in proportion to the grain consumed than others, but I question this statement. All breeds of cows will consume liberal amounts of roughage if they are obliged to do so.

The Roughage Feeds.

There is much variation in the nutritive value of different kinds of roughage. Cows will eat wheat and rye straw, in fact they will keep alive on it, but it is about as poor roughage as can be fed to them. Oat straw is a little better, good corn stover is better still. Timothy hay is of considerable value, if the grain fed in connection is chosen wisely with respect to the kind of roughage used. Alsike and red clover are very good, and sweet clover and alfalfa may be classed as unequalled in food value and adaptability when dairying for greatest profit is considered.

But there is much difference in the

ensilage around the outside is apt to cause trouble. Anyone who has tried it is likely to know about the trouble so I need not speak of it here.

If straw is lacking, loose ensilage may be spread over the surface and the freezing will be prevented quite as thoroughly. This is a long way ahead of putting an oil stove in the silo.

A Method of Handling Silage.

In case the stable is sufficiently warm, the ensilage for morning may be gotten down the night before, and left in the stable over night during the very cold weather. Little labor is lost in this method of handling, and the cows can be very quickly and conveniently fed in the morning. Then, if the ensilage in the silo is covered over with a foot of straw there will be no trouble about frozen ensilage. In the northern part of the state, where the cold weather lasts longer and is more severe, it may be necessary to use more straw in order to provide a covering sufficiently deep.

In this section, it is highly important to place the silo on the south side of the barn. The material from which the silo is built, influences the temperature somewhat, but not nearly as much as is generally supposed. If very cold weather should occur and last but a few days, the ensilage might freeze considerably in a stave silo, a cement stave silo, or any silo having a solid wall which was not very thick, while in a Wisconsin silo, or any other, built with a double wall having an air space between, it would not freeze much. But if the cold should continue for a long time, the heat would pass out through any ordinary wall, and the ensilage would freeze.

However, the freezing is mainly at the top and if the precautions herein suggested are taken, the stave silo may be used in any part of Michigan and ensilage may be fed from it all winter.

The Size of the Silo.

The small silo will freeze much sooner than the large one. My observation leads me to believe that by far the greater number of silos on small farms in our state, are but ten feet in diameter. This is as it should be, for no greater mistake can be made than to buy a silo that is too large. The owner of such a one never has any good ensilage except in cold weather, because he can not feed it fast enough to keep it from spoiling.

But it requires more care to keep the ensilage in a small silo from freezing. South of the line of towns twenty north, there is little if any trouble, but north of this line the cold lasts longer. That is to say, when it does warm up, it does not get above the freezing point so soon. Indeed, many times it does not reach that point before another cold wave comes and our silo does not warm up at all. While just a little farther south, they have had a whole day with the mercury above the freezing point, or possibly the greater part of two days.

Covers for Silage.

If all of those who have trouble with the ensilage freezing, will cover it with some non-conducting material, straw is as good as anything, they will be able to get along successfully no matter how long the cold may last.

A non-conducting cover might be made from good roofing material, so that it would just cover the ensilage. It could be made double with an air space between, and be fastened in the middle by hinges, so that one side could be lifted at a time.

This would involve some expense and would be no better than the straw, though it could be handled more quickly after it had been once gotten into the silo. Of course the most practical way would be to build it inside the silo and keep it there—lifting it to the top by means of a line after the weather became warm and there was no farther need for it.

Oceana Co. F. W. TAYLOR.

Care of Silage in Cold Weather.

Freezing does not seem to injure ensilage, but frozen ensilage is not conductive to milk production, and so we should be careful to avoid feeding too much of it. If the ensilage is covered with a liberal quantity of straw it will not freeze much. The straw can be pushed to one side of the silo and the ensilage taken from the other. Then it can be spread over the whole surface and when another feed is taken off, it can be removed from the other side, always taking care to keep the ensilage low at the outside.

If it is gotten down twice each day, there will be little trouble from freezing. The practice of leaving the frozen

National Dairy Show

WHEN asked why he put two settings of eggs under one hen, the boy replied that he wanted to see "the old bird spread herself." When the National Dairy Show Association decided to hold the tenth annual show at Springfield, Mass., it knew that Springfield and all of New England would need to "spread itself" to hold this great event up to past standards. And Springfield spread and New England spread, and the show just closed was the greatest in the history of the association.

Every successful show is usually proclaimed as the "greatest ever." Therefore it is wise and also satisfying to particularize. The 1916 show was greatest in point of attendance. The paid admissions exceeded 250,000 for the ten days. The opening day broke all previous records with 35,000 visitors, and the crowds continued to come up until the closing day. New England and the east showed its appreciation of the greatest agricultural event ever held in this section. This year's show was greatest in number of cattle and distribution of herds. It was truly a national show with 873 head of cattle entered from twenty different states and Canada. While the east supplied the greatest numbers, the middle west swept the highest honors.

Fine Exhibition Grounds.

Again, the 1916 show was greatest in the completeness of its equipment and the manner of housing. The Eastern States Agricultural and Industrial Exposition did its work well. The new buildings were so well adapted to the purposes of the show that they deserve brief description. Those dairy and live stock men who have been of the opinion that the stock yards pavilion at Chicago is the only building in the country suited to a really great cattle show must now reckon with the new Springfield plant. The Eastern States Exposition grounds contain about 170 acres. The central building is the Coliseum with a judging ring 200 feet long and 100 feet wide, covered by an arched roof 68 feet high. Surrounding the judging ring are comfortable banked seats for 5,600 persons. In the four corners of the building, arranged under the seats, are a convention hall, a domestic science kitchen, a lecture hall and a display room. All of these rooms were in constant use throughout the show.

At one side of the Coliseum are the two permanent cattle barns with comfortable accommodations for 1,200 head of cattle. On the opposite side of the central plant is machinery hall, with over 70,000 square feet of floor space. A fifth large permanent building was given over to the exhibits of boys' and girls' clubs. This was a new and intensely interesting feature of this year's show. The displays made by the club members, and the interest manifested, indicate that every great agricultural show in the future must provide for the junior farmers and farm girls as well as for the older heads.

The Cattle.

The cattle, of course, were the main attraction. It is the rivalry for the high honors that brings men and their cattle from the four corners of the country. It is the gradual improvement of the dairy stock as economical producers of milk, cream, butter and cheese that makes these great shows worth while. The sleek, well-kept, well-groomed animal carries a universal appeal. Combine this with production performance that enables an animal to pay for itself several times over in merchantable products and you have an animal that wins the admiration of all classes. There is no class of live stock that is held as close to utility standards as dairy cattle, and this utility value is the keynote of the dairy industry. The close student of breed types has seen some striking changes in the "big show" winners in the past ten years. All breed associations are

placing premiums on production records and making them an increasing factor in selective breeding. This practice brings rapid changes but so long as economy of production increases there is little occasion to worry about breed types and characteristics. While complete awards are not available at the time this is being written, a brief review of the cattle by breeds is of interest.

The Jerseys were represented in greater numbers than any other breed, and were perhaps a bit more popular with the visiting crowds. The Jersey breeders are the original breed boosters, and their efforts would bring results even with less worthy animals. The running of the Jersey special train from Waterloo, Iowa, to the big show, and the attending advertising of the \$250,000 worth of Jersey stock was a bit of publicity work that will keep other breed associations busy for a time. But these boosters are also able to produce "the goods." The bright individual star of the show was the World's Champion Long Distance Cow, Sophie 19th of Hood Farm. She was awarded a special banner by the National Dairy Show Association in recognition of her notable demonstration of dairy production. Sophie has a six-year record that makes her supreme in production. In six years she has produced a total of 75,920 pounds of milk, making 5,216 pounds of 85 per cent butter. She was hailed as the queen of the show. The Hood Farm refused an offer of \$25,000 for her during the show and asserted that it would not sell her for less than \$50,000. There were 272 Jerseys entered in 24 herds from 14 different states.

Some Good Stock.

The Guernseys ranked second in numbers. There were 202 head, comprising 21 herds from 10 different states. The east and west were proportionately represented in entries, but the west appeared to have a wide margin on quality. The W. W. Marsh herd of Iowa, had a number of animals that seemed destined to carry off the top honors. Charles D. Cleveland, of New Jersey, and F. P. Frazier & Son, Massachusetts, promised to give Marsh the strongest competition.

No single dairy breed has made any greater progress in the past few years than the Ayrshires. From a comparatively few scattered herds, their reputation has spread rapidly, and they are now among the leaders. They were third in point of numbers at this show and ranked with the first in popularity. There were 154 head entered in the show, making up 16 herds from eight states, principally the northern states and Quebec. The Canadian province showed some fine quality stock. The Ayrshire breeders are keen promoters and they backed their favorites with an enthusiasm second only to the Jerseys. A fine example of the spirit back of this breed is found in the fact that Mr. Charles Jenkins, of Pennsylvania, piloted a party of 60 Ayrshire fanciers from his county to the show.

A question frequently heard was, "Where are our strong eastern Holsteins?" Coming within easy reach of the New York and Pennsylvania Holstein stronghold it was expected that this breed would make a record-breaking showing. But entries numbered only 147 head from nine states, and five of these were west of the New York state line. There were only three herds from New York and none from Pennsylvania. Even Ohio had but one herd of Holsteins there and Michigan none. As with the Guernseys, the west appeared to have the cream in quality.

This sturdy breed holds its place among the specialized dairy classes. Six herds from five different states showed 98 head. Ohio and Wisconsin were in the fight for top honors, with the New England states closely following.

The machinery and dairy exhibit



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was too extensive for detailed description. Past shows have brought out a larger showing of heavy creamery, ice cream and skimming station equipment, but none has shown a more complete or better displayed line. The exhibit literally covered the whole line of dairy equipment, from the milking stool and milk pail to coolers, pasteurizers, bottling and capping machines and the delivery truck; from milking machines to milk cans, can repair machines, sterilizers, etc., from separators to churns, cheese vats and power ice cream freezers; from barn plans to fully equipped dairy plants. There were the newest things in feeds, utensils, barn equipment and machinery, all attractively displayed with attendants willing and anxious to explain and demonstrate all features of interest. The machinery exhibit was a fine demonstration of how the inventor and manufacturer have kept pace with the dairy breeder in the development of the industry.

Dairy Products.

The dairy products show was the best ever held by the association. There were more entries, and they came from a larger area than ever before. There were 36 entries of creamery butter made from whole milk, coming from ten different states. There were 56 entries of creamery butter from gathered cream, coming from 21 states. Dairy butter showed 22 entries from 12 states. N. C. Nelson, Grove City, Pa., won the gold medal on whole milk creamery butter with a 96 score. E. A. Gudvangen, Hanlontown, Iowa, won first on creamery butter from gathered cream with 95 3/4 score. Mrs. P. H. Robinson, Egypt, Mass., won first on dairy butter, with 95 score. Jesse W. Cobb, Van Buren county, Mich., won first of the Michigan entrants in creamery butter, with a score of 94.5.

There were 27 entries of American Cheddar cheese, H. M. Biberstein, of Oregon, winning first with a score of 98 1/2. Filex Richards, Randolph, Pa., won a second with 96 3/4.

Pennsylvania took the top honors in the milk show which was the largest ever held in connection with a dairy show. There were 143 entries comprising 572 bottles of milk and cream, coming from 18 states. A special distributor's prize for city milk distributor whose producers (not less than 10 entries) showed highest score on market milk, was won by the Supplee Alderney Dairy, of Philadelphia, with an average score of 93.1. Heston J. Smith & Sons, New Hope, Pa., won the gold medal on market milk with a score of 98. Benjamin Supplee, West Chester, Pa., took the silver medal with 97.9.

Students' Judging Contests.

There were 18 agricultural college teams entered in the students' judging contests. The University of Nebraska team carried off the honors, winning the National Dairy Show Association trophy and the Hoard's Dairyman trophy. W. F. Roberts, of that team, won the \$400 DeLaval Sweepstakes Scholarship, the \$400 Iowa Dairy Separator Scholarship, and the National Dairy Show gold medal. The \$400 Jersey Scholarship was won by C. H. Clough, of Massachusetts Agricultural College, and the Holstein Scholarship of equal amount by Joseph Lee, Jr., of North Carolina College of Agriculture.

Educational Features.

The special educational features were many. The United States Department of Agriculture maintained a demonstration herd of nine cows throughout the show, recording records of cost of feed, production, cost of production and profit or loss over cost of feed. The herd included a range from an ordinary scrub, showing a loss of 5.1 cents per day, to a high grade yielding a profit over feed of 45 cents a day. The department also exhibited models of dairy buildings, including a dairy barn, a separator house, a milk house and forms for building a concrete silo. Lectures were given daily by department officials on the various phases of

the dairy industry. The experiment stations of all the New England states had demonstrations of their various lines of work. There were agricultural college exhibits showing activities in various phases of dairy work.

The woman's side of the dairy farm work, and more particularly the housekeeper's use of dairy products was represented in a series of domestic science demonstrations. A complete kitchen equipment was provided and daily demonstrations were given by representatives of the domestic science departments of New England and New York colleges. The following program gives a suggestion of the extremely practical work done. The following subjects were taken up on successive days with demonstrations of the operations and samples handed out to the visitors:

Salads and Desserts, by Maine Agricultural College.

Milk Soups, by New York College of Agriculture.

Children's Diets, by Massachusetts Agricultural College.

Bread and Rolls, by R. I. Agricultural College.

Salads and DeDserts, by Maine Agricultural College.

Boys' and Girls' Club Worp.

The growth of boys' and girls' club work was attested by the exhibit at this show which filled one entire building and a large tent. Work demonstrated covered market garden projects, corn, potato, pig and calf growing projects, garment making, canning, poultry raising, bread making, etc. In the judging contests, Pennsylvania and New Jersey were prominent winners. The Pennsylvania team consisting of Henry and Ralph Body and Edwin Shearer, of Bucks county, won first in poultry judging. Henry Body won the Sweepstakes prize in this event. The Morris county, N. J., team, consisting of R. Savage, D. Hulbert and A. Sheerin, won first in pig judging, Albert Sheerin taking the Sweepstakes prize. The top prize in judging dairy cattle was won by Merrill Tait, of Mercer, Pa. The prize was a pure-bred Holstein bull calf.

A. J. ANDERSON.

CHAMPION AWARDS AT NATIONAL DAIRY SHOW.

Following are the champion awards for the different breeds shown at the National Dairy Show at Springfield, Mass.:

Guernseys.

Senior champion bull, 2 years old or over, Hayes Cherub II, owned by W. W. Marsh, Waterloo, Iowa.

Junior champion bull, under 2 years, Sunnybrook Aristocrat, Charles D. Cleveland, Eatontown, N. J.

Senior champion cow, 2 years old or over, Princess Bergere, W. W. Marsh. Junior champion cow, under 2 years, Hayes' Moss Rose, Marsh.

Grand champion bull, Lady Smith's Cherub, Marsh.

Grand champion cow, Princess Bergere, Marsh.

Brown Swiss.

Senior champion bull, 2 years old or over, Merney's 2nd Son 3280, H. W. Ayers, Honey Creek, Wis.

Junior champion bull, under 2 years, Merney's Nephew 5123, H. W. Ayers.

Senior champion cow, 2 years old or over, Reuben's Ruth 6580, Hull Bros., Painesville, Ohio.

Junior champion heifer, under 2 years, Vera of Lakeview 7888, Hull Bros.

Grand champion cow, Vera of Lakeview 7888. Grand champion bull, Merney's 2nd Son 3280.

Ayrshires.

Senior champion bull, 2 years old or over, Strathglass Gold Chink imp. 16801, John A. Ness, Auburn, Me.

Junior champion bull, under 2 years old, Cavalier's Lord Rosebery 17956, Adam Seitz, Waukesha, Wis.

Senior champion cow, 2 years old or over, Auchenbrain Hattie 6th 39380, Iroquois Farm, Cooperstown, N. Y.

Junior champion cow, under 2 years old, Nona Spencer, 39923, Galloway Messer Farm, Waterloo, Iowa.

Grand champion bull, Strathglass Gold Chink imp. 16801.

Grand champion cow, Auchenbrain Hattie 6th 39380.

(Continued)

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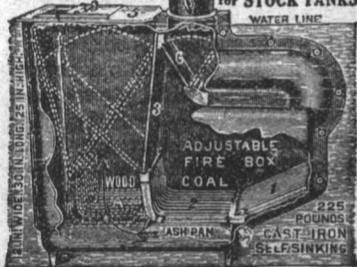
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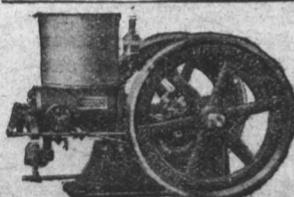


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Magazine Section

LITERATURE
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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

BRACE up, kid," said Sadie. "It'll be six o'clock before you know it." She mopped the cold, moist forehead of No. 12 with a four-cent cotton handkerchief and spoke softly. No. 12 leaned indifferently against the window-frame. The air came in reluctantly and sluggishly and was hot, but it was fresher than the air in the packing-room. A thin, pale face lifted itself to Sadie's and tired eyes returned thanks for the ministrations. "I'd 'a' been all right if he hadn't picked on me," said No. 12. "He's always pickin'. Ain't it hot?"

"Mister 44" By E. J. RATH

(First Installment of Our New Serial)

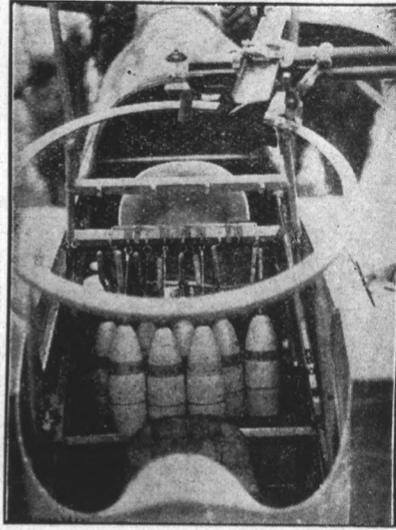
"Some hot," assented Sadie. "But No. 12 wistfully. "But when he starts don't you care, kid. As for him—" at me I get all fluttered. Gee, I wish she nodded toward the center of the room—"what do you care if he does it was six!" The packing and delivery department of the Challenge Shirt Company was filled with a smothering sultri-

ness. The odor of newly made garments seemed to stifle the air's feeble life. Thirty girls worked listlessly, eyes on the clock. They were slowing down, like tired runners near the end of a long journey. Flannel shirts did not disappear into pasteboard boxes so rapidly as an hour before. Neither did boys who carried away the boxes move with forenoon alacrity. The symptoms of a day nearly spent were unmistakable. "You, No. 18!" The voice was petulant and shrill.

WORLD EVENTS IN PICTURES



Heiress will Devote Time and Money to Uplift Convicts.



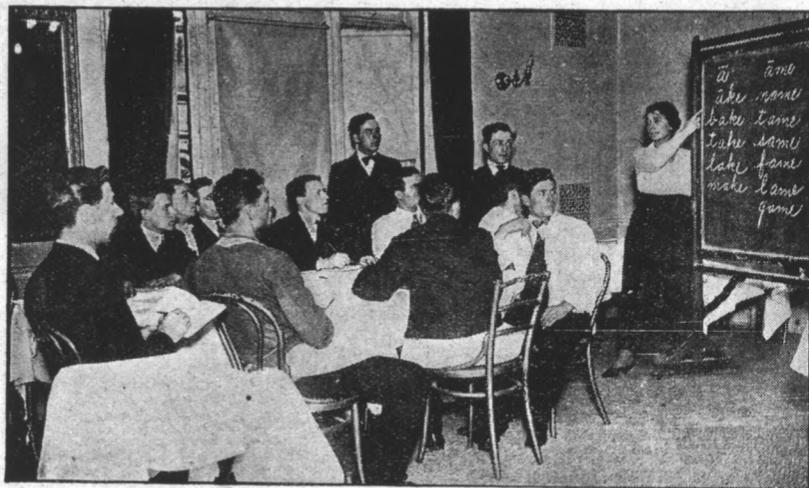
Chamber of a Warplane Loaded with Shells.



The Kicker on whom West Point Depends.



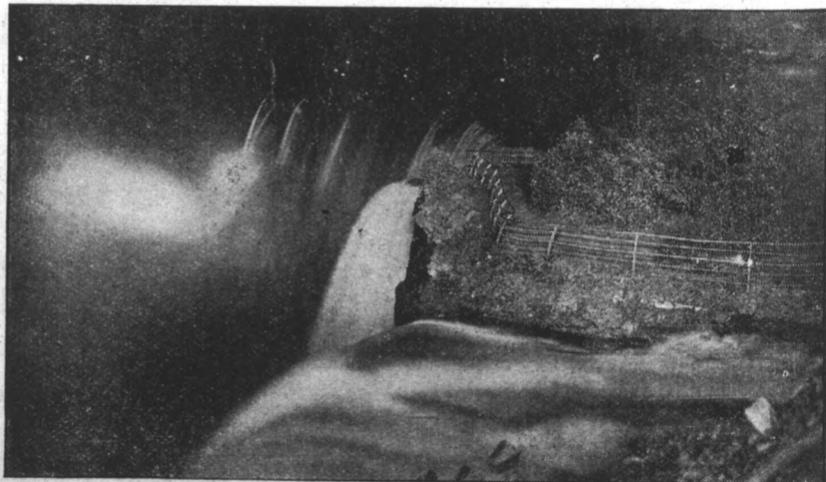
Coat of Broadcloth with Collar and Cuffs of Fur.



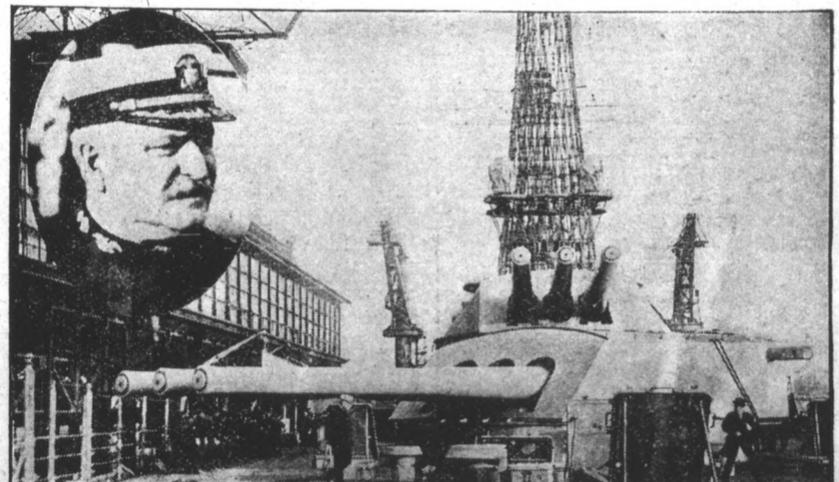
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It came from a collarless man who wiped his face as he talked. He was little and young, with a beaklike nose, a pallid skin, and faded eyes that watered unpleasantly. Exasperation and futility struggled within his narrow breast. Sadie turned slowly and surveyed him with calm eyes. Eighteen was her number.

"Get to work, No. 18," croaked the little man. He tried to be menacing, but the pose signified no menace to Sadie.

"I was tryin' to do something for No. 12," she said in an even voice. "The poor kid's about in."

"You get them olive drabs into them boxes," retorted the little man. "No need for you to loaf because No. 12 is loafin'."

"You win," observed Sadie placidly. She went to her place at the long table and began putting shirts into boxes with skilled but deliberate hands. The little man glared. It was a full minute before Sadie spoke again, and then it was like an addition to her last words.

"No. 12'd be doing this, too, if you'd leave her alone. The heat didn't get her; it was the pickin'."

The little man, who had turned to rasp at a laggard boy, whirled about. "Who's boss here?" he demanded.

"Too hard for me," commented Sadie as she slid the cover on a box and lifted her eyes for a few seconds to contemplate the questioner.

"I'm boss."
"You certainly are a grand question-and-answer department, Mr. Ferguson."

There was faint emphasis on the mister. It was not lost upon the packing department. Momentarily hands that were packing away shirts paused. Two girls whispered. When Sadie and the superintendent battled the output of the Challenge Shirt Company marked time in its march to the consumer.

"You know the rules—work and no back talk," snapped Ferguson. "You lookin' for a fine?"

Sadie made no answer, but inspected an olive-drab critically.

"I say, you want to be fined?"
"Leap to it," advised Sadie.

"Twenty-five cents," said Ferguson as he turned for a tour of table-inspection.

Idle hands were galvanized into motion.

Sadie smiled tolerantly. It was not in her nature to cry when she was hurt. Gaily she put olive-drabs into boxes. But she was hurt.

There never was a time when a twenty-five-cent fine failed to hurt a seven-dollar-a-week envelope. A ten-cent fine was a severe loss; a quarter fine achieved the dignity of financial embarrassment. It amounted almost to involuntary bankruptcy when you were putting fifty cents a week into a savings-bank and twenty cents into a sick-benefit fund.

Just why Sadie subscribed to the sick benefit she did not clearly know. She was never sick, but other girls were sick, often, and it seemed like a good idea, for the twenty cents helped somebody, if not Sadie.

Six o'clock was near. Sluggard hands, whose owners suddenly feared Sadie's fate, worked with imitation energy. Sadie, however, kept her even pace; she never hurried, yet she could put more shirts into more boxes in a nine-hour day than any of her sister workers.

Her manner gave no trace of the little tragedy that was bringing her day to a close. She hummed softly. Twenty-five cents meant staying away from the movies five nights. It was a blow, but she would managed to survive it.

She did not notice that Ferguson had paused again at her table until he leaned across it and said tentatively:

"Sad, Sadie."

"No. 18," she corrected.

"Now, listen, Sadie."

"Line's busy."

"Quit kiddin'," he said with an uneasy laugh. "You and me don't want to be bad friends."

"Who said so? Why not?"

Sadie's eyes widened in affected surprise as she bestowed a measuring glance across the table.

Ferguson leaned his elbows on a pile of shirts and looked up at her.

"Listen, now," he protested. "I ain't mad, Sadie. But you had no call to talk back. It's against rules. I gotta have discipline, y' know."

"Then why don't you get it?" asked Sadie smoothly.

Ferguson winced, frowned, and began again.

"I just had to fine you after what was said. Didn't I?"

"Sure; for the public good."

"Lemme tell you something, Sadie. I can forget to send a fine-slip to the desk."

"I bet you can," assented Sadie cordially.

"And I—"

"Only don't."

"And now, Sadie, tie a can on that stuff. I was goin' to say—"

"If you forget to turn in the fine I won't, Mr. Ferguson."

Now she paused in her task of stacking up shirts, lifted one from a pile, shook it out, and tossed it aside.

"Thirty-eight label on a thirty-six," she observed.

Ferguson examined the garment critically.

"Guess you're right," he commented admiringly. "You're a wonder on catchin' wrong sizes, Sadie."

"Uh-huh," said Sadie as her eyes rested appraisingly on the person of the superintendent. The glance conveyed no meaning to Ferguson.

"About that fine," he resumed. "Wanta know how not to pay it?"

"No. Can't upset my bookkeepin' now; I got it all set down."

"Y' know that picnic, Sadie?" Ferguson's voice was wheedling.

"Sure. I read the poster."

"You hadn't ought to have turned me down like you done. But it ain't too late yet."

"Still a chance to get in under the wire?" queried Sadie.

"You bet there is! And no fine-slip neither—if you go."

"Sounds easy," she commented. "Say the word and save a quarter—just like that!" And she snapped her fingers.

Ferguson nodded.

"No, Mr. Ferguson," she said slowly, shaking her head. "It wouldn't be fair to the quarter to play that kind of a dirty trick on it."

Ferguson gulped and hesitated, then returned to the attack.

"Listen, now, Sadie; just listen! Will you?"

"I did listen—plenty. I got an earful. Now you listen: The company saves a quarter on Sadie this week. It can't lose that quarter if it tries. If it's in my envelope Saturday night I'll call a special meetin' of the board of directors, hand it over, and notify the stockholders there's a new dividend comin'. That quarter's got a life sentence, Mr. Ferguson."

The superintendent met Sadie's steady gaze and held his ground, for the way for retreat with honor was not yet open. He was gurgling a sentence in his throat when Sadie asked suddenly:

"You're a thirty-four. Yes?"

"I don't get you. You mean—"

"Chest."

Ferguson shifted his weight to the other foot.

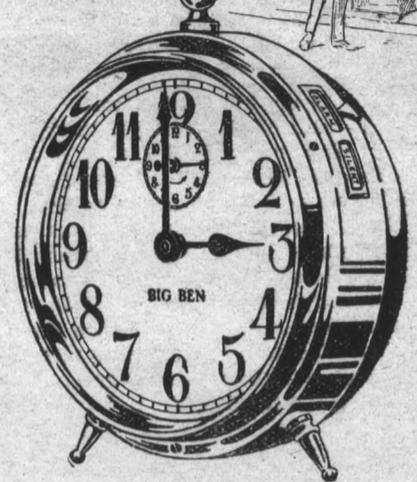
"I wear thirty-sixes. I can wear a thirty-four but—"

"You're wearin' a thirty-four now, and it's flappin'," she interrupted. "You mean you can wear a thirty-two. Don't kid Sadie. I got an eye for sizes; you told me so yourself."

The superintendent straightened his body stiffly.

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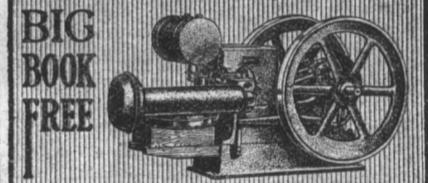
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"Fourteen collar?" queried Sadie sweetly.

Ferguson began to stutter.

"And a six-and-a-quarter hat," she added, nodding. "Correct me, Mr. Ferguson, if I get you wrong."

She spoke placidly, even solicitously, but there was a telltale glint of hardness in her gay eyes. A hush had fallen upon the packing department, broken only by the sound of Sadie's voice.

"I've got nothin' against that picnic, but I've got a lot against you, Ferguson." Sadie had dropped the accented mister.

"I wouldn't insult a movie by walkin' in with you. You've picked on me because I won't go. Not bein' a man, I expect that's your privilege. You've been lookin' for a chance to fine me; watchin' for me to break a rule. The whole room knows it.

"Well, you got your chance. Shake hands with yourself. You're gettin' another chance right now, too. It's worth half a dollar to speak a piece to you. I'm speakin' it.

"You want my reason for not goin'? This is it, Ferguson: You ain't fit to be seen with me. Maybe that sounds proud. All right; I am proud."

Sadie paused for an instant. The superintendent stood in awed fascination.

"Even if you were decent, Ferguson," she went on without a trace of excitement, "you're not big enough to take me anywhere. That's reason enough to stand by itself. You're a thirty-four—scant. I'll allow that, but it's charity.

"Anything over a thirty-two shirt on you is throwin' away goods and boostin' the high cost of livin'. You're undersized, mind and body; you ain't healthy to look at. You're drivin' me to smoked spectacles.

"You're just naturally mean and little. Now, you keep away from me except when you got orders to give. Next time you speak to me I'm No. 18. I don't want to spank you, but if I get any more 'Sadie' from you I might have to.

"You can put another quarter on that fine now, and maybe they'll make you president of the company for reducin' operatin' expenses."

Sadie hesitated; then leaned forward across the table and said with terrible distinctness:

"Do you know what kind of an insect you are, Ferguson? You're a shrimp!"

Ferguson, like a man dazed, backed slowly away from the table, fell over a stool, sprawled for an instant on the floor, and then made a dash for the cutting-room. The packing department, uncertain whether to laugh, cheer, or utter cries of astonishment and dismay, did none of those things, but resumed the business of putting shirts into boxes.

Sadie liked that word "shrimp." She never saw one, being an inland girl, but she knew instinctively that a shrimp was little and very much like Ferguson. Anyhow, Sadie was sure it was some kind of an insect.

She had borrowed it from the vocabulary of a ranchman, a person in whom she had taken immediate and tremendous interest. He had come one day to order a gross of olive-drabs for the ranch-hands out in Montana. Sadie had been called in to sort sizes.

Olive-drabs from that day had had a peculiar fascination for her. Cowboys wore them, she learned; so did miners and prospectors, and even "swells" who hunted and fished just for fun. Olive-drabs spelled adventure for Sadie—and outdoors. That after all, was the main thing—outdoors.

"What sizes?" Sadie has asked the rancher.

"Forties up to forty-sixes."

Sadie's eyes had begun to glow. "Cowboys must be easy to look at," she commented. "Want a few thirty-sixes?"

"No shrimps in my country, sister," said the rancher. "Do I look like one?"

"No-o," admitted Sadie. "You're kinda strainin' the buttons on that forty-two you're wearin'."

She treasured shrimp. Every time she looked at Ferguson the word popped into her mind. To Sadie it was more than merely descriptive of her boss. It became a unit of size. She standardized men according to it.

A shrimp was the smallest possible—a sort of No. 1, Triple A. Then came the peewees, and after the peewees the sparrows. None of them got to be men until they attained Sadie's minimum, forty-inch chests and sixteen collars.

They might go as far beyond that as nature willed and still please Sadie. She had no maximum.

Ferguson was still in the cutting-room when the hands of the packing department clock touched six. A gong rang, and thirty girls, in various stages of languor, turned toward the locker-room. Sadie walked over to No. 12 and patted her shoulder.

"Feelin' better, kid?" she asked. No. 12 nodded; then said in an awed whisper:

"They all heard you say it. They're passin' it round now among the drivers. What's a shrimp, Sade?"

"A thirty-four, deary."

Smiling, Sadie went to the locker-room. She was in a hurry to get outdoors. She wanted to breathe. Something seemed to fetter her lungs, even in the big room. She wanted space and sky and open places—as much of the big outdoors as she could find in Buffalo.

Bigness and outdoors occupied the same pigeonhole in Sadie's mind. She worshiped both. Big people were her people; outdoors was her place, even if only a dream place.

Big men were outdoor men; if they chanced to be elsewhere, they were misplaced. True, mere bigness was not all that Sadie worshiped; but it was a fundamental, a foundation on which she reared her ideals.

Because she came from an Ohio farm to a city factory she had not renounced her gospel. The farm was out under the sky; but it was a little farm, set close to a little village. Better than the city, perhaps, as Sadie might have admitted; but there are livings to be earned in this world, and hers was one of them.

The farm was outdoors at its smallest—a sort of shrimp outdoors. The city was big, she acknowledged. But it was the wrong kind of bigness—a shut-in bigness. It was man-made. Sadie wanted the kind that was God-made.

Sadie was big herself. Five feet eight she stood, bare-footed and with her hair down. There was a mark on the door in her hall bedroom to attest it, put there by No. 12, who had to stand on a chair to do it.

Sadie was glad she was big. It was even better than being handsome, and she was both. Any time you saw Sadie she was worth contemplating. Just for a moment contemplate:

Five feet eight, as specified. Straight and supple, like a sapling, but not so slender. Sadie was rounded and full-bosomed. She was a forty herself. The penny scales said that she weighed one hundred and fifty-four pounds, and they spoke wisdom. If you asked her her age, she said she was twenty-four, and she spoke the truth.

Why she had a head of classic shape must remain a mystery. You couldn't prove eugenics by Sadie. There was nothing classic about the heads of the folks back in Ohio, nor did they share Sadie's bigness. She topped her father by two inches, while her mother was only shoulder high.

Somewhere in the long ago there may have been ancestors with classic heads and stalwart bodies; if so, she never heard of them. She remembered only her grandfather, whose head was level and honest, but not classic. Sadie's brow was broad and serene.

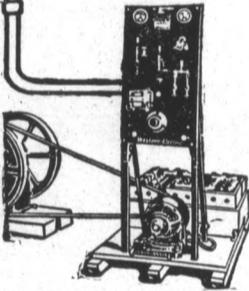


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AUTUMN LEAVES.

BY L. MYRTLE SOURS.

There is beauty of shape and of form
Blown in breeze or tossed over by
storm;

Colors rare they are there,
Always bright, always fair,
Coming down in a whirl
Blown by wind in a swirl,
Till they lie all around
In great heaps on the ground,
And you wade with delight,
Where the sun shining bright,
Lights the leaves like a blaze
Mid the rich autumn haze.

They are brown, they are green, they
are gold—

Shades of color that cannot be told—
Brightest scarlet that ever was seen
Mingled in with the gold and the
green.

Her eyes were gray, and they also
were serene, for serenity and Sadie
were interchangeable terms. Through
those calm and steady eyes she looked
upon the world curiously, frankly, and
unafraid, like a child.

She had a nose as large as a 154-
pound girl ought to have, beautifully
straight in the bridge and delicate in
the nostrils. It ran generations back
of the Ohio farm.

Her mouth was ample in size, firm,
good-natured, and humorous. But it
could be serious, too. And whatever
else it was, it never failed to be sincere.

Her lips were full and red. Sadie
could curl the lower one in fine scorn,
although there was no harm in her.
Her chin showed more than good
modeling; it revealed courage and independence.

Newly cast bronze possesses the only
color corresponding to Sadie's hair.
The quantity of that hair fairly appalled
her, for she had to do it up herself,
seven dollars a week leaving nothing
for the wages of a maid. It fell below
her waist when she unloosed it, ravishing
to look at, the very dickens to comb.

Sculptors made statues of Juno because
they never met Sadie. She was
not Juno's little sister; she was her
twin. Nobody ever called her pretty;
it would have been ridiculous. She
was merely handsome.

And healthy! Sadie bloomed perennially,
like a gorgeous flower, all in
whites and pinks and creams. Even
the factory could not stop her from
blooming.

The influence of environment may
be demonstrated by scientists in a million
ways, but not by Sadie. Like
eugenics, it was a doctrine that fell by
the wayside when you looked at her—
which you usually did. The factory
might put its mark on the Shrimp and
on No. 12, but not on Juno's sister.

If you have paid attention to what
Sadie said to the Shrimp—and how
she said it—you suspect something.
Much book learning was not hers. In
fact, very little of it had chanced her
way. Her mind was all right; it was
quick, alert, and astonishingly retentive—
a very sane and normal mind. It was
rather philosophic, too; and it had a
clean, direct way of getting to the
point of things. It played no tricks
on Sadie; it gave no illusions. Above
all, being her mind, it could not be
else than serene.

She knew that book-learning was a
strange land, only to be viewed by her
from the edges, for she had neither
time nor resources to explore it. She
had regrets, of course, but she gave no
time to sorrow or brooding.

She accepted her limitations, but always
with a reservation—"some day!"
There was honest raw material in that
mind of Sadie's; if it had not been
used, at least it was unspoiled.

The row with the Shrimp had not
disturbed her. She had almost forgotten
it as she walked out of the factory.
Probably she would have dismissed it
if a clerk at the office window had not
handed her a slip as she passed. The
slip read:

No. 18, Packing Dept., 50c fine for
violation of rule 8. Reported by Ferguson,
Supt.

"Well, I had him right," said Sadie
as she crumpled the paper.

No. 12 sidled up to her on the street
and whispered indignantly:

"Listen, Sade! No. 22 says she's
seen shrimps and they ain't insects,
like you said."

"I should be anxious, honey," said
Sadie.

CHAPTER II.

Sadie's Friday Jinx.

Even a girl without a beau cannot
sit in a seven-by-ten room on an early
September evening, no matter if she
did squander half a dollar in telling a
man he was a shrimp. So, after she
had eaten her dinner, Sadie Hicks
wandered out into the street.

That Sadie had no beau was beyond
the understanding of the girls in the
packing department, although it was
clear as crystal to her. Of course, it
took a big man to "go with" Sadie.
But there were big men in the factory.
Sadie eliminated them easily; the out-
door test settled them.

With the teamsters it took a little
more than the outdoor test, yet they
went with the others. They were not
for her. She was not conscious of
holding herself superior to them, she
simply did not need them in her
scheme of things. And when Sadie
did not need anybody, that person
who did not soon sense the fact was
a dullard indeed.

When she walked of an evening,
however, she was not alone. She had
an invisible escort. His name she did
not even know. He was merely her
ideal. He was constantly by her side,
walking on the street, sitting at the
movies, standing at soda-fountains, rid-
ing on trolley-cars.

Sadie took a lot of comfort out of
him. For one thing, she did not have
to share him with anybody. He was
all hers. None of the other girls could
even so much as look at him. She
held him incommunicado in the prison
of her imagination.

He was a creature of many person-
alities, but these were merely his outer
cloaks. Underneath he was always
the same.

That was one charm of having an
ideal for a companion. Sadie could
dress him as she pleased and make
him what she willed, but she always
knew that, in any guise, he was the
same sturdy self.

He was big, of course. He was
brave and he was kind. Sometimes he
was handsome, sometimes ugly—but
always rugged.

Whether he was rich or poor she
did not know nor care. She never
pried into his purse. He and Sadie
were tremendous friends.

So they walked the crowded pave-
ment together, the factory, the boxes
of shirts and the Shrimp forgotten.
They paused to study a lithograph in
front of a movie palace.

Sadie and her ideal moved on—
quickly. On the next block they paused
again. Sadie shrugged her broad shoul-
ders and led the way again.

Presently there was a long pause;
another poster caught Sadie's eye
from the opposite side of the street.
There were men and horses, lariats
and six-shooters.

"Montana, an adventure by Dick El-
lison!" whispered Sadie.

She knew "Dick Ellison." She had
a vivid memory of the first time he
ever galloped across a screen. The
second adventure, too, was stored
away in her mind. She had followed
him through canons, across swollen
rivers, up the mountainsides, wherever
there were thrills and perils and tasks
for big men to do.

Was she to miss the third adven-
ture? Sadie opined not.

It was not until she laid her nickel
at the threshold of the little doorway
in the pane of glass that Sadie remem-
bered something else—Rule No. 8 and
the fifty-cent fine. She hesitated, for
she had resolved—

The nickel disappeared and a red

ticket popped out through the opening.
Sadie sighed, but not sadly. She took
the ticket.

"It wasn't exactly my fault," she
murmured as she passed inside. "That
girl is awful quick at grabbin' nickels."

You have doubtless seen the third
adventure of Dick Ellison and have a
tingling memory of the stage-coach
that lurched so close to the edge of the
precipice; therefore, it is unnecessary
to tell what Sadie saw. Her ideal took
his seat beside her, of course. That
it was occupied by the corporeal per-
son of a gum-chewing girl was no dif-
ficulty at all; the girl did not even
know that Sadie's ideal was there.

In the middle of the first reel a cur-
ious thing happened. Sadie's ideal left
her side and became suddenly visible
upon the screen. No, he did not be-
come Dick Ellison. He was still a per-
son without a name. But Sadie knew
him in an instant, for all that and she
smiled softly.

It was not a new experience for
her; he had done the same thing often,
and always without warning or expla-
nation. She knew he would come back
to her when the machine ceased to
click, for the movie people were mere-
ly borrowing him for a little.

Tonight his hairy chaps proclaimed
him a cowboy. He rode like the wind
and shot like a rapid-fire automatic.

"A good forty-two," murmured Sadie
as she watched him.

Faithful always, he was by her side
as she walked out.

"You did fine tonight," she whisper-
ed to him.

You may think he was on the screen
again when Dick Ellison's third ad-
venture once more began to unwind.
But he was not. He had left with
Sadie. If you stayed to see the show
a second time you saw the same figure
it is true; and he did the same things,
without a hair breadth's variation.

But the soul had gone out of him,
and that was something you could not
see. Only Sadie could, for he was her
ideal and not yours.

Back in the seven-by-ten room Sadie
sat on the edge of her bed, braiding
burnished bronze into thick strands.
Even after the braids were finished she
sat there thinking. Although she seem-
ed to be in Buffalo, she was really in
Montana. She had been there ever
since the middle of the first reel.

Her process of thought involved
many little wrinklins of her fore-
head, occasional frowns, much pursing
of the lips, and now and then a short,
half-embarrassed laugh. At least twice
she blushed.

"I guess it's all right," she said
aloud, rising suddenly and going over
to her little table. "It's not like flirt-
ing. It's just saying hello. He won't
mind."

Sadie opened a box of note-paper,
spread a sheet on the back of a maga-
zine, and began to write. She wrote
slowly and with many pauses.

After a while she laid down her pen
and examined her work critically.
First she read it in silence; then again,
voicing the words softly, to get an
idea of how it sounded. Then, with a
vivid flush in her cheeks, she tore the
paper into small pieces.

Another sheet of paper came out of
the box and there was more writing,
with much laborious penmanship and
continuous struggle with the spelling
of words. Pauses, burdened with little
scowls and smiles, indicated where
commas ought to be, but were not.

(Continued next week.)

WHEN THE SANDMAN COMES.

BY ALONZO RICE.

The twilight drops the sunset's crim-
son bars,
And on the meadows of the darken-
ing deep
The fair moon shepherds the early
evening stars,
While baby's eyelids softly close in
sleep.

"MISTER 44."

It starts in this issue on page 433.

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REDWOOD, N. Y. DEPT. 11.

FARMERS' UNION REPUDIATES ATTACK ON PRESIDENT WILSON

ELEVENTH HOUR REPUBLICAN ATTEMPT TO STAMPEDE FARMERS INTO VOTING FOR THE CANDIDATE OF WALL STREET.

THE FARMERS' UNION, THE MOST POWERFUL FARMERS' ORGANIZATION IN THE COUNTRY, HAS UNQUALIFIEDLY REPUDIATED THE REPUBLICAN ELEVENTH HOUR ATTACK ON PRESIDENT WILSON AND THE ADAMSON EIGHT-HOUR LAW.

The opposition's plan was to place in the hands of every farmer in the United States a pamphlet attacking President Wilson and the 8-hour law, **reputed** to have been written by H. N. Pope of Texas, President of the Association of State Presidents of the Farmers' Union. Millions of copies of this pamphlet were printed and are being circulated by Republican agencies. Candidate Hughes, in his most recent attack on the Adamson Eight-hour law, makes statements which he attributes to Mr. Pope.

Luckily for the interests of the farmer and fair play in general, this under-hand attempt to foist fake utterances on the American public has failed.

The officials of Mr. Pope's Association denounce this attempt to fool the farmer, and deny responsibility.

READ SOME OF THEIR TELEGRAMS!

"Farmers Union in no way responsible for H. N. Pope's pamphlets."
(Signed) M. McAuliffe, Pres. Farmers Union of Kansas.

"I know nothing about this. Have taken no stand."
(Signed) E. L. Harrison, Pres. Farmers Union of Kentucky.

"We have not authorized publications, and have no connection with them."
(Signed) Chas. L. Wetzler, Pres. Farmers Union of Colo.

"I do not indorse it in any particular and we are not financing the circulation in any way."
(Signed) J. L. Shepherd, Pres. Farmers Union of Florida.

"No we are not supporting H. N. Pope"
(Signed) Walter Smith, Pres. Farmers Union of Indiana.

"The organization in this state has contributed absolutely nothing to the printing and circulation of this pamphlet."
(Signed) L. M. Rhodes, Pres. Farmers Union of Tenn.

AND THE END IS NOT YET!

WHY WALL STREET WANTS HUGHES!

On September 6, 1916 a "fake" telegram, signed "H. N. Pope" was sent from Fort Worth, Texas to New Orleans and from there relayed to prominent news centers. This telegram announced that Farmers' Union Officials had agreed to advise their members to hold cotton for a minimum price of **twelve cents per pound**, although these officials had said that **twenty cents** was a fair price and that **fifteen cents** was an absolute minimum.

Five days later—September 12th., Mr. Pope denied responsibility for this telegram in a telegram to the New Orleans Cotton Exchange.

The Official Paper of the Texas Farmers' Union said editorially on September 27th that—"This fake telegram cost the Cotton Farmers FIFTEEN MILLION DOLLARS IN A SINGLE DAY."

WOODROW WILSON AND THE DEMOCRATIC CONGRESS ENACTED A LAW PROHIBITING GAMBLING IN FARM PRODUCTS.

THE GAMBLERS IN FARMER'S PRODUCTS NATURALLY DON'T WANT THIS LAW ADMINISTERED BY THE DEMOCRATIC PARTY THAT ENACTED IT, BUT---

THE FARMER IS TOO INTELLIGENT---TOO BUSINESS WISE, TO BE USED BY THE INTERESTS THAT ROB HIM.

MR. FARMER:—Show Your Resentment Against the Desperation of Men Hunting for Power and a Job:—

Vote for Woodrow Wilson—The one President in a Generation Who Has Appreciated Your Problems and Has Honestly Helped You to Solve Them.

This advertisement is published and paid for by the Democratic National Committee, 12nd St. Bldg., N. Y.

"Billy" Sunday—Evangelist By E. R. RICE

FEW Americans of today have attracted a wider attention than "Billy Sunday," the subject of this sketch. He receives so much hostile criticism, so much hearty praise; so many people hate him, so many love him; he is, professionally, so sensational, but personally so modest and retiring; that it is hard to arrive at a correct estimate of him. At the present stage of his career, (he is now fifty-four), no summing up would do him justice. We must wait for the ripened results. This article will only attempt to present a picture of the man as he now appears.

The series of meetings under his direction now beginning their sixth week in Detroit, (October 15), is typical of Mr. Sunday's work. He demands before promising to come to a city that there shall be the heartiest co-operation on the part of Christian forces in that particular field. Accordingly there are one hundred and twenty churches behind the movement in Detroit, representing the most active men and societies of the city. He holds his gatherings in a place prepared for him alone. The mammoth tabernacle at Grindley Field is the largest one ever erected for religious purposes in America. It seats comfortably over sixteen thousand people. It has a choir loft to accommodate twenty-five hundred, hospital rooms, with attendants, post office, book-rooms, offices, etc., all beneath the same roof. The cost of the great structure, used for only eight weeks, is approximately fifty thousand dollars. The entire campaign, at its central point, will require an outlay of nearly one hundred thousand dollars, including the final offering for the evangelist. All this in addition to the local expenses of individual churches.

Mr. Sunday brings with him a party of special helpers—choirmaster, pianists, personal workers, bible-teachers, business managers and press agents. No detail is lacking in his organization.

Three months of preparatory work on the part of churches is required before the actual campaign begins, and it is expected that follow-up organizations will be left to care for results after the meetings close. The organization is one of the closest known, in the attention given to details. When the appointed day arrived the "big push" started with a decided "bang."

Since September 10, day after day, and night after night, crowds have filled every available seat in the tabernacle, and other crowds have vainly sought admission. On one night a week ago the writer walked around the outside of the grounds at seven o'clock. Perhaps ten thousand people were turned away that evening. On many other nights this number has been exceeded. Probably a half million mark for attendance has been reached in the past five weeks. Converts to the number of twelve thousand have been recorded.

The interior of the tabernacle is calculated with great care. There is no floor, sawdust being strewn on the bare ground. The seats are of planed lumber, firm, but not luxurious. The space is divided into sections properly marked and aisles are ample. Every seat faces the speaker's platform, which is placed out a third of the way from the front and is at least ten feet above the floor. A chair of the common wooden sort and a covered pine box for pulpit are the only pieces of furniture on the platform. No soft cushions are in evidence anywhere. Over the speaker's head is a huge sounding board, a special design by one of the Sunday party.

The center of the whole movement is Mr. Sunday—He always arrives a few minutes before the set time for his services. He is driven up to one of the doors on the Cass avenue side of the building, and, accompanied by a patrolman, goes immediately to the

platform. It is said that one or two special officers in plain clothes are always near him.

The crowd is quick to note his entrance. Nearly always there is hand-clapping and sometimes cheers as he comes. He takes his seat in the one chair on the platform and with a tense interest surveys the crowd—watching at close range one is forced to admit wonder at his quiet, retiring manner, as he sits during the moments that elapse before he speaks.

Mr. Sunday does three things—he makes his own announcements, takes the offering, and preaches. His voice

final. His face is strong, clean, and honest. It is too strong to be called handsome, too open to be called insincere. He dresses as a sensible business man and his clothes are always the acme of good taste, and all in perfect condition.

The first sentence of the sermon grips the audience like a vise. Here are a few samples taken from recent sermons: "I am, and always shall be, the sworn foe of the whiskey gang," opening the evangelist's sermon on "Booze." "Corinth was the most wicked, ungodly, idolatrous city of ancient times," from the discussion of "Today's Idols." "The theatre can be made the worst institution on God's dirt," his discourse on "Popular Amusements." From the first moment this man is in earnest and words come with explosive force, well calculated to impress a promiscuous crowd. As he proceeds he warms up. In five minutes he is sweating like a man pitching hay. If the day is a warm one his coat comes off, his sleeves are rolled to his elbows and on rare occasions his sweat soaked shirt is pulled over his head and the man wages his fight bare-armed. Perspiration runs from face, neck and hands, wets through pants and socks and drips from finger tips. In his ordinary speech Mr. Sunday is not slow, and when he comes to climaxes he goes at lightning speed. From end to end of his platform he swings back and forth; he hurls out his meanings in fistic style, and challenges his enemies to come out and fight. Sometimes in actor style he drops to the floor or leaps to the top of his desk. He often crouches and springs like a tiger and sometimes, caricaturing low natures, he cringes and fawns like a shamed, whipped cur.

Mr. Sunday uses apt illustrations, and telling anecdotes is with him a mastered art. He rouses a laugh, induces tears and incites rage at will. He gives examples from real experience or tells what others have said. His pictures of lost, wandering men, are vivid in the extreme. The language used sometimes, if told anywhere else and for any other purpose, would be called shocking. He uses real terms when describing profanity, passion, or proneness to sin. Whatever one may think of what he says one is never in doubt as to what he means. The man of the street, shop or factory understands him perfectly, and the "high-brow" can not doubt his clearness.

The impression left in the mind of an observer at close range are bound to be varied. One man recently summed them up in the following paradoxical statement:

"He shocks me. He outrages every finer sense. He degrades the pulpit. He violates all professional ethics. He outslangs the street corner bum. But after all that has been said, this, too, is true. He instructs me. He inspires me. He moves me to better things. He makes me want to be a better man."

This man is no doubt very near to the truth for all these conflicting conclusions are sure to come to one who hears Mr. Sunday.

It is difficult to trace the results of an eight weeks' campaign in so great a city as Detroit. Many will seek better ways of living. Some will become extremists in religion. No doubt people formerly happy in christian life and its "even tenor" will become discontented, not to say dissatisfied, after the rush and urge of the big meetings are over. The degree in which these results prevail will depend, in large measure, on the "follow-up" work done by churches.

The effect on civic life will be noticeable here, as elsewhere. Mr. Sunday will do much for a "Better Detroit." Perhaps the influence of this remarkable man and his work will go out to all our state.



is husky, and shows evidence of strain, as he gives in detail the expected events. He makes clear just what meetings will be held and when. If of special nature that is emphasized—in two minutes he gives a panoramic view of what is going to be. The collection, and its manner of taking it, is of great importance. To raise over a thousand dollars a day for thirty successive days as free-will offerings is a considerable record. Frequently a witicism is made, a bit of pleasantries given, or a suggestive hint. Seldom an offering is given that is not preceded by a laugh or an appreciative indication on the part of the crowd. Each usher has his section to care for in this matter and the vast audience is "panned" in two minutes. Tin pans are used as collection plates and tinkling symbols are not to be compared to jingling dishpans.

With quiet restored and unexpected things out of the way, a tense moment follows, as the evangelist stands up to preach. Twelve thousand pairs of eyes are on him and he is supremely conscious of the fact. Mr. Sunday "looks" well. Of medium built (he weighs a little over one hundred and fifty pounds), straight, athletic, compact. He impresses one as being in perfect trim for his task, and his task is that of fighting. He is combative, not of the ponderous dreadnaught type, but agile, mobile, quick to attack, to feint, to parry, to step in to a sharp



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Regulator on top of drum sends heat straight up or outward into the room as desired.

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HYTEE'S FACTORIES, Indianapolis, Ind.

Woman and Her Needs

At Home and Elsewhere

The Need of Play Spells

AMERICAN women are seldom taken to task for working too hard, but if I were to be asked what lesson the farm women of these United States need most to learn I should say, how to work less and play more. Looking over the list of women on farms whom I have known in the past and whom I know now, I can not recall one who did not always have about twice the work to do that any one woman should be expected to turn out, and who did not feel that if she didn't get all done the whole universe might be wiped out.

Various motives impel these women. With some, grim necessity drives to the undertaking of tasks away beyond their strength. Others are driven by ambition, the desire to have more and to do more than their neighbors. I have known women, by-the-way, to dip clean sheets and pillow cases in water and hang them out early Monday morning so that they might be the first in the neighborhood to have clothes on the line. Others insist on more rooms than they need when the new house is built so that they may have the show place of the township, and find themselves saddled for life with the care and expense of their upkeep.

Other women are overworked because of the selfishness of their family. Father and the children must have not only pie for dinner, but pudding or cake, doughnuts and cookies as well. And mother, because she got them in the habit of expecting too much some years ago when she was younger and stronger, finds she must overdo now to keep up the standard or suffer the sting of an unkind remark when the expected dish is missing.

It may be the selfishness of the daughters that keeps mother on the rack. Beauty demands an extra nap in the morning, and mother does not really expect help. Dishwashing and dusting are bad for the hands and cooking over a hot range is bad for the complexion. Mother is old and no one expects her to be pretty or feel rested. She is always tired and too cross to work with, so the young lady slides out of real work and devotes herself to the task of looking pretty.

As an aside, have you ever noticed that it is these same girls who fail to do their share, that do the most entertaining, with mother to cook and wash dishes after the feast?

There are women, too, who are overworked simply because they love work. A nervous, active temperament makes it impossible for them to keep quiet and they, seemingly, go out of their way to find tasks to keep them busy 16 or 18 hours out of the 24.

There is an old proverb that too much work makes Jack a dull boy, and it is one our farm women need to take to heart. As a class they need more recreation, more intercourse with the neighbors, more going about and more time to read. The woman with a narrow horizon always becomes narrow minded. In the nature of things she could do nothing else. Keeping at home with her own family, never learning other people's ways and lives, she naturally comes to think that her way is always right and that she and her family are of more importance in the world than the other fellow and his family. As a matter of fact, no way of living is absolutely right, and the man in the other way of thinking is just as apt to have the truth as you have.

As to our individual importance, just

a few moments reflection on the actions of the mourners after the funeral would show a thinker how absolutely unimportant we all are. Each one who goes out may be missed by one soul left behind, but the rest of the crowd are laughing and chatting before they leave the cemetery.

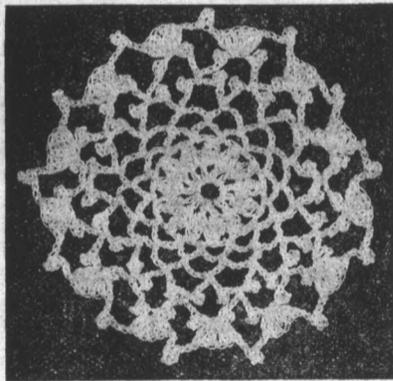
If women knew this truth and accepted it, a lot of wounded feelings and neighborhood quarrels would be wiped out. If we stopped to reflect that we are of infinite importance only to ourselves we would cease to feel slighted when someone forgets to call on us or ask after the baby or inquire about the felon we had on our finger six months ago. And to learn our true value we must mix with our fellows.

Work is of vital importance in the scheme of things, but so is play, a fact Americans overlook. For when we play we make such hard work of it that foreigners, who mix play and work better than we do, wonder how we can call the thing we are doing enjoyment. It gives you a comfortable feeling to know that every bed is made, every corner dusted and the pantry shelves stocked with "eats" in case of company unexpected. But after all, these things are not of so much importance as keeping alive. The wise woman realizes this and plans her life accordingly, thereby keeping young, living longer and being a hundred per cent more popular. **DEBORAH.**

MEDALLION IN BABY IRISH CROCHET.

BY GRACIA SHULL.

Use any desired size crochet cotton with steel hook of suitable size to carry the thread well. Made of No. 15 hard twist crochet ecru cotton, four of these medallions sewn together will



make a handsome trimming for library or buffet runner end. Made of No. 40 or No. 50 white, hard twist cotton and sewn around a circular piece of linen the medallion will make handsome doily or centerpiece trimming. Made of fine crochet cotton they may be used as trimming for underwear, arranged in solid crochet yokes, etc.

Chain 6 and join with 1 slip stitch to form a ring.

First Round.—Ch 4 for the first dc, dc 1 in ring, * ch 1, dc 1 in same place. Repeat from * until there are 13 dc in the ring, counting the 4 ch as 1 dc. Fasten the end of each round with 1 sl st.

Second Round.—Ch 3, 1 petal in first sp, * ch 2, petal in next sp. Repeat from * to end of round.

Third Round.—Slip to center of 2 ch, ch 5, sc 1 over first space, * ch 5, sc 1 over next sp. Repeat from * to end of round. Slip to center of 5 ch.

Fourth Round.—Same as 3d except

there are 7 st in ch. Slip to center of 7 ch.

Fifth Round.—* ch 7, form picot, repeat once more. Ch 3, sc 1 over center of 7 ch. Repeat from * to end of round. Slip to center between picots.

Sixth Round.—Same as 5th.

Seventh Round.—Ch 3, dc 5 in center st between picots. Ch 7, form picot, ch 3, * dc 6 in center st between next 2 picots, ch 7, form picot, ch 3. Repeat from * to end of round. Fasten off.

GREEN TOMATO RECIPES.

BY MRS. DALE M'MASTERS.

Green Tomato Sauce.—One peck of green tomatoes, one head of cabbage, 10 large onions, one large head of celery, two green peppers, two pounds of brown sugar, one tablespoon of mustard seed, three quarts of vinegar, and salt to suit taste. Cut up the tomatoes, sprinkle with salt and stand over night. Drain off in the morning and put all through a food chopper and boil one hour.

Green Tomato Mince.—Take four quarts of chopped green tomatoes and two tablespoons of salt; let stand two hours, then drain. Cover with cold water and boil two hours, then add two quarts chopped apples, two pounds of seeded raisins, chopped, two cups of chopped suet, four cups of sugar, one pint of molasses, one pint of cider vinegar, half pound of citron, two teaspoons of cinnamon, one teaspoon of nutmeg, one teaspoon of cloves. Cook a short time more.

Green Tomato Pickle.—Half bushel of green tomatoes, half peck of onions, two cups of salt, nine green peppers, one teaspoon of ground cloves, one stick of cinnamon, teaspoon of ground mace, half cup of whole peppercorns, two tablespoons mustard, five pounds of brown sugar, three quarts of vinegar. Slice onion and tomatoes, sprinkle the salt over them and stand over night. Drain and place in a large sauce pan with peppers, from which the seeds have been removed, then add the spices, sugar, mustard, and vinegar and cook one hour. Seal when cold.

Green Tomato Preserves.—Take eight pounds of green tomatoes, cut into pieces, four pounds of sugar and tablespoon of ginger. Cook down until thick and jelly-like. Fine.

Mustard Pickle.—Twenty-four small cucumbers, one quart of small onions, two cauliflowers, two quarts of green tomatoes, six green peppers, one-half pound of mustard, half ounce turmeric, three-fourths cup of flour, one cup of sugar, three and a half quarts of vinegar, salt. Cut such of the vegetables that require it, into small pieces, adding those that are small enough without cutting, and stand over night in brine sufficiently strong to float an egg. In the morning scald all together and drain thoroughly. Mix the mustard, turmeric, flour and sugar to a smooth paste with one pint of vinegar, and add to the three quarts of vinegar which has been brought to the boiling point. Cook 20 minutes, add the vegetables and when cold place in jars and seal.

East Indian Conserve.—Take eight pounds of green tomatoes, two pounds of seeded raisins, eight pounds of sugar, two ounces of ginger. Boil down thick.

Cotton lint, melted tallow, beeswax or soap should be used under and around the fingers before beginning work at which the fingers are apt to become soiled. This protects the nails, is easily removed and all soil and smut will come away with it.—G. S.



Dainty Desserts and Salads.

For the latest things in Jell-O desserts and salads let us send you, free, the "Bride Book." Besides relating the housekeeping experiences of a young bride it gives the newest and most popular recipes for the famous ten-cent desserts and salads that are so much in vogue just now.

For ten cents you can serve six persons with one of the most delightful desserts or salads.

A great variety of desserts both de and salads is made of each of the seven different flavors of

JELL-O

You do not have to cook to make any of them, but only dissolve the Jell-O powder in boiling water.

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Each 10 cents at any grocery or any general store.

If you cannot get Jell-O at the store where you trade we will supply you direct by mail at the regular price, 10 cents a package, paying postage ourselves.



THE GENESEE PURE FOOD COMPANY, Le Roy, N.Y., and Bridgeburg, Ont.

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Don't Go Out in the Cold!

Don't go out through the snow, cold, slush or nasty weather to the old unhealthy, unsanitary open privy. Let the children, ladies or the old folks enjoy the comfort and convenience of a warm, clean, odorless sanitary indoor closet.

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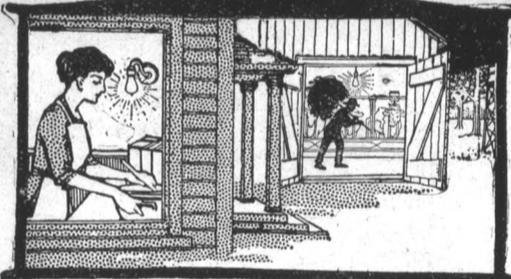
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THE PASS-IT-ALONG CLUB.

BY ELLA E. ROCKWOOD.

The club had set aside one meeting as favorite recipe day and note books were again in evidence. Fall canning and pickling being in season, naturally interest centered in this direction.

Mrs. Allen gave her formula for chowder, a chopped pickle which she declared to be different from the ordinary article bearing that name. A sort of aristocratic member of the piccalilly family as it were.

One peck of green tomatoes, eight onions and five red peppers chopped fine, add one cup of salt and let stand over night. Drain in the morning and boil for 15 minutes in one quart of vinegar reduced with one quart of water. Again drain off the liquid, then add four tablespoons of cinnamon, two tablespoons of cloves, a little cayenne pepper, four pounds of brown sugar and two quarts of vinegar. Boil slowly for 20 minutes.

As the copying of this recipe was concluded Mrs. Collins said: "I can vouch for the excellence of this chowder, for I have eaten it at Mrs. Allen's table and it is truly the best ever, in my estimation. I was going to ask her for the recipe this season if she had not given it to us this afternoon, and I am going to make some next week, sure."

Mrs. Brown's contribution was a dessert, using as a base a freshly baked one-egg cake in two layers. As a sauce for this an ordinary lemon pie filling was placed between the layers and on top the whipped whites, unbrowned, poured over all. As the ladies would naturally have each her own favorite recipe, both for the cake and for the filling, no further instructions were considered necessary. This dessert it was mentioned, differed from the popular lemon pie and made a welcome change occasionally.

"I hardly know which is my favorite recipe," responded Mrs. Collins as the hostess called her name, "because I have one for each department of my cooking. I don't go in so much for fancy dishes as I used to, and find myself relying more and more upon the old stand-bys which require less time and energy to prepare. I believe the one which I use most often, useful in so many ways, is this cake recipe. I use it with all sorts of fillings for cake, dress it up with a sauce or with whipped cream for desserts, make it into patty cakes with spices or raisins and tomorrow I intend to try Mrs. Brown's suggestion and serve it a la lemon pie. I got the recipe from a friend in the city who tells me she uses it with different fillings and frosting in baking for an exchange where she gets 75 cents apiece for the cakes. Some of you may be inclined to smile when I tell you the recipe calls for but a single egg in a cake selling for that price. When freshly made you would never suspect from the taste how very economical this cake is, and of course, the filling and thickly frosted surface add to the attractiveness, as well as to its toothsome. Here is the recipe and I hope you will all give it a trial at least:

"One beaten egg and one cup of sugar stirred together. Add three tablespoons of melted butter, then one-half cup of milk and one-half cup of cold water. Beat together a moment then add two level cups of flour sifted with two rounded teaspoonfuls of baking powder and a little salt. Stir well with whatever flavor is desired and bake. This cake should be eaten the day it is made or the day after, as it is not rich enough to keep well."

Mrs. Holmes being absent, Mrs. Johnson was next on the list and responded with a recipe for vegetable mince meat. "I don't know that I call this my favorite recipe, because I have others that I use more often, but this is an entirely satisfactory pie filling at our house and takes the place of the regulation mince meat. It keeps nicely

when made in quantity and unless one is wise to its lack of meat the difference would scarcely be noticed. I intend soon to put up a supply of it for winter use. Take one peck of green tomatoes, five pounds of brown sugar, one pound of seeded raisins, one pound of currants, or double the amount of raisins, and omit the currants, two tablespoons of ground cinnamon, one tablespoonful of cloves, one tablespoonful of salt, one of grated nutmeg, one cup of boiled cider, one of vinegar and one of chopped suet. Chop the tomatoes and drain them, then put over the fire in cold water to cover and bring to a boil. Drain, and again cover with cold water, scald up and drain for the second time. Add the raisins, currants, suet, sugar and salt and cook gently one hour, then add the spices and vinegar. Scald up again and seal in glass jars or keep in a cool place in an open jar. There will be about six quarts of good pie material."

The concluding recipe came from the hostess and was given with the suggestion that it furnished a simple and convenient way of providing a dish ordinarily not put up in small quantities on the farm, namely, corned beef. For five pounds of beef take four tablespoonfuls of salt and two of brown sugar, with as much powdered saltpetre as will cover the point of a table knife, possibly one-fourth of a teaspoonful. Put these into a stone crock with the meat, cover with cold water and let stand 48 hours. Then cook in the same brine until thoroughly done.

As the hostess concluded she turned to Mrs. Allen: "I wish you would tell us how you put up your grape juice, Clara. You seem to make so little work about it and always have such a quantity. Our grapes are ripening now and I want to use part of them in that way."

"It is the easiest thing to put up," was the response, "and as you say, I always prepare a quantity every year. It is so nice in sickness and I find a can of it makes a very acceptable present at any time, besides affording a refreshing beverage on a hot day. I would as soon do without canned fruit as my grape juice. I remove the stems, discarding all grapes that are not perfect. Then cover with cold water in an enamel kettle and bring slowly to a boil. I cook them until all are broken or nearly all, then pour into a bag to drain. I sweeten the juice to taste, as it is much better to do that than later, using about one-half cup of sugar to a quart. Bring the juice to the boiling point and put in sterilized glass jars. Bottles may be used but I find the cans much more convenient. Seal the same as fruit. I always test each can carefully to be sure it is air tight. To do this the cans are turned bottom up after sealing. If juice runs out it shows that something is wrong. If there is no leak the juice will keep. After draining off the juice I sometimes make the pulp into marmalade by pressing it through a sieve to remove seeds and skins, then adding sugar and boiling until thick. But this, of course, is not strictly a first-class article as it lacks the juice of the whole fruit. However, it makes use of something which is almost too good to throw away, and our folks think it is pretty good after all. At least it adds to my stock of sweets and we never have any trouble in getting rid of it when it goes on the table."

SEWING SUGGESTIONS.

BY MILDRED M. NORTH.

When sewing on a button with two holes it will stay more firmly and be less apt to tear out of the cloth if the button is set straight and one stitch taken, then turned so the holes run cornerwise and another stitch taken, then turned cornerwise in the other direction and a third stitch taken, then repeat. This gives a greater pulling surface.

When wishing to use a double thread

for sewing on buttons if a knot is tied in each thread instead of tying both together the result will be more satisfactory.

When fastening a thread tie a knot in it and with the needle draw it up close to the cloth. It will stay better than several stitches.

Odd lengths of embroidery of different widths can be purchased quite cheaply sometimes. I made my little girl a pretty white skirt from several such pieces. A piece about eight inches wide was six or eight inches too long for the skirt yoke so I thought of a way to avoid cutting and make it easy to enlarge it next year. Four tucks were laid in the front, two facing each way, and two in the back, the embroidered edge forming the top of the yoke. Two strips of embroidered galloon formed shoulder straps. Half circles were cut to allow it to come up under the arms. These were faced with bias binding which I buy by the bolt and use to put on over ruffle headings. It is much easier and neater than I could cut myself. Before stitching on the skirt body I basted the yoke to it, taking out the tucks I had previously pinned in. After stitching I again laid the tucks in, allowing them to run across the joining seam. This will allow the yoke to be enlarged by simply ripping a pair of tucks. The same plan was followed in the back and the extra fullness pleated (or gathered), to the waist the remaining distance. Wide tucks in the bottom of the skirt allow for lengthening.

COLD WEATHER DISHES.

BY M. KENNEDY.

During the coming days of searching cold, the farmer feeds his chickens a little more corn, to enable them to better withstand the cold, but how often does the good wife remember to add more corn meal to the farmer's rations for the same reason? They say that in an earlier day the people were healthier than they are now and I wonder if it was not because they ate more coarse foods, instead of the white bread and sweets which we are prone to eat at the present time.

Have you ever tried to see just how many different ways you could use corn meal? If not, you have several treats coming. Here are some of grandmother's tried and true recipes. The corn bread made something like white bread is good enough for a king.

Corn Bread.—One cup of good soft yeast, one cup of corn meal, very fine, two cups of sweet milk, half cup of shortening and two thirds of a cup of sugar. Wet the corn meal with cold water, pour on one quart of boiling water and cook ten minutes, being very careful not to scorch. Remove from stove, add sugar and shortening, stir smooth and add milk and wheat flour enough to make a stiff batter. Let rise, mix with white flour to about the same consistency as you do white bread, let rise and make into medium size loaves. Bake one hour in a moderate oven.

Johnycake No. 1 made with sour milk and shortening. Two cups of buttermilk, one cup of corn meal, two level tablespoons of sugar, four tablespoons melted shortening, one level teaspoon soda, one level teaspoon of baking powder, and one cup of flour. Put all dry ingredients in flour sifter and sift into buttermilk.

Johnycake No. 2.—Made with sweet milk and eggs. One egg beaten, two cups of sweet milk, two tablespoons of sugar, one cup of corn meal, one cup of wheat flour, four tablespoons shortening and two rounded teaspoons of baking powder. Mix well.

Johnycake No. 3.—Made with sour cream. Have not had a failure with this recipe and have used it 14 years. One egg, beaten, one-fourth cup of sugar, four tablespoons very thick cream, one cup of buttermilk, half teaspoon of salt, one level teaspoon of soda and one rounded teaspoon of baking powder sifted with one-fourth cup of flour and all the corn meal the mixture will

spread smooth with and not look rough over the top.

To make fine muffins use about half and half of flour and corn meal with this recipe and bake in gem tins.

When making mush, stir the meal up with cold water and pour on the boiling water and it will never be lumpy. To make it look appetizing for breakfast, pack in small baking-powder cans and let cool. Slice and fry plain, rolled in flour or dipped in beaten egg and flour and fried, as liked. Do not leave in cans over night, only until cool.

Children sometimes like chopped dates or raisins in the warm mush for breakfast and I have often seen people eat the plain mush, with butter and brown or maple sugar when they would not eat it with milk.

Samp is an old-time dish made of very coarsely ground corn, cooked the same as mush, only much longer, usually cooking all day. This is very good in milk, also fine seasoned well with salt, pepper and plenty of butter, serving while piping hot.

Indian pudding is an unusual dish and a very good one. Wet one cup of corn meal with cold water, pour on one quart of boiling water and cook till smooth. Add a large lump of butter and half a cup of raisins, if liked. It is very good either way. Bake in moderate oven thirty minutes.

Corn meal pan cakes are delicious. One well-beaten egg added to three cups of buttermilk. Sift in one cup of flour and enough meal to make a batter that will spread very easily. Sift two level teaspoons of soda, one teaspoon of salt and a rounded teaspoon of baking powder with the flour and meal.

These recipes will suggest many other dishes that may be made with corn meal, not forgetting the Dutch dish of "scrapple."

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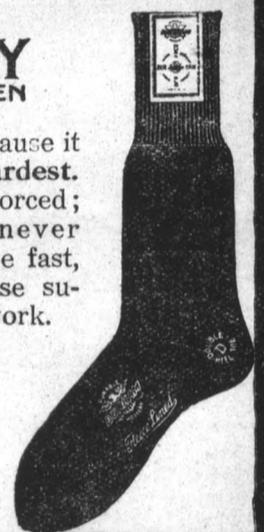
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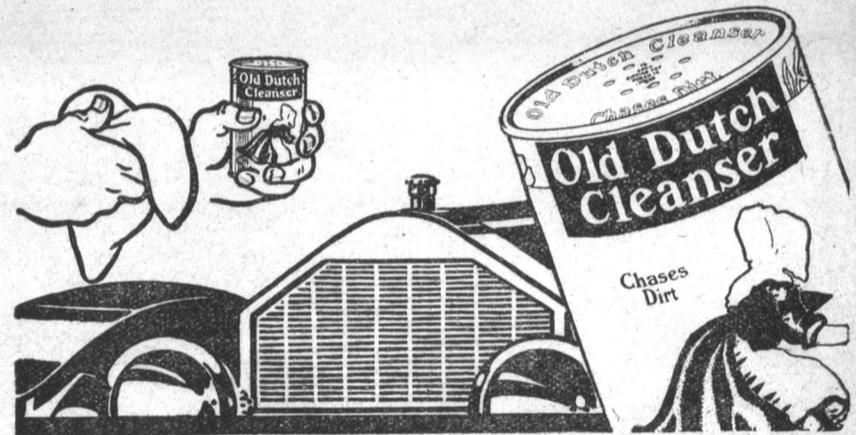
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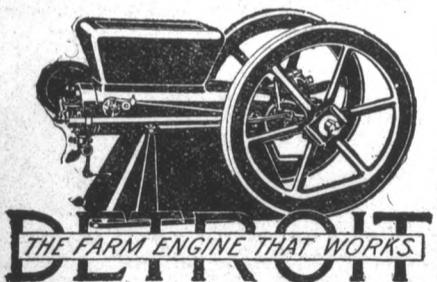
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The Farmers Who Stuck

Briefly summarized, this title tells the story of the success of the Milk Producers' Association, of the Chicago dairy district as told by W. J. Kittle, secretary of the organization, at the recent annual meeting of the Michigan Milk Producers' Association held at M. A. C.

In introducing Mr. Kittle, President Hull stated that he had asked him to come to the meeting for the purpose of telling the story of the Chicago Milk Producers' Association and its success. This he proceeded to do in a most interesting manner.

He stated that the organization owed its inception to an attempt on the part of the city of Chicago to get a state law passed making the use of the tuberculin test compulsory on the part of dairy farmers who sought a city market for their product in the state. To this program the dairy farmers of the Chicago district dissented for the reason that they did not believe the tuberculin test sufficiently reliable to merit such sweeping application, consequently they organized to fight the enactment of such a law. This program was successfully carried out during the legislative years from 1909 to 1913, at which time a law was enacted by the legislature of Illinois providing that no city in the state should have a right to pass an ordinance making the tuberculin test compulsory upon dairymen contributing milk to the city supply.

While this was the primary purpose of the organization it found another field of usefulness in opposing the alleged combination of milk distributors and manufacturers who purchased their supply in the Chicago district. In the first contest which occurred, in 1913, the organization succeeded in getting a raise of 21 cents per cwt. in the price of market milk, but due to the fact that the officers of the association compromised the matter, finally accepting a price averaging one and two-thirds cents below their original demands, their loyalty was questioned by many members of the organization, which fact increased the confidence of the distributors that they could still control the price as they saw fit, consequently the price declined with the membership of the organization until the leading distributors were paying \$1.33 1-6 and \$1.35 5-6 per cwt. respectively.

In the meantime the membership of the organization had declined to 2,600 members, and the organization found itself \$1,000 in debt. At this time Mr. Kittle and the other officers of the organization began a campaign for an increase of membership and the betterment of market conditions. On every hand, however, he was confronted with the assertion, "They won't stick." By way of emphasizing this statement, many pointed out the fact that 62 per cent of the dairy farmers in the Chicago district were tenants who not only would not stick, but could not stick if a milk strike was called, since they could not afford to withhold their milk from their regular market for any period of time. In the fight for better prices which subsequently occurred, however, it was demonstrated that this class of farmers did stick almost to a man, while many of the farm owners did not.

An Aggressive Campaign.

In October of 1915 the officers of the association began to get ready for the contest which would develop in March of the following spring, at which season new contracts were made. At that time 110 local organizations were in existence and meetings were held in

each of the localities where these had been organized. In many cases these meetings were poorly attended for the reason that the representatives of the milk buyers were present, and the farmers feared discrimination against individuals, which had already been practiced in many instances. Notwithstanding these discouragements, an aggressive campaign was continued, and a campaign committee of nine was appointed to aid in securing the signatures of milk producers agreeing to place their product in the hands of a selling committee for the purpose of making new contracts, the agreement to become operative when 70 per cent of the producers in the district had signed. At many points practically every producer signed the agreement, and notwithstanding the difficulty of keeping the entire membership in line, only a comparatively small number of farmers who were identified with the association made new contracts when on the fifteenth of March the larger buyers announced a price of \$1.33 1-6 cents per cwt.

Renters Stuck when the Test Came.

On April 1, when the old contracts expired, there was something doing. Committees of the organization were on hand at every receiving point and farmers who were not members of or loyal to the organization were not permitted to deliver milk. They were stopped before they reached the receiving station and turned back home, or in case they would not listen to argument, their milk was taken from the wagon before they were allowed to proceed. When the dairymen not identified with the organization saw that its members meant business many of them joined, and very little milk was delivered at the receiving stations. Many of these renters withheld their milk for 10 to 12 days before the buyers, one by one, gave up the fight and contracted at the price demanded by the committee empowered to conduct the negotiations.

Mr. Kittle graphically described the scenes which were enacted during this trying period. He admitted that many of the methods adopted were a viola-

tion of law, but asserted that these were the only methods by which the milk dealers' association could be broken and a fair price assured farmers for their product. The result of this campaign was that the farmers in the Chicago district got an advance of 22 cents per cwt. for their milk, whether shipped to the Chicago market or sold to the condenseries in the district. Great as was the financial benefit of this increased price, greater still was the benefit to the farmers of that district and to the dairy world through the dissemination of the idea that they had a right to bargain their product, and he confidently asserted from now on the price of milk in the Chicago district would be the association price. And notwithstanding the fact that this campaign affected more than 10,000 dairymen in the district some of whom aided the campaign only through coercion, there were no disastrous results from the milk strike, no runaways, nothing but milk spilled, and only two black eyes.

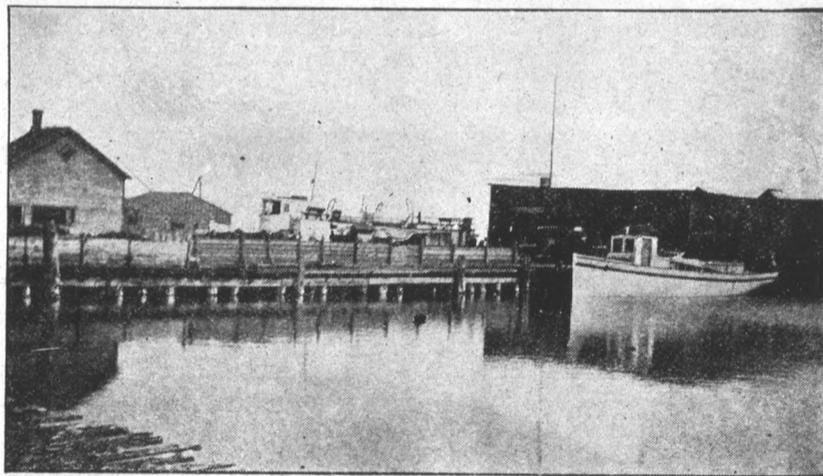
The Final Results.

An aftermath of the campaign was the filing of 26 damage suits for \$10,000 each against individuals who were active in the campaign. As a means of combating this move the local milk boards were called together for the purpose of defensive action and incidentally invited the dealer who filed the suits to meet with them. Instead he sent his lawyer, and as a result the suits were withdrawn. Did the farmers stick? Mr. Kittle asserted that they could not be pried loose once they had entered the campaign, to which fact its successful culmination was due.

When the season for making fall contracts arrived, 109 locals sent delegates and the price was made by the method of averaging the price demand of each local as shown by a secret ballot of the delegates, and the price demanded was met without contest by the buyers throughout the district. The appreciation of what their organization has done for them, by the dairymen in the Chicago district, is attested by the fact that their Milk Producers' Association now numbers 11,500 members and has on hand a working fund approximating \$15,000.

Altogether Mr. Kittle's address was a most interesting story of the successful campaign conducted by his organization, backed up by loyal farmers who stuck, and a source of inspiration to the hundreds of Michigan milk producers who heard him.

Bringing Fruit to Shipping Point



Boat Makes Daily Trips to a Score of Points Around the Peninsula for Fruit to Bring to Traverse City.

TWO methods of gathering fruit from the orchards of the peninsula north of Traverse City are of interest. The accompanying illustration suggests one. The little boat makes daily calls at a number of docks around the peninsula, picking up the fruit brought by the growers, and not later than 6:30 a. m. pulls into the Traverse City harbor and delivers its cargo of crates and barrels to the fruit exchange, to commission agencies, to merchants or to the railroads. The other method makes use of motor trucks. These gasoline wagons have to a considerable extent, displaced the farmers' teams in this district for making fruit deliveries. The progressive growers recognize that the highest quality of fruit is grown only where soil and climatic conditions are fully adapted. Such favored locations

are likely to be some distance from shipping points, which handicap is now being overcome by the building of good roads and by the use of rapidly moving motor trucks.

As these transportation facilities are owned by parties who make transportation a business, the farmers are relieved of what is to them an arduous duty at a time when everybody is putting in overtime gathering the fruit crops. It may be that the rates could be lowered if the growers secured boats and trucks of their own to do this work but it is doubtful, as the parties operating the lines employ the boats and trucks for transporting other things when the fruit is out of the way. The owners of the boat charge four cents per crate for carrying the fruit from the local docks to Traverse City where an additional cent is required to pay for trucking the crates to the commission agencies. If transferred to cars for export the cargo is loaded into the cars directly from the boat. The truck lines get the fruit at the orchards and deliver it in Traverse City where wanted, for a flat rate of five cents per crate.

It is not probable that men with teams could compete at these rates. The large trucks greatly reduce the

per cent of man-labor in the hauling. Good roads are also an important factor in favor of the use of the gasoline power. If convenient loading and unloading conditions and facilities are provided the efficiency of these vehicles can probably be further increased.

Then the introduction of these new methods enables the fruit to be handled so it will arrive on the market in better shape. The boat or the trucks with their resilient springs and rubber tires, jars the fruit less in transit than do the common wagons. The trip is made in less time, which subjects the load to the evils of the road for a shorter period. It is more convenient, especially with the boat, to carry through the cool of the night than it is with horses.

While these innovations may be looked upon by many with indifference, it is more than probable that in days to come it will be a common sight, especially in the fruit districts of our state, to witness trains of trucks with trailers toting great loads of luscious fruit to central packing houses and shipping stations, or where water transportation can be had, to see suitable craft performing the same indispensable task.

Advertising Farm Products III.

By I. J. MATTHEWS

THE most successful farm advertisements conform to the same general principles as do those calling notice to other wares for the psychology of attention, interest, persuasion and action result in the same reaction of the reader, be he farmer or townsman. So far as make-up is concerned, the connecting link between the farmer and his customer is like the advertisement of dress goods, clothing, or automobiles.

In building up the advertisement of a farm product, the copy writer should first think himself into the position of the buyer of the product. Whatever it is that is being placed before the public, remember that the customer will not be interested so much in how the product is made as he will be in what it will mean for him. Customers may be appealed to in many different ways. The most important of these ways are through economy, health and happiness. Economy of money is the appeal generally made, but quack medicine advertisers make their appeals and consequently their money through each individual's desire for perfect health. The joy of having a job well done is also an avenue through which the advertiser may legitimately reach his customer.

The copy writer of farm advertisements will most often make his keenest appeal to health. "An apple a day keeps the doctor away," is a sentence that has made an appeal to the health yearning tendency of all people. In the same breath, the company that coined this sentence coined some money.

The display advertisement must force some thought to stand out in such relief that the reader will notice something distinctive about the copy. It may be a catch word, phrase or clause or it may be an apt illustration or yet it may be a tasty trade-mark arranged in an artistic way on the page.

After having thought out a catch word that will be sure to attract attention, the next thing is to follow it up with something interesting about the product. The battle is half done when the advertisement has succeeded in catching the attention of the reader. A few well chosen words explaining some distinctive feature of the product is better than a verbose description extolling all its virtues. If it is an egg advertisement, it ought to feature the color of the eggs, their weight, their freshness or some other attribute of the eggs that will appeal to the trade that is being sought.

In writing such a feature, one should aim to give the advertisement a personality. A simple recital of facts or claims is as dry as dust and would only mean that the good will of a prospective customer secured through his attention to the advertisement, had been lost. Hitching up the reading matter with some person who superintends that portion of the business is good for it lends a personal touch to the whole. The reading inserted in a paper ought to be considered in the light of a salesman and the salesman shrouded in formality is not the one who becomes noted for the volume of his sales.

The mechanics of the advertisement deserve careful attention and since copyright and patent laws will not protect a word regularly used in the English language, there has been a tendency to coin new and noisy words. This is a practice that the farmer should avoid. A dignified advertisement will sell goods where a rude one will not. It is much better to advertise Lewiston's English Berkshire hogs than "L-E-B" hogs. The English language, well used, will make sales as quick as any contorted and twisted hog latin.

In building up the reading matter, emphasize again and again the catchword of the advertisement. Keep this thought constantly before the reader and a lasting impression will be made where in other cases, the first thought is lost before the reading matter has been entirely perused. The last few sentences should convince the reader that he wants the article that is being held up for sale and the last thing should be to close the deal and move the person to order at once. Often a receptive attitude is created and value given to illustrative matter by employing a coupon that the reader fills out and sends to the producer. This makes sure that the buyer is in the frame of mind for further investigation and gives the printed matter some value because some outlay of time and energy was required before it was available.

The reading or illustrative matter not bearing directly on the point to be featured should be discarded. Generally, readers are busy and give the displays only a casual perusal. They do not care to read a scientific or technical dissertation upon any phase of the production of the goods. Of course, this will depend upon what sort of readers the advertising is to reach. To reach farmers advertising should not contain excess reading matter.

When you buy Prince Albert you are getting quality!

Quick as that P. A. flavor strikes-in you'll realize you've received all you paid for in tobacco quality—not coupons or premiums! State or national restrictions on coupons or premiums can in no way affect Prince Albert's sale. Quality has been the only inducement Prince Albert has ever offered smokers.

You've heard many an earful about the Prince Albert patented process that cuts out bite and parch and lets you smoke your fill without a comeback! It proves out every hour of the day!

PRINCE ALBERT

the national joy smoke

will open the doors wide for you to come in on a good time with a jimmy pipe. You'll think the smoke-hd is off for fair, firing up as the smoke-spirit strikes you—without a regret! All that delight can be yours soon as you lay in a stock of P. A. and jam that friendly old pipe brimful—and strike fire! This tip is worth a lot in happiness and contentment to every man who knows what can be gotten out of a chummy pipe with P. A. for "packing."

Copyright 1916 by R. J. Reynolds Tobacco Co.



Prince Albert can be had everywhere tobacco is sold, in tippy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and that clever pound crystal glass humidor with sponge-moistener top that keeps the tobacco in such fine shape, always!

R. J. Reynolds Tobacco Co. Winston-Salem, N. C.

15c each; 6 for 90c



ARROW COLLARS

FITS EXTREMELY WELL AND GOES WITH THE PREVAILING STYLE IN BROAD END TIES AND FOUR-IN-HANDS.

ASHBY 2 1/2 in.
LEXICON 2 1/2 in.

CLUETT, PEABODY & CO., INC., Makers

APPLETON Husker and Shredder

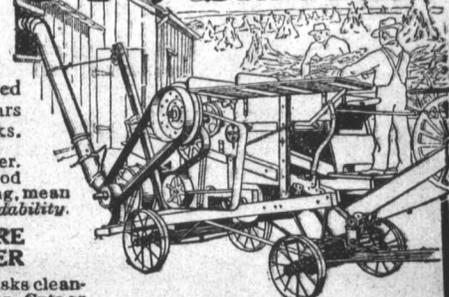
Every year hundreds more farmers buy huskers, as they find the most economical, efficient way to save all the feed value of a corn crop is to husk the ears and make fodder of the leaves and stalks.

The Appleton was the first successful husker. Appletons made years ago are giving good service today. Few parts, made extra strong, mean long life, few repairs and positive dependability.

GUARANTEED TO DO MORE WORK WITH LESS POWER

than any husker of equal size, Appleton husks cleanest, shells least; has most efficient corn saver. Cuts or shreds leaves and stalks while husking ears. Fodder value saved from small acreage pays its cost. Easiest, safest to operate. Works in all conditions of corn.

Appleton Mfg. Co., 520 Fargo St., Batavia, Ill.



Husker book free! Describes four sizes for engines of 4 h. p. and up. Shows why it pays to handle corn this way. Write today.

Markets.

GRAINS AND SEEDS.

October 30, 1916.

Wheat.—Wheat values continued to soar throughout the past week, and the market on Monday remained firm with the bulls in control of the trade. Foreign buying is conducted on a large scale, which with the wide domestic demand and the small volume of receipts at primary points compared with other years, gives the holders a decided advantage in making contracts. Political conditions in Europe mean much to the trade, and prices are likely to fluctuate widely with any favorable or unfavorable change in international relations across the Atlantic. One year ago No. 2 red wheat was selling at \$1.12½ per bushel. Last week's quotations are as follows:

	No. 2	No. 1	Dec.
Wednesday	1.78¼	1.73¼	1.81¼
Thursday	1.78¼	1.73¼	1.81¼
Friday	1.83¼	1.78¼	1.86¼
Saturday	1.88	1.83	1.91
Monday	1.88	1.83	1.91
Tuesday	1.87	1.82	1.90

Chicago.—December wheat \$1.89 per bu; May \$1.86; July \$1.49.

Corn.—The market for this cereal has undergone a similar change to that for wheat, with indications for still higher values to rule. Corn is being bought for export purposes while the domestic consumption is large, despite the unusually high prices prevailing. Old corn particularly is in strong demand. A year ago No. 3 corn was quoted locally at 67c per bushel. Last week's Detroit quotations were:

	No. 3	N. 3
	Mixed.	Yellow.
Wednesday	1.08	1.10
Thursday	1.08	1.10
Friday	1.08	1.10
Saturday	1.08	1.10
Monday	1.13	1.15
Tuesday	1.13	1.15

Chicago.—December corn 87¼; May 89c; July 88¼c.

Oats.—This grain has been following the others with the demand only moderate. There are a few carloads of oats coming to this point. The visible supply shows an increase of 2,400,000 bushels. Standard oats a year ago were quoted at 41c per bushel. Detroit quotations for last week were:

	No. 3	White.
	Standard.	
Wednesday	57	56
Thursday	56	55
Friday	56½	55½
Saturday	56½	55½
Monday	56½	55½
Tuesday	56½	55½

Chicago.—December oats 54½c; May 58c per bushel.

Rye.—Small offerings and a good demand advanced rye values to \$1.42 for cash No. 2.

Beans.—On Monday the local board of trade added another 25c to cash bean prices. Prompt shipment is now quoted here at \$6.50, with October at \$6.75. At Greenville local buyers are operating on a \$5.75 basis. The Chicago demand is good with offerings altogether inadequate. Michigan pea beans are quoted there at \$6.25 and up.

Seeds.—Prime red clover \$10.60; December \$10.75; alsike \$10.20; timothy \$2.60; alfalfa \$9@10.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$9.80; seconds \$9.40; straight \$9.20; spring wheat \$10.50; rye flour \$8.30.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$30; standard middlings \$31.50; fine middlings \$35; cracked corn \$45; coarse corn meal \$42; corn and oat chop \$39 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$14@15; standard timothy \$13.50@14; No. 2 timothy \$12@13; light mixed \$13.50@14; No. 1 mixed \$11@13; No. 1 clover \$10@12.

Straw.—Rye straw \$8.50@9; wheat and oat straw \$7.50@8 per ton in carlots.

DAIRY AND POULTRY PRODUCTS.

Butter.—Offerings show no increase and there is nothing to indicate lower prices: Prices unchanged. Creamery extra 34½c; do. firsts 33c; dairy 30c; packing stock 27c.

Elgin.—Butter is scarce and prices have advanced ½c. The Price, based on sales, is 35c.

Chicago.—A steady feeling exists and prices show slight advances. Creamery extras quoted at 35c; extra firsts 34@34½c; firsts 32½@33½c.

Eggs.—The market is firm at prices 2c higher than last week. Receipts moderate. Firsts 35c; current receipts 33c per dozen.

Chicago.—The feeling continues firm with prices higher. Real fine eggs are scarce. Firsts 31½@32½c; ordinary firsts 29½@31c; at mark, cases included 25½@31½c; firsts, storage paid, 29c per dozen.

Poultry.—On account of liberal supply market continues easy. Prices are slightly lower. Live, spring chickens 16@16½c; No. 1 hens 15½@16c; others 13@15c; ducks 15@16c; geese 15@16c; turkeys 24@25c.

Chicago.—The market is well supplied with turkeys, especially weak and lower. Good turkeys 19c; others 10@12c; fowls, general run, 14@14½c; others 13@16½c; spring chickens 16½c; ducks 14c; geese 12@14½c.

FRUITS AND VEGETABLES.

Apples.—Market is firm and prices unchanged. Barreled stock \$3.50@4 for fancy; choice \$2@2.75; No. 2, 75 @ \$1 per bushel. At Chicago supplies are moderate, especially of No. 1 stock. Prices are slightly higher. Fancy stock sells for \$2.50@5.50 per bbl; No. 2 stock \$1.50@2.50.

Potatoes.—At Detroit potatoes are in better demand than supply. Prices are higher. At Chicago the Michigan white are quoted at \$1.55@1.70; others \$1.40@1.80; liberal receipts caused a weak market. At Greenville farmers are getting \$1.60 per bushel.

WOOL.

Wool.—Market is exceedingly bullish with manufacturers getting nervous about their supplies of raw material. Fleeces are very scarce and prices are higher. Michigan unwashed delaines are quoted in Boston at 38@39c; do. combing 39@42c; do. clothing 30@36c.

GRAND RAPIDS.

Potatoes at outside buying stations were above the \$1.50 mark at the opening of this week's market, with indications that prices will go still higher. The Michigan yield has been far below expectations except in a few favored localities. The southern counties have no potatoes to speak of. At Freeport, in Barry county, and at many other stations that might be named, where dealers have sent men to buy stock it has turned out to be a case of selling stock instead, these sections not producing enough tubers for home consumption. "Strong as a bull," is the way one leading dealer here speaks of the bean market at the present time, with the price soaring to \$6 and the end not yet in sight. Wheat has advanced 20c during the past week, while the rise in rye, corn and oats has been 5c. Fresh eggs are up 2c, with 36c as the outside figure early this week.

DETROIT EASTERN MARKET.

Apples were draggy on the Eastern Market Tuesday morning with prices generally ranging from 65c@1.50 per bushel; potatoes \$1.50@2.25; carrots \$1; cabbage \$1.40@1.60; turnips \$1.25; onions \$1.75; cauliflower \$1.25@1.50; lettuce 75@90c; chickens \$1 each; eggs 48c per dozen. There were a few loads of loose hay being held around \$18 per ton.

LIVE STOCK MARKETS.

Buffalo.

October 30, 1916. (Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 293 cars; hogs 140 d. d.; sheep 65 d. d.; calves 1200 head.

With 293 cars of cattle here today, what few shipping steers were here and the best grades of butcher cattle sold good, but the medium and common grades and canners and low-priced beef cows sold very slow and a little lower. There was a good demand for the best stockers and feeders, but they sold at steady prices, but the common stuff was very slow sale. The bull trade was very slow and bulk of them sold 15@25c lower. We look for a liberal run of cattle again next week and a good trade on the best grades and slow on the medium and common kind.

We had quite a liberal run of hogs today, footing up a total of about 140 double decks. Big runs all over the west again weakened conditions and the general market was strong 10@15c lower from Saturday's best time. A few selected hogs sold at \$10.25@10.30, with the bulk of the sales around \$10.10. Pigs and lights, as to weight and quality, \$9.25@9.50; roughs \$9.25@9.50; stags \$7.50@8.50. It looks like a fair run of hogs for Tuesday and present indications do not point to much if any higher market.

With a light run of lambs today our

market opened active and 15c higher than the close of last week, and we look for steady to shade lower prices balance of the week.

We quote: Best lambs \$10.85@11; cull to common \$9@10.25; yearlings \$7@9; bucks \$5.50@6.50; ewes \$7.25@7.50; cull sheep \$3.50@5.50; wethers \$7.75@8; top veals, \$11.50@11.75; heavy \$7@9; common and light \$8@9; grassers \$5.50@5.75.

Chicago.

October 30, 1916.

Cattle. Hogs. Sheep. Receipts today..27,000 59,000 30,000 Same day 1915..18,331 21,597 22,585 Last week....83,248 223,321 134,327 Same wk 1915..51,316 94,444 74,015

Buyers took the desirable kinds of cattle freely this morning at firm prices, and some choice beefs sold a dime higher. Receipts included about 4,500 northern rangers. Hogs broke 15c under the big supply, with sales at \$9.35@10.20. More native fat lambs than usual arrived, and prices ruled firm under a good demand, prime lots being salable at \$11.15. Hogs marketed last week averaged only 208 lbs.

Cattle sold much better last week than might have been expected with such liberal receipts. Weakness showed for the undesirable offerings, these comprising a large share of the receipts; but the diminishing offerings of choice corn-fed beefs advanced sharply on good buying. The greater part of the steers sold at \$7.75@10.75, the choicest weighty do. \$10.60@11.65; the good steers \$10 and upward and medium kinds \$8.50 and over. Fair killers brought \$7.50@8.45 and \$4.50@5.50 for canning steers of light weight. Yearlings were \$10.50@11.40 for the better class, and fair descriptions \$8@9. The butcher stuff had an outlet at \$4.80@7.85 for cows and \$4.35@9.40 for heifers, while cutters sold at \$4.15@4.75, canners \$3.25@4.10 and bulls \$4.25@8. Stockers and feeders were marked down. Sales ranged from \$4.50 for inferior little stock steers all the way up to \$7@7.85 for the better class of feeders. Calves ranged from \$4.50@11.75. Liberal runs of western cattle are expected for the remainder of the season up to cold weather. Prime cattle have been selling at the highest prices of the year and the best prices ever seen in October. The market was dull and lower during the latter part of the week except for the better class, which showed an advance of 15@25c for the week.

Hogs suffered some sharp breaks in prices last week. Still, the market was a much better one than might have been expected, and the most desirable offerings sold particularly well. The average quality was only fair, which accounts for the good premium paid readily for the choicest hogs. Prime butcher weights continued to top the market. At the week's close hogs sold at \$9.65@9.90 for poor to good mixed packing lots, \$9.95@10.20 for medium weights, \$10.25@10.35 for selected butchers and \$7.50@9.60 for pigs, according to weight. A week earlier hogs brought \$9.50@10.50.

Lambs from the distant ranges were offered in fairly large numbers last week, and feeders comprised a generous share of the offerings, with a good demand at early maintained prices. At the week's close prices were: Lambs \$8.25@11.10; yearlings \$7.50@9.25; wethers \$7@8.25; ewes \$3@7.50; bucks \$5@6; breeding ewes brought \$6@9.50; feeders bought lambs at \$8.75@10.25; yearlings at \$7@8.45; wethers at \$6@7.50; ewes \$5@6.25.

The British demand for horses will cease at the close of October, and country shippers should be cautious about sending in too many horses of the army class. Commercial chunks sold at \$190@227.50; drafters at \$230@285; feeders mostly at \$150@200; loggers at \$125@225; expressers at \$190@200 and little southern chunks at \$2.50@135, with mares going at \$100 and over.

LIVE STOCK NEWS.

A prominent Chicago live stock commission firm, having branches in every western market of any importance, is advising owners of thrifty, growing hogs to wait until the youngsters acquire at least fair size before marketing them, as the country is entering the winter packing season with hog values on the highest basis ever known. The firm says: "The presence of so many light hogs on the market naturally leads one to inquire if there will not be a good place for these hogs a little later on. The demand for hog meats and other hog product is such that it seems only reasonable that prices for hogs should be maintained upon a fairly high level. In any event, it looks as if packers would pay more for their hogs this winter than in any previous winter season in their history, and where hog raisers are at all prepared to do so, we strongly

urge them to hold back these light pigs and mature them."

Lawrence Funk, of Illinois, who breeds and feeds about 7,500 pigs every year, having them born in January, February and March, makes it pay handsomely whether prices happen to be up or down. The pigs are warmly sheltered, and losses are reduced to a minimum. Mr. Funk had a shipment of hogs on the Chicago market recently and sold them satisfactorily. He makes a practice usually of having his hogs weigh around 210 lbs. when marketed, and he has not hesitated to buy corn liberally for feeding of late, although it cost him as high as 80 cents per bushel. He has about 2,500 young hogs still unmarketed, having shipped some 5,000 so far this year.

Cattle are moving to western markets from the western and southwestern pastures and the northern ranges in large numbers, and supplies have been running much larger than a year ago. This is the time of the year when grass cattle are marketed with liberality, shipments being made from a wide territory, extending from the Texas Panhandle and Oklahoma on the south to the plains of Alberta on the north, with large shipments from such states as Kansas, Nebraska, Colorado, Wyoming, Montana, North Dakota and South Dakota. The high price of corn has discouraged the feeding of that grain to stock, and there was extensive marketing of cattle several weeks ago that would ordinarily have been shipped out during October and November. Hence, there is now a great and increasing scarcity of well finished heavy beef cattle and prime yearlings. Fair numbers of warmed-up cattle and fair to middling short-feds are being marketed all the time, and they sell at a marked discount from prices obtained for choice beefs, there being a wide spread in prices.

Horse Owners Should Use

GOMBAULT'S CAUSTIC BALSAM

The Great French Veterinary Remedy.
A SAFE, SPEEDY & POSITIVE CURE.

Prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.



SUPERSEDES ALL CAUTERY OR FIRING.

Impossible to produce any scar or blemish. The safest best Blister ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses or Cattle.

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

WE GUARANTEE that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

\$30,000

Automobile Damage Cases Settled for \$2400

John Abeare, of Bay County, while driving his automobile in West Bay City had an accident, April 29th, 1916. William McGifford was knocked down and run over and Edward Hauser knocked down and injured; McGifford died about fifteen days later. There was a conflict among the witnesses, and the administratrix of the estate of William McGifford brought suit against John Abeare for \$25,000, and Edward Hauser brought suit for \$5,000. Mr. Abeare was insured in the Citizens' Mutual Automobile Insurance Company, of Howell. The evidence was looked up carefully and attorneys employed to defend the case. What looked like two years of litigation was brought to a close, and a settlement was reached for the sum of \$2,400 to settle both cases. Checks were mailed from Howell under date of October 30th, 1916.

Seeds Wanted

Soy Beans, Cow Peas, Field Peas, Vetch, Sweet Clover, Alfalfa. **Edw. E. EVANS, West Branch, Michigan.**

Many Government Farmers Needed. Big salaries. Permanent job. Write today. Ozment, 177 St. Louis, Mo.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.
November 2, 1916.

Cattle.

Receipts 2865. The run in all departments at the local yards was very heavy this week and owing to the congested condition of all Detroit terminals stock was very slow in getting to the yards, and on Wednesday a large number of the late arrivals went over unsold. Never were Detroit terminals more congested than at present, and this causes much delay that at present cannot be avoided.

In the cattle division the trade was much more active than that of a week ago, but prices were very little if any higher. The quality was as a rule of the common order, and a large number of thin old canners are now coming, the bulk of which are condemned as unfit for feed and should not be shipped here. Milch cows of quality sold well, but common grades were dull. The close was steady as follows: Best heavy steers \$8@8.35; best handy weight butcher steers \$7@7.50; mixed steers and heifers \$6.50@7; handy light butchers \$5.25@6; light butchers \$4.75@5.25; best cows \$5.50@6; butcher cows \$4.50@5; common cows \$4.25@4.50; canners \$3.25@3.85; best heavy bulls \$5.50@6; bologna bulls \$5@5.25; stock bulls \$4.50@5; feeders \$6@6.50; stockers \$4.50@6; milkers and springers \$4@85.

Bishop, B. & H. sold Mich. B. Co. 3 bulls av 1023 at \$5.50; to Mason B. Co. 1 heifer wgh 550 at \$4, 1 steer wgh 1100 at \$7.25, 10 butchers av 677 at \$5.60; to Prentiss 9 stockers av 650 at \$5.50, 12 butchers av 870 at \$5.75, 12 cows av 1070 at \$5.50; to Parker, W. & Co. 17 butchers av 582 at \$4.25, 3 do av 750 at \$5.50, 1 bull wgh 1330 at \$5.50, 5 cows av 1100 at \$4, 8 do av 820 at \$5, 8 do av 903 at \$4, 10 canners av 871 at \$3.85, 25 butchers av 744 at \$5, 13 do av 540 at \$5, 48 steers av 960 at \$7, 10 do av 948 at \$6; to Breitenbeck 16 butchers av 776 at \$5.85; to Mich. B. Co. 2 steers av 1150 at \$8; to Parker, W. & Co. 6 canners av 887 at \$3.60, 2 bulls av 970 at \$5.50, 15 cows av 937 at \$4, 6 do av 991 at \$4, 4 do av 1000 at \$4, 21 steers av 1054 at \$7, 22 do av 1151 at \$7.50, 10 butchers av 810 at \$5; to Sullivan P. Co. 12 steers av 1036 at \$7.25, 1 bull wgh 1220 at \$5.50, 2 cows av 950 at \$4.25, 3 heifers av 933 at \$6, 1 steer wgh 1320 at \$7.25, 6 butchers av 813 at \$6; to Newton B. Co. 6 do av 975 at \$6, 7 cows av 888 at \$5, 8 do av 862 at \$5.75; to Sullivan P. Co. 28 steers av 975 at \$8.35.

Veal Calves.

Receipts 1121. The veal calf trade was not as good as last week, few selling above \$10.50 and at the close on Thursday it was hard work to get this price and heavy and cull calves are not wanted. We quote: Best \$10@10.50; heavy \$4.50@5.50.

Haley & M. sold Sullivan P. Co. 4 av 130 at \$10.50, 6 av 145 at \$10.50, 2 av 160 at \$10.50; to Hammond, S. & Co. 3 av 140 at \$10, 3 av 95 at \$7, 10 av 140 at \$10.50, 9 av 150 at \$10, 2 av 195 at \$10.

Erwin, S. & J. sold Rattkowsky 7 av 175 at \$10.75, 3 av 250 at \$6, 6 av 120 at \$7.50; to Demora 3 av 135 at \$10.

Sheep and Lambs.

Receipts 12,026. The sheep and lamb trade on Wednesday averaged about a dime lower than last week on lambs, and strong on sheep. On Thursday Chicago was 10c higher and the advance was followed here, selling as follows: Best lambs \$10.40@10.50; fair lambs \$9.50@10.25; light to common lambs \$8@8.75; fair to good sheep \$6.25@7; culls and common \$4@5.

Sandel, S., B. & G. sold Thompson 9 lambs av 45 at \$8.25, 65 do av 78 at \$10.10, 34 do av 75 at \$10.35; to Hammond, S. & Co. 21 do av 80 at \$10.35, 86 do av 65 at \$10.25; to Costello 27 do av 67 at \$9.50; to Pontiac P. Co. 6 sheep av 120 at \$6, 19 do av 110 at \$6.85; to Hammond, S. & Co. 26 lambs av 85 at \$10.35; to Nagle P. Co. 31 do av 85 at \$10.25, 65 do av 75 at \$10.20, 40 do av 70 at \$10.25, 52 do av 115 at \$10.20.

Hogs.

Receipts 20,675. The run of hogs was very large and the quality common, being made up largely of pigs and light grades. The market was steady with Wednesday, pigs selling at \$8@8.75; mixed grades \$9.20@9.60. This is big 25c lower than at the same period a week ago.

DON'T BE MISLED

The Prohibition question is a social, moral and economic question.

It has no place in party politics.

The sponsors of the dry movement do not want it connected up with the personal candidacy of any individual.

Mr. Luren D. Dickinson refused to be a candidate for Governor on this ground.

Albert E. Sleeper, the Republican candidate for Governor, and Republican candidates for state and county offices, all pledge themselves to enforce the laws and make MICHIGAN DRY if the Prohibition amendment carries.

If it is defeated Albert E. Sleeper will insist on a strict enforcement of the present liquor laws or those which may be passed by the legislature.

Vote for Albert E. Sleeper for Governor, Luren D. Dickinson for Lieutenant Governor, Alex J. Groesbeck for Attorney General, Coleman C. Vaughan for Secretary of State, Samuel Odell for State Treasurer, O. B. Fuller for Auditor General, Grant Fellows for Justice of the Supreme Court, and Charles E. Townsend for United States Senator.

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JOHN D. MANGUM, Chairman

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Wanted renter for 140 A. farm; on inter-urban car line 1 1/2 miles from the Michigan Agricultural College; 80 A. cleared; 11 room house; basement barn; concrete silo; must be good live stock man. Possession March 1st, 1917. Write **C. A. Willson**, 1710 Yale Ave., Knoxville, Tenn.

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If you wish to buy, sell or exchange a Farm, write me at once what you have. There was never a better time to deal. **U. G. Reynolds**, Gladwin, Michigan.

160 Acres, level clay loam, no waste, past-dwelling, basement barn, good repair, 670.00 acre, terms. **Gleason, The Farm Man**, Greenville, Mich.

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Milk and Public Health

By FLOYD W. ROBISON

There is one phase of the milk problem which gives dairymen and officials a very great deal of concern and that is the bearing of milk upon epidemics of typhoid fever.

With altogether too great frequency we have been able to trace epidemics of this disease in cities to the route of one particular milkman. A few years ago in the city of Lansing, as a result of an inquiry into a number of cases of typhoid fever which developed almost at the same time, it was discovered that all of these cases were in families where milk was being taken from one and the same milkman, and the closest scrutiny of conditions of the dairy farm established the fact that there was a well-developed case of typhoid fever in the home of the dairyman. The bacillus of typhoid fever was not identified, neither was any attempt made to identify it, for the surrounding circumstances were sufficiently plain to establish to any reasonable person the fact that the source of the epidemic was the dairy farm.

Typhoid Carried by Flies.

Just exactly how the disease in the home of the dairyman becomes transmitted to the milk is not at all easy in most circumstances to determine. It must be that frequently it is carried through the medium of flies. It is a well-known fact that flies are a very great contributing cause of the distribution of this disease and this knowledge, if it were the only crime to be laid to the door of the fly is amply sufficient to warrant the regulations which exist in some cities, requiring that the stable where milking is done and the milk house where the straining operations are carried on, and the bottling is performed, should be well protected from flies by efficient screening.

A city the size of Detroit probably secures its supply of milk from perhaps 5,000 dairies and when it is realized that a city draws upon such an immense supply, such an enormous territory, for its milk supply it may easily be seen that in some of these places very undesirable methods may be in vogue.

The Disease May Get a Good Start Before it is Known to Exist.

Another serious feature of typhoid fever in relation to milk is the fact that very frequently the disease is not diagnosed until the second or third week in which cases if any opportunity for infection exists at the dairy farm a serious epidemic along the milk route may be well started.

There should be no hesitancy on the part of the attending physician, particularly if it has any suggestion of the symptoms of typhoid, to guard against any possible infection of that milk supply.

There are many ways in which milk may become infected when typhoid exists on the premises of the dairyman. Very frequently those in charge of the milking operations must of necessity go from the caring for the patient to the operation of taking care of the milk, and with a product so entirely susceptible as milk it is not an easy matter to avoid accidental infection. Again, typhoid fever is a type of disease in which a certain immunity is established once a patient contracts the disease. As a consequence of this the patient himself may be entirely recovered and still transmit the disease, in other words, he is called a "carrier of infection."

Polluted Water Supply Responsible for Much Typhoid.

Aside from personal contact the condition of the milk utensils, milk bottles, milk caps, etc., is responsible in many instances for the transmitting of the disease. Another cause which we have found particularly prevalent in Michigan has been the infection of milk through a pollution of the water

supply on the farm. It is not at all necessary that milk should be adulterated with water in order to have an infected water supply contaminate the milk supply, but rarely on the general purpose farms where milk is produced in connection with a very great variety of farming, in other words, where dairying is not a specialty, are there adequate provisions for sterilizing the utensils, milk pails, strainers, etc. We were able to trace a few years ago an epidemic of typhoid fever in the city of Jackson to just exactly such a condition as this. There was no question of the diluting of milk with water but all of the utensils were rinsed and washed in a contaminated water supply, and the consensus of opinion of those investigating the case was that it was due to this water supply that the milk became infected.

The Consumer is Helpless.

Of course, one may easily see how an infected milk supply may easily spread through a very great section of a city. The dairy farmer is not the only source of danger from typhoid fever. There is also danger in the city because the personal factor there enters in just the same as on the dairy farm although it must be admitted that the opportunity for infection in the city dairy is not nearly as great as on the farm. The milk is not handled as much by hand, but more through pumps and various mechanical operations where the opportunity for infection is not nearly so great. It is true that the possibility of infection through flies in the city dairy or creamery is very great, and we have found many city creameries and dairies which were very poorly protected indeed from the fly nuisance. Of course, at either the farm dairy, or the city dairy or creamery an infection is equally serious because it becomes distributed to such a large number of homes. Very frequently, however, when the milk reaches the consumer's home in a perfect condition the opportunity for infection is very great in this home; but, of course, in this instance the conditions at the home and not the milk are to be blamed. The only redeeming feature of this is that the epidemic is confined within the confines of the home itself.

It is only within comparatively recent years that milk has been considered a source of typhoid infection. We have thought of the water supply repeatedly as the cause of epidemics of typhoid fever, and very frequently still the real, original cause of an epidemic is the water supply. Probably in most instances is the water supply to be blamed more than any other cause for, of course, when the water supply becomes contaminated then it may easily spread to the milk supply.

Not all Persons Contract the Disease.

One obstacle which is frequently thrown in the way of the physician before diagnosing the cause of an epidemic of typhoid fever is the obstinacy of some individuals who insist that the milk supply cannot be the cause of the epidemic because so many patrons on the road who have taken the milk regularly have not contracted the disease. But it must be borne in mind that the individual susceptibility of a person has much to do with the probability of his contracting the disease. Some people seem to build up an enormous resistance to the disease and so it may be seen that while a hundred people are drinking an infected milk or water supply a comparatively small number may contract the disease. Any sudden or marked increase in the number of illnesses reported should be the subject of a very careful investigation to ascertain if the epidemic may not be due to some one source. With as great information as our dairy and food departments, and boards of health now have regarding the history of typhoid fever and proper methods for its con-

trol there should be little difficulty in promptly checking any infection which occurs. The dairyman should realize also that it is decidedly to his best interests to promptly co-operate with the officials in stamping out the infection, for if allowed to continue, not only is it a crime against humanity but it will also ruin the business of the dairyman as well.

Inspection and Analysis the Best Safeguards.

Unquestionably one of the very best methods of control is to have adequate inspection at the source of the milk supply. In this case a laboratory analysis of the milk while meaning much is not always adequate to establish perfect security but when it is coupled with adequate inspection at the dairy farm there should be little opportunity for any milk-borne diseases.

Much is accomplished also by a careful location of the dairy itself and the study by the farmer or dairyman of his water supply. No dairyman should be selling milk to his neighbors or to the general city milk supply who has not had the water on his premises very carefully examined to establish its purity, and who has not taken proper precautions to guard the purity by sufficient drainage around the well. In a manufacturing establishment such carelessness in this respect and unconcern, whether it is intentional, or through lack of appreciation of the problem as it exists, would not in the present day be permitted for a moment.

As a further precaution until more adequate inspection and analysis of the milk may be had and maintained by municipalities it is probably just as well that efficient pasteurization of the milk at the city dairy or creamery should be insisted upon. To make pasteurization mean anything, so that it will not become a source of danger itself, this pasteurization should be rigidly controlled, if possible, under the eye of the municipal authorities.

THE BEAN SITUATION.

Bean threshing is in progress, and the results are what was expected. The yield is from three to five bushels, machine measure, to the acre, with now and then a better showing. Some fields are of fair quality, and some are so poor they can be used for hog or sheep feed only. The early planted beans fared the worst. Some planted early in July gave a small crop. Now the situation is thoroughly known it is up to the grower to see that he, and not the jobber, gets the lion's share of the profits. Beans are quoted in the local market at \$4.75 per bushel, but early in the summer when the crop of 1915 was all in the hands of the jobber the price was up to \$6.00 and \$7.00 per bushel, and that is just what will happen again this year unless the growers follow the advice which has been given them, to hold on to the crop when the price drops below \$5.00. Nobody need worry about the jobber; he is sure to make his profit all right, but if the chance comes his way he will take his own profit and what should go to the grower.

Some of the farmers in this section raised contract beans. They agreed to pay \$2.50 per bushel for seed furnished, and to sell their crop at that figure. These contract beans were planted early in June, and failed to produce any crop, so that the deluded farmer is out of pocket the price of the seed he used and the value of his labor. It is said, "Lightning never strikes twice in the same place," but that may be due to the fact that the place is seldom there to be struck again. However, the farmers are there, and have been hit hard two years in succession, on the bean crop. It remains to be seen what another year will bring forth.

Eaton Co. APOLLOS LONG.

Education will not make people happy unless it is directed into useful channels.—Lord.



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 Lecturer—Dora H. Stockman, Lansing.
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MECOSTA POMONA MEETING.

Mecosta County Pomona Grange held their annual convention at Big Rapids, October 3. The meeting was called to order at 10:30. The Subordinate Granges of the county were well represented, 28 delegates being present.

After the regular order of business F. W. Corbett, of Capitol Grange, near Lansing, leader for the dry campaign for Mecosta county, gave a short talk on the state-wide prohibition and home rule, and gave the Grange a very cordial invitation to attend a meeting and banquet given by the ladies of the First Methodist Church in the basement at 11:30. The Grange marched in a body to the church, where they greatly enjoyed the fine dinner and will long remember the ladies that so cheerfully served them.

The after-dinner talks were both pleasant and instructive. The Grange was again called to order at 1:30.

Delegates were elected to be sent to Michigan State Grange to be held in Lansing in December. Mr. and Mrs. John Kotke, Mr. and Mrs. Allan Edgerley, of Aetna Grange, were chosen subordinate delegates. Mr. Hoyt, of Forrest Grange, and Miss Mary Waldron, of Pleasantview, Pomona delegates.

Pomona Grange officers for the next two years are as follows: Master, John Kotke; overseer, Lloyd Lardner; lecturer, Mrs. V. R. Wilson; steward, Frank Schoellkopf; chaplain, Mrs. John Kotke; secretary-treasurer, Clarence Rood; gate keeper, Fred Sherman; assistant steward, Eugene Lardner; lady assistant steward, Mrs. Eugene Lardner.

It was decided to send representatives before the board of supervisors at their next session to use their influence in favor of the securing of a county agent. The following counties in this section have tried the plan with good results: Wexford, Mason, Newaygo and Kent.

Many other interesting discussions were taken part in. Some fine selections of music by Mrs. Roberts were greatly enjoyed and one more pleasant day was closed in Pomona Grange history.

GRANGES ORGANIZED AND RE-ORGANIZED.

Granges organized and reorganized from October 1, 1915, to September 30, 1916, both inclusive, as follows:

Organized.

California 3; Colorado 43; Delaware 1; Idaho 7; Illinois 3; Indiana 12; Iowa 7; Kansas 77; Maine 2; Maryland 11; Massachusetts 2; Michigan 19; Missouri 13; Montana 5; Nebraska 16; New Jersey 2; New York 17; North Dakota 6; Ohio 64; Oklahoma 22; Oregon 12; Pennsylvania 35; South Dakota 6; Vermont 2; Washington 34; West Virginia 12; Wisconsin 3; Wyoming 1. Total, 437.

Re-Organized.

Idaho 2; Kentucky 1; Maine 1; Ohio 4; Pennsylvania 3; South Dakota 2; Vermont 2; Washington 5. Total, 20.

Farmers' Clubs

CLUB DISCUSSIONS.

A "Dry" Program.—Salem Farmers' Club held its October meeting at the pleasant and commodious home of Mr. and Mrs. Webb Lane. After the bountiful dinner had been served to a goodly number of guests and members of the Club, the program was given. Robert Ross spoke on his recent trip into Ohio and the many places he passed through, when it was more than evident that the saloons were wide open, and the painful sight of well dressed men—drunk—exceeded the bad effects which we see too often in our own towns. As this is a meeting in the interest of "Making Michigan Dry," we next listened to very forceful arguments presented by N. C. Fetter, manager of the dry campaign in Washtenaw county. He said: "The majority of people believe the saloon is a menace to society, to governmental life, and child life. But all people do not take the stand of their convictions. The farmer is more free, more independent. His table is filled with the best magazines. He is informed, and he can act more independent than the business man." Mr. Fetter gave many statistics to show that the saloon is evil, and only evil, and the thinking farmers present gave an enthusiastic reception to his words. Arrangements were made for putting up posters and scattering literature. Mr. Fetter reminded the voters that every man must vote twice in the coming election. Yes, for state-wide prohibition. No, for the home rule liquor measure. Music and recitations were also enjoyed, and the Club adjourned, having given many thoughts as to how they can make this old world a cleaner and better place in which to live.—H. C. T., Reporter.

Affiliate with Audubon Society.—The October meeting of the Ingham County Farmers' Club was one of unusual interest, in that it was designated "Chapin Day," and held at the homestead of A. M. Chapin, deceased, one of the charter members of this Club. More than 80 members and their friends gathered at the hospitable home of Mrs. Carrie Chapin at Variety Grove, and it surely was good to be there. President Allen called the meeting to order and after words of welcome by John Chapin and Rosalind Baker, Miss Lillian McCormick gave a piano solo. Mrs. Eva Haskell Morse called the roll, which was answered by the women by each giving their pet convenience. This ranged from the husband's collar button, the gasoline engine, the screened porch, family home, to the bread mixer, carpet sweeper, fly trap and many others. Almon M. Chapin spoke upon commercial fertilizers. He said in part, the problem of every farmer is how to keep his soil fertile. This may be comparatively easy to the one who keeps live stock, but comparatively few keep enough to keep up the fertility and to sell the crops year after year ruins the land. It costs as much to harvest 10 bushels of grain to the acre as it would thirty. Nitrogen, phosphorus and potash are the three elements necessary to keep up the fertility. Sandy soil will be lacking all three. Muck will be especially short in potash. Clover especially returns nitrogen to the soil. But few farmers have the nerve to plow under a good crop of clover, so the next thing is to use the commercial fertilizer and the cheaper the grade of fertilizer the more filler there is in it. Mrs. Taylor, as a member of the Audubon committee, appointed at a previous meeting to report about an Audubon society, said that sickness had prevented a meeting, but the members had talked about the question and there seemed two ways to get at the result: Having a separate society, or a permanent committee of the Club; in either case suggested Mrs. Ives as the president or chairman. After some discussion it was moved and supported that the president appoint a committee of three, with Mrs. Ives as chairman, to look after the interests of the birds. The money paid for membership in the state society will be duly forwarded as soon as the committee gets to work. The Club adjourned to the second Saturday in November, "Woman's Day," with Mr. and Mrs. A. H. Laycock.—Mrs. Tanswell, Cor. Sec.

"MISTER 44."

Every member of the family should turn to the magazine department of this issue and read the first installment of one of the best stories ever presented to our readers. It has action, thrilling climaxes, human interest, love, intrigue and all that goes to make a story entertaining and instructive. Read the first chapters.



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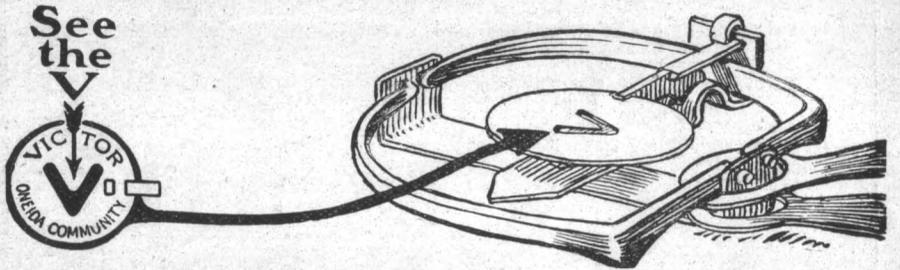
THERE'S a quick sale for fur of skunk and muskrat.

Get busy this Fall and have your boy set a dozen Victor traps around the farm every evening right along till Spring. There's plenty of spare time in winter anyway.

Some farmers make several hundred dollars at it. The Victors grab the little pests by the leg and hold them tight.

Start with a half dozen Victors. (You can get them from any hardware dealer.) They will pay for themselves—and a good profit besides in your first week of trapping.

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No President or administration has shown such keen regard for the welfare of the farmer as is expressed in the now famous RURAL CREDITS ACT, passed by the Wilson administration.

If You Approve Governor Ferris' Administration Vote for
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His Firmness of Character and Constructive Executive Ability Assure a Continuance of the Ferris Record

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Cook your feed and you save feed. It costs less than raw and keeps your animals in a healthier condition. Tastes better, is bigger in bulk, more digestible and more nourishing.

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means more meat and fat, more milk and eggs. It prevents hog cholera. Use it to take the chill off water in winter, heating water for scalding hogs and poultry, rendering lard and tallow, sterilizing dairy utensils, heating water on wash day, etc. Set up anywhere, 25 to 100 gal. capacity—four sizes between. 30 days free trial. Guaranteed to the limit. Free catalog.

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Grind corn and cobs; feed, table meal and alfalfa. On the market 50 years. Hand and power. 28 styles. \$3.80 to \$40. FREE TRIAL. Write for catalog and farm machinery bargain book.

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Compare these average figures with average returns per acre in other sections; the average value of all farm products in Florida is \$108.00 per acre.

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- CHAMBER OF COMMERCE, Jacksonville, Florida
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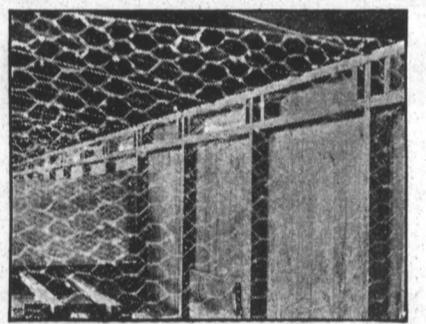
PRACTICAL HOUSES FOR FARM POULTRY.

(Continued from first page).
ters to close when the weather is cold. A patent ventilator now on the market opens and closes according to weather conditions, being regulated by a thermostat in the house.

It is a common mistake to make a shed roof house too shallow, the result being that the wind blows directly on the fowls at night if an open-front form of construction is used or if the windows are left open. No house ought to be less than 10 feet deep and it is better to have it 12 feet. If a house of this sort is made deeper than 12 feet it becomes too high in front, but a depth of 14 or 16 feet is permissible when the roof is broken near the front and pitched slightly.

The Shed Roof House.
There is no standard design for a shed roof house, but the rear wall should be about four feet high and the front wall seven or eight if the house is to be convenient to work in. It is a great mistake to make a house so low that the attendant has to stoop every time he enters it.

Prof. J. C. Graham, of the Massachusetts State College of Agriculture, recently built a shed roof house for his own private flock of hens. It is designed to accommodate 100 birds and



Rear Wall Ventilator.
cost a little less than \$100. It stands on a foundation of flat stones, has an earth floor about a foot higher than the ground outside and is covered with roofing paper. A single wall house will be satisfactory in most parts of the country if covered with a good quality of paper on sides as well as on the roof or if made of matched boards and papered only on the back and roof. If boards planed on only one side are used, as they probably will be, the smooth sides of the boards should face in.

Paper is really better than shingles on the roof if the slope is not steep, for water would be likely to work in around the shingles and cause the roof to leak. In figuring the size and cost of a house, about four square feet of space should be allowed for each hen, unless the pens are to be very small. Three feet per hen will be sufficient in a long house not divided into pens, and many poultrymen are now building such houses, finding that their birds lay practically as well when kept in large flocks as when split up into small flocks, and of course the labor of caring for them is much reduced.

The Use of Muslin Curtains.
As a rule, the shed roof is not adapted to a full open front form of construction. It is better in such a house to have long openings about two feet above the floor with muslin curtains which can be lowered when a high wind is blowing or a driving rain storm in progress. These curtains may be tacked to a hinged frame, but it is better to have them on rollers like house shades, for then they do not get filled with dust so quickly. Muslin, the pores of which is stepped with dust, is but little better than boards so far as ventilation is concerned. Muslin curtains admit light but not direct sunshine and in practice should not be used very often. It is a decided advantage to have a glass window set into the front wall below the openings and close to the floor, because it will admit sunlight very early in the morning

in winter, allowing the fowls to bask in it almost as soon as they are off the roosts. It is also well to have a window in the west end.

Although wooden poultry houses are usually built, other materials are sometimes used. Hollow tile makes an ideal house, cool in summer and warm in winter, but it costs at least 25 per cent more than lumber. Cement houses can not be considered wholly satisfactory, but if used, an open type form of construction should be adopted and sunlight admitted freely. Stucco board is being employed with success in some parts of the country and reduces the cost probably ten per cent over lumber. A frame of timber is first put up as for any house and then the stucco board, which comes in large squares, is nailed in place. When finished such a house looks much as though made of stucco, and presents a very pleasing appearance. The writer has used this material and likes it. It is more sanitary than wood and easily cleaned, as the inside surface is smooth.

The Furnishings.
Every poultry house should be built in such a way that constant warfare can be waged on vermin. Roosts, nests and all other fixtures should be profitable. It is a common plan to place the nests under the dropping boards, but in the writer's opinion it is a much better plan to have them hung to the side walls. It is a question whether the common type of nest is the best kind, anyway. Several poultry keepers are having better results with nest boxes eight or ten feet without any divisions and with openings only at the ends, although the front board is hinged and may be raised to remove the eggs and put in nesting material. There is no fighting and no crowding in a nest box of this kind. The hens make their own nests in the hay and do not bother each other, with the result that there are fewer broken eggs.

It is also a question whether dropping boards are of any value, except in very small houses or where it is desired to have the unmixed manure. Dropping boards were introduced when it was profitable to save the manure to sell to tanning factories. Now they are accepted as a matter of course, but it is much more sanitary to set up a board in the floor about a foot in front of the perches and to keep a little litter in the space back of this board for the droppings to fall into. Then there are no foul fumes ascending from just under the birds all night and the labor of having the houses cleaned is minimized, for it will not be necessary to remove the accumulation of droppings and litter oftener than once a month.

The Roosting Place.
If dropping boards are to be used, however, they should be so arranged that they can be quickly removed and should be high enough so that the fowls can move about freely under them. The roosting perches should be 10 or 12 inches above the dropping boards, or about two feet above the floor when dropping boards are discarded. The best perches are made of 2x4 scantling planed smooth. The scantling may have the wide or the narrow side uppermost; the fowls seem to have no preference. If there are several perches it is advisable to have them the same level, or the birds will fight for the one which is highest. At least seven inches of perch room should be allowed for birds of the Leghorn type. Larger breeds like Rhode Island Reds will require nine inches, while Brahmans and Cochins should have ten. If nests of the common type are used, they should be at least 12 inches square and about 14 inches high. Egg crates are often used for nests and serve the purpose well enough. Hens lay just as well in open as in dark nests. The one advantage of the latter is that they tend to prevent development of the egg-eating habit. There should be a nest for every four or five hens.

When a cement foundation can be

afforded, it will be to the advantage of the poultryman to put one in. If extended two feet below the ground and eight or ten inches above, it will be rat proof. The cost of a cement foundation averages five to seven dollars a square yard. Many poultrymen are also putting in cement floors, the cost being figured on a basis of ten cents a square foot. Such floors are easy to keep clean, but they will be damp unless at least a foot of cinders can be placed under them, and they should be kept covered with litter. When cement cannot be used for floors or foundation it is well to sink inch-mesh poultry wire two feet into the ground all around the house to keep out the rats. Another plan is to excavate six inches of the earth floor and cover the space with poultry wire, making it fast to the tops of the sills. Then the earth can be replaced and compacted. Of course, the floor must always be raised several inches above the ground outside, in order to keep it dry.

FATTENING TURKEYS.

Late hatched turkeys should, if possible, be separated from the flock that is being fed for the Thanksgiving market. Usually the Christmas market is as good as Thanksgiving and immature birds will improve wonderfully in the next month. Birds not up to weight will not bring the top price and a few of them in a shipment of good birds will cause the whole lot to bring a reduced price. On the other hand, it is unprofitable to hold turkeys after they are matured, and long-continued feeding never pays with turkeys. Three weeks' steady feeding will put these birds in prime condition, after which they should be sent to market at once. If kept over this time they will lose in weight.

It is not best to give fattening turkeys too much feed for the morning meal. This makes them lazy and they do not put on flesh as well as when they forage during the day and pick up different kinds of feed. We find they eat more when grain is scattered than when it is put in the feeding trough. No sudden changes should be made in feeding them.

Oats may be fed to advantage at this time, either soaked over night in water or ground with bran, mixed with skim-milk to form a crumbly mash. A little old corn with the new prevents bowel trouble and makes firmer flesh than new corn alone.

Pure fresh water, good sharp grit and charcoal are important factors in fattening, and care must be taken not to overfeed.

We don't like to have the turkeys roost in trees at this time for it takes a little of their surplus fat to keep them warm and it's some trouble to climb after them when wanted for the market. They can be trained to roost inside a shed or building if they are not too wild. **FRANCES WOOD.**

RHEUMATISM.

Will you please tell us what disease our hens have. They get lame in one foot and go limping around, and after a while they get lame in both feet. Then they get so they can not walk at all, and sit down with their feet behind them. Some tell us that it is rheumatism, but we do not think so, as it is catching. Will you please tell us, as it is cleaning out our flock fast? **Clare Co. W. D.**

There is little doubt but what your hens have rheumatism. This disease is caused by exposure to dampness, and inasmuch as all the fowls in the flock are exposed to the same conditions, a great many of them will have it. The disease is not contagious, but spreads on account of the conditions under which the fowls live.

There is no cure for the trouble except to remedy the conditions about the coops and poultry yards which cause the dampness. In addition care should be taken to give the chickens nothing but clean food and water and plenty of green food.

Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers. Besides the money saved they save the trouble and expense of sending each order separately.

EXPLANATION.—The first column gives the paper's regular subscription price. The second column price is for the Michigan Farmer and the other paper, both for one year. Add 50 cents when the Michigan Farmer is wanted three years, or \$1.00 if the Michigan Farmer is wanted five years. All combination orders may be handed to our agents or sent to us, as is most convenient.

Write for prices on publications not listed.

Subscribers to the Michigan Farmer whose time is not up for one year or more, may have as many other papers as wanted by deducting 50 cents from the second column price. This takes care of those who subscribed for three or five years a year or two ago.

We send sample copies of the Michigan Farmer only.

Mention if you are a new or renewal subscriber. Renewals will be dated ahead from their present date.

NAME OF PUBLICATION.	See explanation above	\$	¢
Daily, (6 a Week) on R. F. D. only.			
Free Press, Detroit.....	2 50	2	75
Journal, Detroit.....	3 00	3	00
Times, Detroit.....	2 50	3	00
Herald, Grand Rapids, Mich.....	2 50	2	50
News, Grand Rapids.....	2 00	2	00
Press, Grand Rapids.....	2 02	2	55
Courier-Herald, Saginaw, Mich.....	2 50	2	50
News, Saginaw.....	2 00	2	00
Blade, Toledo, Ohio.....	2 00	2	05
News-Base, Toledo, Ohio.....	2 75	2	80
State Journal, Lansing, Mich.....	2 50	3	00
Tri Weekly Newspapers			
World, N. Y. City.....	1 00	1	30
Semi Weekly Newspapers			
Journal, Detroit, Mich.....	1 10	1	25
Weekly Newspapers			
Blade, Toledo, Ohio.....	1 00	1	00
Commoner, Lincoln, Neb.....	1 00	1	05
Enquirer, Cincinnati, O.....	75	95	
Cattle, Sheep, Swine, Poultry, etc.			
American Hog Journal, Hamilton, Ill. (w).....	1 00	1	05
American Poultry Advocate, Syracuse, N. Y. (w).....	50	75	
American Sheep Breeder, Chicago (m).....	50	1	15
American Swineherd, Chicago (m).....	50	85	
Green's Fruit Grower, Rochester, (m).....	50	80	
Hoard's Dairyman, Fort Atkinson, Wis. (w).....	1 00	1	20
Jersey Bulletin, Indianapolis, Ind. (w).....	1 00	1	35
Kimball's Dairy Farmer, Waterloo, Ia. (w-m).....	25	70	
Poultry Keeper, Quincy, Ill. (m).....	50	80	
Poultry Success, Springfield, O. (m).....	50	75	
Reliable Poultry Journal, Quincy, Ill. (m).....	50	80	
Swine Breeders Journal, Indianapolis, Ind. (w-m).....	50	90	
Michigan Poultry Breeder (mo).....	50	80	
Popular Magazines.			
Everybody's Magazine, N. Y. City. (m).....	1 50	1	60
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Orders may be sent direct to us or through any of our agents. Order by number. Address all orders to the Michigan Farmer, or hand to our agents.

EXPLANATION.—Wk. means the paper comes each week; mo. means each month; \$-mo. semi-monthly. Dailies on R. F. D. only.

Publishers of other papers will not allow us to quote their paper single at less than their regular prices, but Subscribers to the Michigan Farmer whose term does not expire for one year or more will be allowed reduced prices on other papers at any time if they will write us the ones wanted. This also applies when other papers are wanted not in the clubs they select.

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

Reg. Guernsey Bulls, serviceable age, great grand sons of Gov. Chene, also grade Guernsey and Jersey heifers 6 wks old \$20 each. Avondale Stock Farm, Wayne, Mich.

Guernsey Bulls of service age and calves from choice. Adv. reg. breeding. T. V. HICKS, Route 1, Battle Creek, Mich.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM GUERNSEYS

Average yearly production 422.3 lbs. of fat, three fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made. The breeding of the Beach Farm Herd is as good as can be found, and we guarantee them to be free from contagious diseases and to be satisfactory in every way or money refunded. Write and let us tell you about them.

CAMPBELL & ANGEVINE, Coldwater, Michigan.

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

FOR SALE Registered Guernsey Bull, 4 year old also 3 yearlings the best yet, Cheap. John Ebel, Holland, R. 10, Box 129, Michigan.

GUERNSEYS: Bred heifers, mature cows, bull calves from a long line of Adv. Reg. ancestors with large record. G. A. WIGENT, Watervliet, Michigan.

For Sale: Registered Guernsey Bulls old enough for service, and bull calves from advanced registered cows. L. J. Byers, Coldwater, Mich.

Reg. Guernsey Bulls two gr. sons of May Rose King of Lenda Vista (the \$4600 bull) one 12 mo. old dam May Rose breeding one 6 mo. old, others of serviceable age. Satisfaction guaranteed. Alfred Anderson, Holton, Michigan.

Guernseys—2 fine yearling heifers for sale, bred to May Rose Bull—they are beauties—you can buy them right. J. M. WILLIAMS, North Adams, Mich.

CLUNY STOCK Farm Holsteins

JUST THREE yearling sons of Crown Pontiac Korndyke, No. 48,712, whose first ten tested daughters to freshen produced at an average age of 2 yrs. 4 mos. 20 days; Butter, 21,215 lbs., Milk 398.1 lbs.

- No. 1. Dam's 7 day record: Butter 29,521 lbs., Milk, 667.9 lbs.
No. 2. Dam's 7 day record: Butter, 24,620 lbs., Milk, 50.43 lbs., at 4 yrs. 7 mos, 11 days.
No. 3. Dam's 7 day record: Butter, 25,386 lbs., Milk, 448.7 lbs. No. 3 is the granddam of No. 2.

These young sires combine heavy Milk and Butter production with size and quality. All are light in color and splendidly marked. Come and see them or write for pedigrees and prices.

R. B. McPherson, Howell, Michigan

Do You Want A Bull? Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/4 fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

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"TOPNOTCH" Holsteins

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

FEMALES---FOR SALE---FEMALES

25 Head Registered Holsteins

Many with A. R. O. records, some up to 23 lbs. Mostly 2 to 5 years old—a few yearlings. No better breeding anywhere. From Granddams of: King of the Pontiacs, DeKol 2nd., Butter Boy 3rd., and King Segis. Will be sold at auction prices. Send for list.

Bigelow's Holstein Farms

Breedsville, - - - Michigan.

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

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

30 lb. bull for sale, 2 years old, by a son of King of the Pontiacs. Dam sold for \$1000 in Detroit sale. Ferd. J. Lange, Sebawang, Mich.

HOLSTIENS

Herd No. 1. Five cows, one two year old bull. Herd No. 2. Five yearling heifers, one yearling bull. Herd No. 3. Five Heifer calves and one bull. Bulls ready for service and 6 to eight months old bulls. Prices will please you. If interested, write as soon as you read this. L. E. CONNELL, Fayette, Ohio.

REGISTERED Holstein cows, heifers and heifer calves priced to sell, also bu is ready for service. B. B. REAVEY, AKRON, MICHIGAN.

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$20.00 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis.

Holstein Friesian Cattle

A. R. O. herd tuberculin tested, headed by grandson of King Segis Pontiac. PEACELAND STOCK FARM, Three Rivers, Mich. Chas. Peters, Herdsman, C. L. Brody, Owner, Port Huron

Registered Holsteins. Young bull ready for service. 30 lb. breeding. Satisfaction guaranteed. W. B. Jones and J. F. Lutz, Cohoctah, Mich.

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4 to 12 Mo. World record sire. High testing dams—from \$99 up to \$299. Let us send you one on trial. You should not buy until you get our book.

Long Beach Farm, AUGUSTA, (Kalamazoo Co.) MICH.

REG. HOLSTIENS: Herd headed by Albina Bonte Butter Bv No. 93124. Dam's record at 6 yrs. butter 28,53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 802 lbs. milk 1822 lbs. W. B. READER, Howell, Mich.

Bull Calves

From A. R. O. Dams, Sired by "Maplecrest Korndyke Hengerveld," whose Dam, "Maplecrest Pontiac Flora Hartog," is one of the four 1200 pound daughters of "Pontiac Aggie Korndyke." Write us about these Calves, and our,

Berkshires And we will quote prices that will move them. Swigartdale Farm, Petersburg, Mich.

Reg. Holstein Bulls ready for service from 20 lb. four yr. old dams. \$75 each. Dewey C. Pierson, Hadley, Michigan.

FORSALE Four Holstein calves sired by Pontiac Alcartra the \$50,000 bull. Fine individuals, 3 females, 1 male. Sindlinger Bros., Lake Odessa, Mich.

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The All-Around Jersey is the farmer's cow. She's his friend and pride—the beautiful, gentle, ever-paying milk machine that lifts the mortgage, builds up the fertility of the farm, and puts the whole business on a sound, paying, permanent basis. She adapts herself to all climates and all feeds and does not need fancy care. She matures early and lives long. And she's so sleek, clean cut and handsome, as to be the family pet and pride. She produces well and sells well. Learn about her in our fine, free book, "About Jersey Cattle." Write for it now. THE AMERICAN JERSEY CATTLE CLUB 346 West 23d St., N. Y. City

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

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R. of M. JERSEY HERD offers for sale, tuberculin tested bulls, bull calves and heifer calves carrying the blood of the greatest producers of the breed. IRVIN FOX, Allegan, Mich.

REGISTERED JERSEY BULLS FOR SALE 1 yearling, and Bull calves from 8 to 10 months old. Also 3 cows. Write your wants. SMITH-PARKER, R. D. No. 4, Howell, Michigan

Registered Jersey Bulls One coming three yearlings Eminent Breeding from high producing dams. Price \$50 to \$75. C. Bristol, Fenton, Michigan.

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The Wildwood Farm Jersey Cattle, Majesty Blood. We have Bulls for sale from Register of Merit cows of good type. Write your wants. Alvin Balden, Capac, Michigan.

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For "Beef and Milk" Registered bulls, Scotch-topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & I. R'y. Address G. R. Schroder Mgr. BIDWELL STOCK FARM Box B, Tecumseh, Mich. Albion Stamp 352670

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

DAIRY BRED Shorthorns of best Bates strains, young bull 8 months old for sale, price \$150. J. B. HUMMELL, MA SON, MICHIGAN.

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

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

Shorthorns, roan 3 year old. Bates bred herd bull \$250. Young bulls and heifers. DAVIDSON & HALL, TUCUMSEH, MICHIGAN.

HEREFORDS 12 Bull Calves 10 Heifer Calves ALLEN BROS., PAW PAW, MICH.

SHORTHORNS FOR SALE 8 Bulls, also females. W. B. McQuillan, Howell, Mich.

FOR Sale—Reg. Short Horn Bulls by Maxwalton Monarch 2nd, son of Avondale, from 11 to 13 mos. old John Schmidt, Reed City, R. No. 5, Michigan.

Shorthorns For Sale. Young bulls \$100. Bred cows and heifers \$150 for quick sale. Write W. J. BELL, ROSE CITY, MICHIGAN.

Claradale Milking Shorthorns Two fine bulls ready for service at reduced prices for quick sale, finest pedigree, \$125.00 to \$150.00. F. W. Johnson and Sons, Ouster, Marion Co., Mich.

Of Interest to Feeders For Sale—We have on our Ranch in Isoco Co., Mich., 500 head of steers, selected stock, purchased early in summer at Chicago, Angus, Herefords and Short Horns, for further information write or phone K. R. SMITH, IONIA, MICH.

Cattle For Sale 2 Loads feeders and two loads yearling steers. Also 2 yearling heifers. 1 and 3 years old from 600 to 1200 lbs. Isaac Shanstun, Fairfield, Iowa. R-8.

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

The Very Finest Berkshire Pigs Cheap C. S. BARTLETT, Propr. Pontiac, Michigan

Berkshire Boars and gilts. May farrowed, large growthy fellows. Also a litter just ready to wean. A. A. PATTULLO, R. 4, Deckerville, Mich.

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A choice lot of spring pigs, both sex, pairs and trios, not akin. Prices reasonable. Send for pedigrees. THE JENNING'S FARMS, R. F. D. 1, Bailey, Mich.

Heavy Boned Duroc Jersey Boars March and Apr. farrow, weighing 200 to 250 pounds will be sold as cheap as any man can sell first class stock. M. A. BRAY, Okemos, (Ingham Co.) Mich.

J. W. KEENEY, Erie, Mich. Males, good ones for Dec. Swine. D. M. & T. local from Monroe or Toledo, Keeney Stop.

DUROC JERSEYS Choice pigs sired by Brookwater Farm Cherry King 47585 ready to wean. Priced right. J. Robert Hicks, St. Johns, Mich.

Duroc Jersey Boars Two June 1915; 12 April 1916. Write for description. I guarantee satisfaction. J. H. Banghart, East Lansing, Mich.

Duroc Jerseys. Some yearling & Spring boars good enough to head your herd. Will sell Enreka Cherry King 67145. Ask about him. W. C. Taylor, Milan, Mich.

For Sale, Duroc Jerseys, choice breeding spring pigs either sex. Prices right. John McNicoll, Station A, R. 4, Bay City, Mich.

DUROC JERSEYS: A nice bunch of Spring Gilts, also 3 good Spring Boars old enough for service. Wm. W. Kennedy R. 3, Grass Lake, Mich.

Veterinary.

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

Dislocation of Patella.—I have a three-year-old filly that dislocated her stifle three weeks ago while in pasture and I am unable to keep cap in socket. T. F., Ponca, Mich.—Stand your filly in a stall with fore feet four inches lower than hind, clip hair off stifle and apply one part powdered cantharides and four parts lard every two weeks.

Stretched Ligaments.—I have a two-year-old colt that has had stifle trouble for the past year and I find very little trouble in putting it back into place, but it refuses to remain there. Do you think he can be cured or made fit to do farm work? C. G., Ponca, Mich.—The stifle is kept in position best when the hind feet are placed several inches higher than the fore feet, and in a case of this kind that has been going on for a year; you had better apply one part red iodide mercury, one part powdered cantharides and ten parts fresh lard every two weeks.

Cataract.—One of my cows has lost the sight of one eye, but the other eye seems to be about normal. However, I am inclined to believe that she is almost blind in this best appearing eye. J. S. M., Lum, Mich.—I advise you to leave her eyes alone as she is incurable. Later the best appearing eye will perhaps cloud over, causing an opacity of the eyeball or pupil.

Gastritis—Rheumatism.—We have a Fox Terrier dog two years old that commenced to vomit some ten days ago, and a few hours later a diarrhea set in, but both of these ailments seem very stiff; however, gradually he got to abate, but the dog seemed to grow well of this soreness. He now discharges a slimy mucus from mouth and refuses both food and water. His jaws are not set and he has good use of both body and legs. About the only food he cares for is a fresh egg. W. R. G., Wayne Co.—Give your dog a quarter grain of quinine three or four times a day. Give your dog a quarter grain of quinine, three drops of tincture nux vomica and 20 drops fluid extract gentian at a dose three or four times a day.

Filthy Sheath.—I have two colts, five and 12 months old whose sheath seems to become foul and swell. A. H. H., Kingsley, Mich.—Occasionally wash out sheath with clean water, using some ivory soap and borax, then apply olive oil after the parts dry.

Stifle Weakness.—I have a four months old that has stifle trouble and I might add that it is perhaps the result of navel ailment. G. E., Waucedah, Mich.—Apply equal parts spirits of camphor and camphorated oil to stifle every two days and if this treatment does not effect a cure, apply a light blister.

Chronic Cough—Bunch on Stifle.—I have a four-year-old horse that has been troubled with a cough for the past eight weeks, but shows no symptoms of heaves. I also have a colt three months old with bunch on stifle, causing lameness. J. S., Marion, Mich.—Give your colt 1/2 dr. powdered lobelia, 1 dr. ground ginger, 1/2 oz. of powdered licorice and a tablespoonful of cooking soda at a dose in feed three times a day. Also give a teaspoonful of powdered nitrate of potash at a dose once a day. For the bunch on stifle, apply equal parts tincture iodine and spirits of camphor twice a week.

Splint.—I have a four-year-old mare that has been troubled with splint ever since last spring and I have applied repeated blisters which seems to have made it grow; now I would like to know what will take it off. A. C., Melvin, Mich.—You will obtain fairly good results by applying one part red iodide mercury and eight parts lard every week or ten days.

Rheumatism.—Our local Vet. tells me that my five-year-old cow is troubled with rheumatism. She first commenced to show soreness and stiffness July last, but so far as I can tell she is not sick. F. H., Bad Axe, Mich.—Give your cow 1 dr. of sodium salicylate at a dose in feed twice a day and 1 dr. nitrate of potash at a dose in feed or water once daily. She should be kept dry and in a warm, well ventilated stable at night.

Hard Milker.—I have a cow that is a very good milk producer, but she is a hard milker and I would like to know if there is any kind of an instrument I could get to enlarge the hole through teat without injuring the cow. If so, where can such an instrument be purchased? J. C. H., Peacock, Mich.—A teat expander is what you should use which operates like a glove stretcher. Write Geo. Piling & Son, Instrument Dealers, Philadelphia, Pa., for their booklet and price list.

Conjunctivitis.—My cows' eyes are running a watery fluid which leaves a scum around the eyes; what shall I do for them? J. J., Atlanta, Mich.—Dissolve 40 grs. boric acid, 40 grs. borate of soda in four ounces of clean boiled water and apply to sore eyes twice a day for a week. Mix together equal parts calomel and boric acid and blow a small quantity into eyes once every two days.

Congested Udders.—My cows seem to be bothered with swelled udders and I am told they have garget. When these attacks come on their appetite is not very good and I might add that they have had more or less trouble all summer. L. S. D., Clayton, Mich.—Gentle hand-rubbing, careful milking, keeping your stable clean, and be sure to milk the diseased ones last; for these troubles are often infectious—passed from one to the other by the milker. Give a teaspoonful of powdered nitrate of potash in feed once a day, and apply iodine ointment to the diseased portion of udder three times a week.

Strangles—Indigestion.—I have a young horse that had distemper last August, his throat opened in three different places, discharged pus freely, then wounds healed. I put him at light work and in about two weeks he was taken with sick spells, showing symptoms of colic. Our local Vet. is inclined to believe that an internal abscess is forming. J. M., Yale, Mich.—Your horse should be carefully fed, bowels kept open, if he shows symptoms of bowel pain, rub on some mustard and water daily. Give him 1 dr. of fluid extract nux vomica and 2 drs. of Fowler's solution at a dose two or three times a day. If an abscess forms the pus should be allowed to escape as early as possible.

Scratches.—Have a seven-year-old mare bothered with scratches, which I have been unable to cure. A. H. G., Gilford, Mich.—Occasionally paint the sores with tincture iodine and give her 1/2 oz. doses of Fowler's solution two or three times a day.

Indigestion—Heaves.—I have a 11-year-old horse who seems to have occasional attacks of indigestion, but is fleshy. He also has heaves. I gave him one quart of raw linseed oil which appeared to ease his breathing. I forgot to say that when his bowels move, he acts as if in pain. While running out on grass he is in pretty good condition, but as soon as he is stabled and fed dry feed, he is in distress. J. E., Pentwater, Mich.—Give your horse 1 dr. fluid extract nux vomica, 1/2 oz. of tincture gentian compound and 1/2 oz. of Fowler's solution at a dose two or three times a day. Feed no clover or dusty, musty, badly cured fodder of any kind, and dampen all his food.

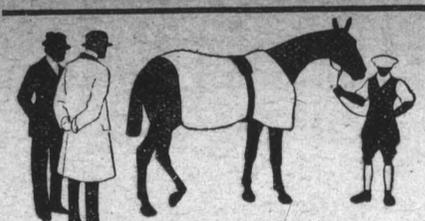
Cow Leaks Milk.—I have a young cow that has just freshened the second time. She is such an easy milker that she leaks almost half of her milk, before milking time. What can be done to remedy this case? B. L. S., Rives Junction, Mich.—Milk her three times a day, or use teat plugs; however, I favor the milking of this kind of a cow three or four times a day, more than I do in applying a mechanical device.

Barren Heifer.—I have a calf eighteen months old that has been mated twice, but she fails to get with calf. A. J. S., Orion, Mich.—Dissolve 2 ozs. of bicarbonate soda in three pints of tepid water and wash out vagina three or four hours before she is mated.

Light Milkers.—Two of my cows freshened recently; neither of them gives enough milk to nourish their calves. They are in good order, are not old, and heretofore have been good milkers, but they are not giving over one pint apiece at a milking. C. H. S., Pearl, Mich.—You had better give each cow one pound of epsom salts, one dose only. This medicine will clear out their stomachs and bowels; then feed them carefully. Proper feeding and care is all that is required in these cases.

Sick Kittens.—We are having much trouble in keeping cats lately; they soon grow thin, sicken and die. Have six kittens from another farm which were very healthy, but are going down rapidly now. We feed them bread and sweet milk. We are troubled with rats and mice and would like to keep cats to destroy them. J. B., Holland, Mich.—Doubtless you have either distemper or diphtheritic infection on your premises, both of which seem to be fatal to cats. Dog distemper is readily communicated to young kittens. I advise you to secure cats not less than one year old and if necessary vaccinate them with canine distemper vaseline.

Hog Has Piles.—I have a hog that has piles—is there any cure or relief for such disease? E. V. C., Central Lake, Mich.—Dissolve 1 oz. of tannic acid, 2 ozs. of sulphate of zinc and 4 ozs. of acetate of lead in a gallon of clean water and apply to piles three times a day.



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Choice Duroc Boar

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Big Type Boars:

O. I. C.'s ready for service Bred Gilts—Fall Pigs. Registered in buyers name, shipped C. O. D. Prices very reasonable. J. Carl Jewett, Mason, Mich.

O. I. C. Swine

Farm, Holland, Michigan, Mich. R. No. 5

O. I. C. Swine

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I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—More Money from Hogs! G. S. BENJAMIN, E. F. D. 10, Portland, Michigan

CHESTER WHITES Some splendid March boars for sale. Feb. Sale. A few choice Spring boars ready to ship. W. J. HAGELSHAW, Augustus, Michigan.

Registered O. I. C. Swine
Stock For Sale—All Ages
Correspondence Solicited, Visitors Always Welcome

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O. I. C. and Chester White Swine, all ages. A few service Boars and open gilts, 400 fall pigs either sex, sired by Crandelle Wonder, Grand Champion at Ohio State Fair, Schoolmaster the champion of champions and highest price boar of the breed and others. Get a sow bred to Gallaway Edd Grand Champion Mo. State fair, we are booking orders. We had the undefeated breeders age herd at six state fairs. Get our catalogue, buy the best it pays, we have them. We ship on approval. Rolling View Stock Farm, Cass City, Mich. R. 2.

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JULIAN P. CLAXTON, Swartz Creek, Mich.

O. I. C. SWINE:

If you are interested in O. I. C.'s, let me start you with a choice pair or trio, not akin, or a gilt, due to farrow about September first. A. J. GORDEN, R. No. 2, Dorr, Mich.

O. I. C. Swine and Reg. Holsteins

few boar pigs of either sex, sired by Crandelle Wonder, Grand Champion at Ohio State Fair, Schoolmaster the champion of champions and highest price boar of the breed and others. Get a sow bred to Gallaway Edd Grand Champion Mo. State fair, we are booking orders. We had the undefeated breeders age herd at six state fairs. Get our catalogue, buy the best it pays, we have them. We ship on approval. Rolling View Stock Farm, Cass City, Mich. R. 2.

O. I. C. & Chester White

Strictly Big Type. April boars large enough for service, also have May boars, that are good ones. Can furnish in pairs not akin. Have been breeding the big type for 15 years. The kind that fill the pork barrel. Newman's Stock Farm, Marlette, Mich. R. 1.

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14 choice young boars ready for service. 2 sows to farrow in Oct. and open gilts. Cloverleaf Stock Farm, Monroe, Mich., R. No. 1.

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Serviceable boars of the big type at reduced prices for the next thirty days. G. P. ANDREWS, Dansville, Michigan.

O. I. C.

Year old boar 2nd prize winner at Grand Rapids fair also spring gilts and boars ready for service. A. J. Barker, Belmont, Mich. R. 1.

FOR SALE

Thoroughbred O. I. C. Swine, sows bred, gilts and boars. O. D. Somerville, Grass Lake, Mich. R. 2.

O. I. C.'s

Service boars and gilts. Price reasonable. Satisfaction guaranteed. Ship any day. A. R. GRAHAM, Flint, Michigan.

O. I. C.'s

or Chester White Swine, both sex, not E. B. MILETT, Fowlerville, Michigan.

O. I. C.'s

Have only a few boars of May, June and Sep. farrow. C. J. THOMPSON, ROCKFORD, MICH.

Francisco Farm Poland Chinas

Big Types With Quality
Ten 200 lb. Spring Boars from prize winning stock. They're long, strong, big-boned, rugged fellows. Pictures, circular and price list on request. P. P. POPE, MOUNT PLEASANT, MICH.

Large Strain P. C.

Two nice fall gilts to farrow in Aug., Sept. and Oct., set one of these sows with pigs by side. H. O. SWARTZ, Schoolcraft, Michigan.

AT HALF PRICE

Genuine big type Poland China Hogs, Bred Sows, Spring Pigs, Boars ready for service. Special, the best big type fall yearling boar in Michigan. Also registered Percheron Stallions and Mares. J. C. BUTLER, Portland, Mich., Bell Phone.

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Spring boars, at reasonable prices. Order soon to save express. A. A. WOOD & SON, Salline, Michigan.

FOR SALE: Poland China boars

ready for service. A few high scoring Black Minorca cockerels, will make large birds. Satisfaction Guaranteed. R. W. MILLS, Salline, Mich.

Large Type P. C.

Largest in Mich. Young boars ready for service. Of Mar. and April farrow, from large litters, weighing up to 275 lbs. Come and see, expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

BIG TYPE POLAND CHINAS

All ages. Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big stretchy, splendid individuals with best breeding. Pigs from such matings will please you. HILLCREST FARM, Kalamazoo, Michigan.

For Sale Poland Chinas

either sex, all ages. Something good at a low price. P. D. LONG, R. F. D. No. 8, Grand Rapids, Mich.

BIG TYPE POLAND CHINA

Spring boars that will please you, priced right. G. W. HOLTON, Route H, Kalamazoo, Michigan.

For Big Type P. C.

Spring Boars and Gilts bred for April farrow. Write or call on Armstrong Bros., R. 3, Fowlerville, Mich.

GROWTHY THE DISEASE PROLIFIC "MULEFOOT" RESIST- PROFITABLE HOG ING
FOUNDATION STOCK FROM BEST BLOOD OF BREED
THE CAHILL FARMS
KALAMAZOO - - - MICHIGAN

HAMPSHIRE HOGS

Only a few spring boars left. Taking orders for bred gilts. John W. Snyder, R. 4, St. Johns, Mich.

Hampshire Hogs

A few spring boars old enough for service. Bred for spring farrow and open tried sows and gilts. Winning blood lines. Jos. E. Mishler, R. 3, Shijshewana, Ind.

Halladays' Hampshire Swine

Both sexes, all ages. Prices reasonable. O. H. Halladay & Son, Clinton, Mich.

Yorkshires For Sale

Boars from large early farrowed litters. Waterman & Waterman, Meadowland Farm, Ann Arbor, Mich.

SHEEP.

Kope Kon Farms

Offers, One yearling Hampshire ram at \$50.00. One yearling Southdown ram at \$25.00. A few growthy well bred Oxford and Shropshire ram lambs at \$25.00. Kinderhook, Michigan.

INGLESIDE FARM

Offers Twenty registered Shropshire Ewes being bred to a prize winning ram. H. E. POWELL, IONIA, MICH.

Good Registered Lincoln Rams For Sale, Prices Reasonable.

Robt. Knight & Son, Marlette, Mich.

Leicesters

Yearling and ram lambs from Champion flock of Th umb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

SHROPSHIRE

A few choice Rams. Dan Booher, R. 4, Evert, Mich.

100 Head Grade Shropshire

Ewes for sale at \$12.00 per head. Address Frank H. Herrick, R. 1, Scottville, Mich.

Oxford Sheep:

20 Rams, 20 Ewes. EARL C. McCARTY, Bad Axe, Michigan.

Oxford Down Sheep

No more for Sale. M. F. GANSSLEY, Lennon, Michigan.

Registered Oxford Down Rams

For Sale. Direct Olmsted and J. Spans, Mair, Michigan.

The Great Ohio flock of Merinos and Delaines

good, fine, heavy fleeces, heavy shears, priced to sell. Write wants. S. H. Sanders, Ashabula, Ohio

Purebred Hampshire Ram

Lambs. Will register if desired. A. R. RUNYAN, Rochester, Michigan.

HORSES

AUCTION SALE

of Standard Bred Horses and Jersey Cattle

I will sell at Public Auction at my farm 2 miles East of Remus and 3 miles North, Wednesday, Nov. 9, commencing 2 o'clock P. M. One Bay stallion, Fall Red Cloud, No 4823, 13 years old, weight 1300, a grandson of Electioneer through J. C. Simpson, Record 2:18 1/4. One Chestnut mare Julia, G. S. 11 years, weight 1100, sired by Racko, Record 2:17, with colt by her side. She is standard and registered. One Chestnut mare, Lady Fitzpeth, 5 yrs. old, weight 1100, sired by Ridpath, Record 2:19 1/4, with colt by her side. She is standard and registered. Breeding can be seen the day of the sale. Also 26 Registered Jersey Cattle. They have the best of records behind them, with the best of Island and pure St. Lambert blood. Their breeding can be seen the day of the sale. 10 cows of good ages, fresh or to freshen soon, seven heifers and two bulls, all registered, also six pure bred calves. Terms of Sale—All sums of \$5 and under cash all sums over \$5, 12 months time on good Bankable paper at 7 per cent interest, no goods removed until settled for.

C. L. GILMORE, Proprietor, GEO. BILBROUGH, Clerk, EUGENE DUNS, Auctioneer.

Percheron Stallions

For Sale: 4 Stallion colts, two 3 years old, and two 1 year old past. All pure bred and recorded in the Percheron Society of America. No better breeding can be found. All dark grays and perfectly sound. Will mature about ton horses. Clara B. Woodman, Paw Paw, Mich., R. R. 4, Executrix of the estate of the late

Edson Woodman

FOR SALE

or exchange for registered Holsteins. Registered Percheron stallion, two years old. Color dark gray. Will make a ton horse. Also for sale registered yearling Holstein bull at farmer's price. Alfred Allen, Mason, Michigan.

Percherons, Holsteins, Angus, Shropshires, Durocs

DORR D. BUELL, Elmira, Michigan.

FOR SALE

Registered Percheron Stallions, Mares and fillies at reasonable prices. Inspection invited. F. I. KING & SON, Charlotte, Mich.

The Fairfield Stock Farm

Percheron and Belgian horses, Shorthorn Cattle and Oxford Down sheep. H. R. Peters, Carland, Mich.

Registered Percherons.

Stallions from one to four years old and two 2 year old mares. Priced to sell. Inspection invited. L. C. HUNT, EATON RAPIDS, MICH.

FOR SALE

Stallion colts by Imposant—7403 (7895) F weight 2340 lbs. From mares as good. Ages from two months to three years old. As you can find any where. Chas. Osgood & Sons, Mendon, Michigan.

Shetland Ponies

HARTZELL BROS., Sebring, Ohio. Oldest herd in biggest Shetland Producing County in U.S. \$50 to \$150.

CATTLE

FOR SALE: Choice registered Jersey bull calf born Dec. 24th, 1915. Dam a 700 lb. a year butter cow, moderate price, easy terms. C. S. Bassett, Kalamazoo, Mich.

SONS of Grand Champion male Mich. State Fair

1916, his 5 dams are 30 50 lb. Butcher 7 days. A. R. O. Dams. Price right. John A. Rinke, Warren, Mich.

You Buy
DR. HESS STOCK TONIC
 at an Honest Price



25-lb. Pail
\$2.00

100-lb. Drum
\$6.50

Smaller packages
 as low as 50 cents
 (except in Canada
 and the far West
 and the South).

Why Pay the Peddler Twice My Price?

Now, Mr. Farmer, here is another point that I want to emphasize: That is, Dr. Hess Stock Tonic is highly concentrated. It goes further, as the small dose quantity proves.

Twenty-eight thousand dealers sell my Stock Tonic all over the United States and Canada. Remember, I have no peddler's wagon and horses' expenses to pay: that's why I can sell you my Stock Tonic through a local dealer in your town—a man with whom you trade every week—at rock-bottom prices.

Here are some of the ingredients that compose Dr. Hess Stock Tonic, just as I used them in my years and years of veterinary practice:

- | | |
|--|--|
| Nux Vomica, Nerve Tonic, aids digestion. | Sulphate of Magnesia, Increases secretion. |
| Quassia, Appetizer, Worm Expeller. | Nitrate of Potash, Acts on the Kidneys. |
| Iron, Blood Builder, Worm Expeller. | Charcoal, Prevents unhealthy fermentation. |
| Sulphate of Soda, Laxative, acts on the Liver. | |

NOW LISTEN! So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel worms, that I have authorized my dealer in your town to supply you with enough for your stock, and if it does not do as I claim return the empty packages and my dealer will refund your money.

**Dr. Hess
 Dip and Disinfectant**

Not only a dip, but a powerful disinfectant as well, that you can use in dozens of ways.

Price \$1.00 in Gallon Cans

In barrels a little less (except in Canada and the Far West)

Use it as a disinfectant in the barn, to keep the horse stalls pure and healthful, to keep the cow stables sweet smelling, the pig pen pure and free from disease, and in the poultry house to drive out the cholera germs, the roup germs and to kill the lice and mites. Dr. Hess Dip and Disinfectant is death to practically all parasites that infest livestock, such as hog lice, sheep ticks and scab, lice on horses and cattle, ordinary mange, scratches, grease heel and all parasitic skin diseases. Use as a disinfectant in the home, in closets, sinks, cesspools, etc.

FOR HOGS—Kill Hog Lice. It's natural for a hog to wallow. Provide a wallow close to the feeding grounds, to which add Dr. Hess Dip and Disinfectant. Hogs will be constantly passing back and forth from the wallow to the feed trough; while the **DIP** will kill the lice and cleanse the skin, the **DRIP** will destroy the germs of disease and the worms that pollute the ground.

Always uniform. One gallon makes 70 to 100 gallons of solution, ready to use. My Dip, being both a dip and disinfectant, saves you the expense of buying two preparations.

Dr. Hess Poultry Pan-a-ce-a

A Tonic—Not a Stimulant. Hastens the Moulting Period. Tones up the Dormant Egg Organs. Helps Make Hens Lay.

Right now is the time to feed your hens this excellent tonic to help them through the moult. The moulting period is a trying time. Hens are weak, are feeling out of sorts. It takes most of their energy to force out the old quills and to grow new feathers. It's the "off season" for laying. The nerve tonics, blood builders, appetizers and internal antiseptics in Pan-a-ce-a will condition and give your hens strength and hurry along the moulting, so they will get promptly back to egg laying. Feed regularly and tone up the sluggish and dormant egg organs, make them active and keep hens laying at their best all winter. Sold everywhere on money-back guarantee. Prices: 1½ lbs. 25c; 5 lbs. 60c; 12 lbs. \$1.25; 25-lb. pail, \$2.50 (except in Canada and the far West).

**Dr. Hess Instant
 Louse Killer**

Kills lice on poultry, horses, cattle, calves and colts. The summer season is drawing to a close. Your hens will soon go into winter quarters. Make sure that they are free from lice and that they remain that way, because hens can't lay eggs and fight lice at the same time. Provide your fowls with a dust bath, to which add Dr. Hess Instant Louse Killer occasionally and your hens will do the rest. They will dust it into their feathers, carry it to the nests, roosts, everywhere. Then they will be lice-free and contented, profitable layers throughout the fall and winter. Prices: 1 lb. 25c; 3 lbs. 60c (except in Canada).

I'll Save Your Veterinary Bills
 When you have a sick or injured animal, write me, telling symptoms. Enclose 2c stamp for reply and I will send you prescription and letter of advice free of charge.

DR. HESS & CLARK, Ashland, Ohio