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Increasing the Winter Egg Production

By C. N. WHITTAKER

If a farmer has a cow which goes dry five months in the year he gets her off his hands as quickly as he can. If his hens go dry five months in the year he keeps right on throwing high-priced grain into them and waits patiently until they are ready to lay again. If he gave his hens as good winter care as he gave his cows he would get as good, if not better, returns from them.

I suppose this township is typical of the several hundred townships in Michigan. There are times during November, December and January when there are not enough eggs going into the village to supply the local demand, yet during April they come in at the rate of three hundred dozen or more a day. Probably nine out of ten farmers do not expect to get winter eggs, do not even try to get them in spite of the fact that here is the richest poultry harvest of the year. The average farm hen begins to lay about the first of March and keeps it up more or less regularly until the first of October. It is doubtful if she lays more than seven dozen eggs during this time, worth, at usual warm weather prices, about \$1.40. With grain worth what it is now it costs that much to feed her a year and if she is to show a profit it must be during the other five months.

Where the Profit Comes in.

Give her two months to get through the molt and with the right kind of care she should produce at least three dozen eggs during December, January and February, worth forty to sixty cents per dozen if properly marketed, or thirty to forty cents per dozen if sold in the village. Under the same conditions early hatched pullets should begin to lay in October or November and keep it up all winter.

During the warmer months a hen has a variety of food, fresh air and exercise, which she does not have during the winter, hence the lack of eggs. Give her these and she will lay more profitably in cold weather than in the warm, probably not as many eggs but price will be two or three times as high. To secure a profitable winter egg yield it does not necessarily follow that she must have more feed than she usually gets but that it must be of a greater variety, therefore all we get out of her during the winter months is profit. Let us see what we must do to get this profit.

First the henhouse must be given a thorough cleaning, the roof made tight and all cracks in the wall covered. If the windows are filled with glass take out half of them and cover the openings with light muslin or a good grade of cheesecloth. Remember that hens do not require warmth so much as pure air. Cover the floor with at least six inches of clean straw or shredded corn fodder. The latter makes excellent scratching material as it is tough and the hens will eat nearly all the leaves. It is in scratching that they get their exercise so do not fail to give them something to scratch in, removing it as soon as it becomes worn or

soiled and replacing with fresh litter.

On the farm it is not difficult to supply the variety of food required. The main ration for winter should be corn at night, all they will eat for it is a long time till morning, and if a little is left they will be scratching for it at daybreak. The breakfast, wheat, oats,

hay. The wife of a neighboring farmer has five hundred cabbages put away for her hens this winter. She always gets a good winter egg yield and is one of a number of farmers' wives I know who make more off their hens than their husbands do from their hogs. Cabbages and roots should be given

100 lbs; middlings 50 lbs; alfalfa meal 50 lbs; beef scraps 50 lbs; fine table salt 8 lbs.

An easily made mash hopper is shown in the illustration and should never be allowed to become empty. Dry beef scraps will replace the insect food and she should have access to it at all times. This is the cheapest egg-making food on the market and if it is necessary to omit either the mash or the meat it is better to leave out the former, provided a variety can be supplied in some other form. Green cut bone is the best meat food to be had, but it is hard to get and if given a chance a hen will eat too much of it.

Other Essentials.

We may do all of these things and still not get an egg. This will probably be the case unless we have put ourselves on a friendly footing with the hens. If on cold days they hump up in corners and on the perches and show no interest when we enter the house the nests will be eggless. If they are kept busy during the greater part of the day, if they come running when we open the door, expecting a scramble over a handful of breadcrumbs, a plate of table scraps or an ear of corn, or the delight of scratching in a basket of clover chaff fresh from the barn floor, it is a safe bet that there is something doing in eggs at three, four or five cents each.

Nests, mash hoppers, drinking vessels, etc., should be fifteen to eighteen inches above the floor to leave this space clear for scratching purposes and to keep them free from litter. A low, wooden candy tub makes a good drinking vessel for winter. If filled with hot water in the morning it will not become cold until late in the day. Empty it at night and turn it over so it will be free from ice and clean in the morning, and two or three times a week add enough permanganate of potash to color the water red. This not only purifies the vessel but acts as a check toward colds and other sickness.

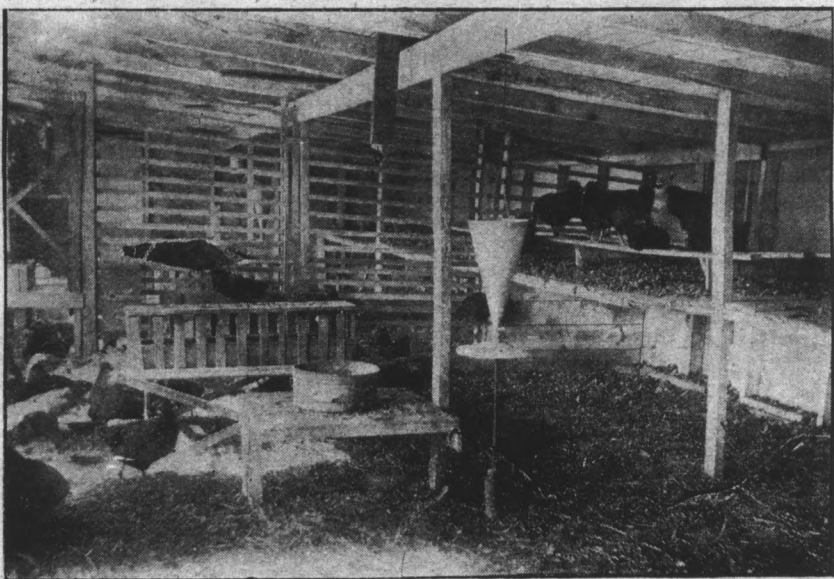
Provide a Dusting Place.

If the house has a board or concrete floor provide a dusting box. Sifted coal ashes make good dusting material and the hen greatly enjoys the little particles of coal she finds in it. Also the coal carries impurities out of her system. Provide oyster shells, grit, too, if you wish it, but if she has plenty of shells she will not care much about grit.

An elaborate poultry house is not needed, though the more convenient the building the easier it is to secure the desired results. Dryness, light and ventilation are the principal requisites. There are many ways not mentioned here to add to the variety of food, hot mashes with cooked vegetables, milk, cottage cheese, stale bread, parings, etc., all of which increase egg production and cut down on the feed bill. But with all these we must keep on visiting terms with our hens so they will come a-running and not go a-running every time we open the door.



Elaborate Houses Not Necessary, Hens in this House Laid Well.



Interior of a Practical and Convenient Chicken House.

buckwheat, or a mixture of these, should be a light meal, not over half as much as they have at night. If they get their fill early in the day they will loaf until they become hungry again, and loafers are not layers. Scatter the grain in the litter so they will have to dig for it, and the colder the weather the more they must scratch to keep warm.

Feeding for Results.

Some time during the middle of the day give them all the sprouted oats they will eat up clean. This is the best green food obtainable, but cabbages are a close second, followed by beets, carrots and alfalfa and clover

early in the day as it requires considerable time and labor to pick them to pieces.

Furnishing Egg-producing Material.

There is not much egg-making material in the grain and green food, their functions being to sustain life and keep the body in healthy condition. To enable her to produce eggs we must give her something to make them of, food rich in protein and meat of some kind to take the place of the bugs and worms she gathers for herself during the warm weather. The following dry mash not only supplies protein but also adds to the variety of her ration:

Bran 100 lbs; ground corn and oats

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DETROIT, JANUARY 6, 1917

A RESULT OF THE FREIGHT CON- GESTION.

Owing to the delay in getting delivery on a shipment of a larger size of paper, which has been in transit from the mill for nearly thirty days, it was necessary to limit the number of pages in this issue to twenty-four. We assure our readers that the curtailment of reading matter caused by this temporary contingency will be fully compensated for in future issues.

CURRENT COMMENT.

The Market Milk Controversy. During the past few weeks several meetings of organized milk producers have been held at Detroit to discuss the terms on which the producers would agree to contract their milk for the ensuing year. On Friday, December 29, 1916, the producers organization fixed their figures at \$2.35 per hundred pounds f. o. b. shipping stations. The distributors refused to meet this figure, offering a flat rate price of \$2.00 per hundred. A compromise proposition for the four winter months was suggested by the producers. It was agreed to hold another meeting with the distributors on January 4, 1917, when the matter will be finally settled.

This means that ere this issue reaches the reader the distributors will have acceded to the producers' terms or a milk strike will have been called in the Detroit zone. It is to be hoped that an amicable settlement of the matter may be reached which will be fair to the producers. But in case a milk strike is forced to secure a living price for the producers' product, every milk producer should be loyal to the cause.

The State Budget System. Owing to the platform pledges of the successful candidate for governor at the recent election in this state, which included the advocacy of the so-called budget system in the making of appropriations for all state purposes, there has been much general discussion of this proposition, and many inquiries have been received for specific information relating to this proposed system.

Briefly stated, the budget system of making appropriations for state purposes contemplates the collection of estimates from the various state institutions and state departments for their needs for the ensuing biennial period, together with detailed data relating to the purpose for which the money is needed and the corresponding expenditures made for the previous biennial period. These estimates, together with the explanatory information are later submitted to the legislature, soon after that body convenes in regular session, and all appropriations for the

various state needs are then considered and made in a single appropriation bill covering all the needs of all the several departments or activities of the state government, hence the term "budget" by which this system is commonly designated.

Budget systems of various sorts have been adopted and are in operation in thirteen states. The provisions for the operation of the system vary greatly in the different states. In some states the entire responsibility for the collection of estimates and publication of data regarding them is placed upon the governor. In other states a permanent board or commission, generally appointed by the governor, is provided for this work. In still others the budget is prepared by the governor and the state officers comprising his official family or cabinet, with perhaps the chairmen of the ways and means and finance and appropriation committees of the two houses designated to aid in this work.

This system differs materially from that now in use in this state. In our practice the governing boards of the various state institutions make an estimate of their needs for the ensuing two years, and a bill is prepared and introduced, generally by the local member, appropriating moneys to satisfy those needs. These several appropriation bills are first referred to institutional committees who visit the institutions to familiarize themselves with their needs. Ordinarily a member of the ways and means committee of the house or the finance and appropriations committee of the senate, who finally passes upon all appropriation bills, also visits each institution so that these committees may have first-hand information.

Usually the institutional committees are partisan in their advocacy of institutional appropriations requested. The real work of keeping the appropriations within reasonable bounds is accomplished by the ways and means and the finance and appropriations committees above mentioned. The members of the legislature are generally more or less familiar with the various institutions but consider appropriations for them separately and without relation to the total expenditures involved, ordinarily more than fifty separate appropriation bills being acted upon in a single legislative session.

The advantages to be gained under the budget system would be a more detailed knowledge of the actual needs and previous expenditures of all state institutions by every member of the legislature, and a more general public knowledge with regard to same than exists under present conditions, where such knowledge is practically limited to the members of the two important committees above mentioned and such members of the legislature as take an active interest in this phase of legislative work.

Budget systems are in common use in many of the larger municipalities where their adoption has seemed absolutely necessary to keep the tax rate within reasonable limits and secure a proper and well balanced support of the various municipal activities undertaken for the public good. The budget system is undoubtedly an improvement on the hit-and-miss plan of making state appropriations which has for many years been the rule in this and many other states, although this apparently loose system has not resulted in any lavish waste of the state's resources, since the activities of the legislative committees entrusted with the duty of safeguarding the public treasury, together with the frequent exercise of the governor's veto power have prevented any disastrous results from this system. Yet the possibilities of the budget system, particularly in the better dissemination of information relating to the cost of maintaining the various activities of the state, the purpose for which the moneys are expended and the comparative cost of these various activities will be a long step toward better and more efficient gov-

ernment. The more information the public has on the conduct of governmental affairs the better these affairs will generally be conducted. Thus, while the budget system will not be a panacea for high taxes, it will be a step toward better government, provided that the system evolved for the purpose is in itself an efficient and economic instrument.

Farm Bureau Results. On the first of the year Mr. James F. Zimmer, Wexford County's Farm Agent, retired from the county farm bureau service to engage in farming in Ohio. His resignation is undoubtedly a very considerable loss to the farmers of Wexford county, but through their efficiently organized farm bureau the kind of work which he has conducted will be efficiently continued.

In this connection, and as an example of the benefits which are derived from county farm bureau work, brief reference of the results accomplished in Wexford county under Mr. Zimmer's incumbency as county farm agent will not be out of place. Enumerating the various activities of this organization in the order of their relative importance, the following statement briefly summarizes the work accomplished within the last two years:

Six live stock breeders' associations have been organized. This co-operative ownership of sires has been instrumental in placing forty-three of registered cattle, sires and heifers, in Wexford county alone. Several of the Shorthorn cattle were shipped from Ohio. This work has culminated in an offer from Mr. Wm. L. Saunders, a public-spirited citizen of the county, to replace pound for pound, every scrub bull in the country with a registered bull, the transaction to be approved by the Wexford County Farm Bureau and the purchases confined to two breeds, namely Shorthorns and Holsteins.

Last year the farm bureau distributed 10,000 fruit trees in this district, at a very low cost to the farmers.

The introduction of Red Rock wheat has meant a material increase in yield per acre, in comparison with the old strains. Mr. Brigham received fifty bushels per acre, while the average crop in Wexford county is 12.3 bushels. Over 200 acres of this wheat was sown in Wexford county last fall (1916).

The farm agent has tested about 800 cows for butter-fat during the last year and many of the poorer cows have been sold as a result. This means better live stock for this district.

Practically 300 farmers treated their seed potatoes with formaldehyde for scab and black scurf during the past spring. This caused an increase in yield and assists in selling potatoes for seed purposes. Wexford county is becoming known as the place to buy clean seed potatoes as a result of this work.

Co-operating with the farm bureau, the farmers in Wexford county have organized a Buyers' and Sellers' Association, with headquarters at Cadillac. They buy feed, salt, clover seed, hay, in carlots and save materially in this way.

Wexford county has conducted a Boys' Corn Club for several years and have sent three boys to the M. A. C. and have paid all expenses. This cannot help but result in having better farmers in the county.

A boys' stock judging contest was held at the county fair. Many pruning and spraying demonstrations have been conducted. One-week farmers' schools were held at Manton and Buckley.

That the activities of this bureau have been profitable to the farmers of Wexford county, no thinking reader can doubt. That the profits accruing to the farmers of the county will be cumulative is equally certain. With the further broadening of the activities of the bureau, these benefits will become still more marked. There can be no doubt but that Wexford county has gotten value received for the money and effort put into this enterprise, and what is true of Wexford county is but

typical of other counties organized for this work.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Winter weather has brought war operations almost to a standstill and there is very little to report. The Germans are, however, meeting with further successes in the Rumanian campaign. They surprised the Russians by sending a heavy force through passes between the Carpathian and Transylvania Mountains and are now rolling up the Russian defensive in a fashion that threatens the Czar's grip upon Bukowina, southern Galicia, and the Carpathians. It now appears that the central powers have as their objective in this campaign the important port of Odessa which lies about 200 miles from their present lines. While General Haig, commander-in-chief of the British forces in Belgium and France, declares that the Allies will win on the western front and that the Somme campaign has been a decided triumph for his forces, the Teutons hold that peace will not result until one or more of the Allies has been thoroughly defeated. They believe that the bonds holding the enemy together are gradually loosening and that a decisive defeat of Russia will start the ball of disruption rolling. They are therefore contemplating a grand offensive against Verdun and Odessa. The present movement in Rumania is believed to be a part of this program.

Switzerland, Norway, Sweden, and Denmark have already backed the movement started by President Wilson in his note to the belligerent nations of Europe asking for an expression as to what terms would be required as a basis for a treaty of peace. It is expected that Latin American countries will follow the other neutrals in the effort to end the war.

Germany has completed plans for establishing "submarine mail" service with the United States, Central and South America, the West Indies, China, the Dutch East Indies and the Philippine Islands. This service will be carried on by the submarine Deutschland and her sister ships.

It is believed that a German raider has captured five vessels engaged in transatlantic commerce. The vessels have mysteriously disappeared without a word of any kind from them.

The Danish parliament has ratified the bill providing for the sale of the Danish West Indies to the United States. The bill has also been approved by the king and the transfer of the islands will be completed in January.

National.

The prospect of a long delay in putting the Adamson eight-hour law into effect is apt to lead to a general strike on the railroads similar to the one that threatened the country last fall. It is alleged that the managers of the railroads have blocked plans for making the law effective which would indefinitely delay the benefits accruing to the employees.

The federal reserve board hopes to secure authority from congress to have branch banks transfer their reserves to the vaults of federal reserve banks immediately instead of next November, as the law now requires. The probable outward movement of money from the country in the event of peace among belligerent countries in Europe is given as the main reason for the need of this change. The country's reserves could be more easily handled if the reserve banks controlled the surplus now held in the smaller banks.

Rural credit districts have been created by the board selected for that purpose and the cities for the location of the district banks have been announced. Michigan will be in the district which includes Wisconsin, Minnesota and North Dakota and the bank for the district will be located at Minneapolis.

The federal trade commission has decided to resume its hearing on the news print paper investigation. The object of this quiz is to prevent, if possible, the suspension of the publication of newspapers dependent upon the open market for their paper supplies.

The foreign trade of the United States for the present year will probably aggregate \$7,800,000,000, which is the largest amount of foreign business in the history of the country. November's business was the largest on record for any one month.

Berkley, Cal., has provided for a college to instruct policemen in sciences having a bearing upon their work. The faculty includes eight professors from the state university and degrees will be given at conclusion of the course.

President Wilson has been petitioned by 1,500,000 railroad men to request congress to give railroads the power to advance tariffs sufficiently to cover a substantial advance in wages for railroad employees not affected by the Adamson law.

Barley for Northern Michigan

By J. W. WESTON

BARLEY is one of the most widely cultivated cereals, growing as far north as 70 degrees latitude in Lapland and 60 degrees north in Skagway, Alaska, to the southern limits of Arizona and California.

Barley Growing in Sections Out of the Corn Belt.

Barley is similar to the oat in that it does better under cool, moist conditions. Early planting is as essential as with oats or spring wheat. Good drainage is necessary to the production of good crops of barley and it does not require as much soil moisture as is needed to produce a crop of oats. Barley does well on most soils except the very light, sandy kinds but seems to favor the better sand and clay loam soils. It grows better on alkali soils than the other small grains. Northern Michigan, Wisconsin and Minnesota, are very similar as to character of soil, climate and rainfall and according to the records of the United States Crop Report for the last ten to fifteen years, shows that upper Wisconsin leads in the yield of oats, wheat, rye and clovers, and ranks second in barley. According to the same report the following table compares the three states as to yield and profit of the crops of barley and corn per acre.

	Barley, yield per acre 1915.	Corn, yield per acre 1915.	Barley, 10-yr. av. 1906-15.	Corn, 10-yr. av. 1906-15.	Val. for 5 yr. 1910-1914. Bar. Corn.
Michigan	29.5	32.0	25.5	33.5	\$16.88 \$20.91
Wisconsin	35.5	23.0	28.0	34.8	17.98 21.50
Minnesota	30.5	23.0	24.5	32.3	13.22 16.95

The total cost of producing an acre of barley averages \$7.32, while corn, cut, shocked, and hauled in from field, costs about \$11.02. The difference in value balances the difference in cost of production. Strangely, there is a rather wide-spread state of prejudice existing against the use of barley for stock feeding in this country, some even believing that it is poisonous to the farm stock. Perhaps the brewers desiring to control the entire use of this crop have furthered the prejudice. This idea should be discarded as belonging to the obsolete class of farmers for the experience of the Old World is against it. In fact, the experience that the exhibitors at the International had this year, demonstrates that barley in this country is a vital factor in fitting animals up to the pink of condition for show purposes.

The grand championship in the fat steer class, single entry, was awarded to California Favorite, exhibited by the University of California. A calf of Shorthorn-Hereford cross, weighed in under fourteen months of age at 1,130 pounds, and notwithstanding the wonderfully even and deep fleshing of the calf, he was brought to this perfection of bloom without the use of any corn in his ration. He was carried on a nurse cow and was fed three times a day on a ration of two parts barley, one part oats, and one part bran, with alfalfa hay for roughage.

The nearest competitor for the premier honor of the show was a pure-bred Angus, given the reserve championship, and was also shown by the University of California. This animal showing wonderful width and depth, weighed into the ring at 1,850 pounds, two years old last January and was fitted without the use of corn. At this same International, in the Shorthorn breed in the aged bull class, Burnbrae Sultan, owned by A. F. and G. Auld, of Guelph, Ontario, took first award in this conspicuous class, and the excellent finish on this animal was attained also without corn, his ration consisting of barley, roots, and clover hay.

This grain is now devoted almost wholly to brewing. The use of barley as a feed for animals is still confined most wholly to the Pacific slope, where corn does not flourish to an equal degree. The use of barley will become

its value and special advantages are more common with our stockmen when better known.

The Arabs maintain their horses almost exclusively on barley, the grain being fed unground. Barley is a common feed for dairy cows in northern Europe. The Danes sow barley and oats together in the proportion of two parts of barley seed to three of oats. The mixed crop being ground previous to feeding and is regarded the best for dairy cows and other stock. It is stated by good authority that barley is beneficial in its influence on the quality of milk and butter. This grain is also used extensively in England and northern Europe for pork production, giving fine quality both as to hardness and flavor of the meat.

Why Barley is Adaptable to Northern Michigan.

The section above mentioned, northern Michigan, Wisconsin and Minnesota, are too far north, the seasons too short and cold for the economic production of corn, and according to the feed analysis, it shows that the digestible protein is considerable higher in barley than in corn. The carbohydrates in this grain fall a little below the corn but exceed those in oats, while it has less oil than either oats or corn. How-

ever, for those living in a section where the growing of corn is a "gamble" and barley is a surety, should realize that barley has approximately the same feeding value for live stock as well as being able to produce an equivalent amount of grain per acre. The reports of experiment stations in Europe and America show that barley leads the cereals in the quality of pork production, and takes the place of corn in beef production; that barley proves beneficial to cows fed heavily with roots, as it counteracts their laxative effect; and that barley crushed or rolled supplies a palatable and acceptable feed for horses at all kinds of work. These facts make the growing of this adaptable crop much more attractive, strengthens our weak spot, a substitute for corn, and makes this strong point, barley, stronger.

MICHIGAN STATE VEGETABLE GROWERS' ASSOCIATION.

First annual meeting to be held at the Tuller Hotel, Detroit, Mich., on Tuesday, January 9, 1917.

Forenoon Session, (Eastern Standard Time).

10:00 a. m.—President's address, A. N. Brown, Grand Rapids.

10:20 a. m.—Report of secretary, C. W. Waid, East Lansing.

10:30 a. m.—"Controlling Root Maggots," (illustrated), D. B. Whelan, East Lansing.

11:00 a. m.—"Local Market Needs," Milton Carmichael, Detroit, Editor of Wayne County Courier.

Afternoon Session.

2:00 p. m.—"Getting Ready for Gardening," Hon. I. R. Waterbury, Detroit, Editor Michigan Farmer.

2:30 p. m.—"Diseases of Truck Crops," (illustrated—round-table discussion), Dr. G. H. Coons, East Lansing.

4:00 p. m.—"Vegetable Forcing Problems," (illustrated), C. W. Waid, East Lansing.

6:00 p. m.—Banquet, (eastern standard time), Tuller Hotel.

Evening Session.

8:00 p. m.—"Improving Varieties of Vegetable Through Selection," (illustrated), Prof. A. H. MacLennan, Plant Breeding Specialist for Heinz Pickle Company.

9:00 p. m.—"Co-operation," Dr. Eben Mumford, East Lansing.

All vegetable growers under glass or outside are cordially invited to attend this meeting and banquet. Banquet tickets \$1.25 each. Come and bring your wife.



Flour Facts

A poorer, cheaper grade of Pillsbury's Best is never sent out to catch the cheaper trade.

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ARE made for the farmer who wants to sow his grain in rows closer together. The Superior 4 Inch Drill distributes the seed more evenly, with more rows per acre and less seed in the row, giving each plant more room, fertility, moisture and a better chance for sturdier, healthier growth.

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It has been proven that a greatly increased yield is obtained, some claiming almost one-third more than by the old method of seeding. The discs are so spaced that a highly cultivated seed bed is obtained with almost total elimination of weeds.

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B. G. Pratt Co., Mfg Chemists, Dept. 22, 50 Church Street, New York

THE WATER SUPPLY.

I have an 80-acre farm divided into four fields of 20 acres each, nearly all cleared land. In the center of the farm is a large shed for stock. A well and wind mill is in the corner of these four fields. Last fall I built a cement water tank beside the wind mill. This tank is 12 feet long and six feet wide, outside, and 26 inches deep. The walls are four inches thick on top and six inches at the bottom. An inch galvanized pipe runs from the three-way pump about four feet below the platform under the water tank and up into the bottom of the tank. There is another inch pipe through the bottom of this tank extending three feet below and five feet to the north, coming up through the bottom of another smaller water tank, for hogs and sheep. This tank is six feet long and three feet wide, outside, and 14 inches deep. The walls of this tank are four inches thick at the top, sloping to the bottom. The bottom of these tanks are four inches thick. There is a check valve in the small tank to shut the water off when it is full, or within one inch of the top. The bottom of the small tank is two inches lower than the large one, so if need be it will exhaust the supply of both tanks.

There is an overflow pipe coming within about an inch of the top of the large tank, extending through the bottom of the large tank down into the well pit, beside the pump and discharging into a 16-quart galvanized iron bucket. This bucket is fastened by a number eight wire to the wire that controls the wheel or mill. When the tanks are both full the overflow discharges into this bucket, and as soon as it is nearly full it pulls the wheel out of gear and stops the pump. There is a screen over this bucket to keep out dirt, and a hole in the bottom of the bucket made by an eight-penny nail. As soon as the water runs out of the bucket the mill goes in gear again. If the tanks are full it will pump the bucket full of water, then go out of gear. If there has been no wind to run the wheel for several hours, and the tanks are not full, it will fill them then go out of gear again.

This is a very handy arrangement and works like a charm.

Hillsdale Co. J. A. PALMER.

LILLIE FARMSTEAD NOTES.

Another heavy fall of snow makes the most snow we have had in years. We always have Christmas dinner with my oldest sister, some three miles away. Not in years has there been snow to prevent going with the machine, but this year it was simply impossible, and the snow was not drifted badly either. It is deep. The ground is not frozen at all in the fields and the snow keeps melting from the bottom, otherwise I am sure it would be two feet deep.

The wheat and young clover, all vegetation for that matter, is so covered by a warm blanket of snow that the cold cannot affect it at all. Should this continue all winter it would be ideal, but that is expecting too much. There probably will be an old-fashioned January thaw and then it will freeze. The wheat will be tender and will probably suffer much. But surely it will get by the holidays in good condition.

It is simply splendid weather for all kinds of live stock. All are doing well. What a fine thing it would be if we could only have steady winter weather until March. This weather the stock eat everything clean and call it all good. But in warm, rainy, muddy winter weather many of them eat little and do not do well.

The only live stock we have that are not producing as well are the hens. And they are looking fine but they don't lay so we can get this high price for eggs. I would like to break the market by being able to flood it with fresh eggs, but not yet.

I was in a sugar beet district last week where the farmers were fighting for their rights with the sugar company. The farmers want \$8.00 per ton flat rate. The sugar company offers \$6.00 and more if sugar is more than six cents a pound next fall. I believe farmers should have \$8.00 for their beets. I would like to have some sort of sliding scale so they would get a price in proportion to the price of sugar. That would seem the fairest for both the grower and the sugar companies. However, it don't seem to me that \$6.00 is high enough for the minimum price. It is no more than was paid at first when sugar sold for about one-half what it is worth today. I raised beets for several years on the percentage of sugar basis, and not one year did they net me less than \$6.00 and many times more. So I can not see where a \$6.00 flat rate is any advance over former prices. Now the farmer can not produce beets today as cheaply as he did a few years ago. No one will dispute that. He made none too much money growing them then. He can not afford to grow them now at the old price. I think we ought to grow more beets because we have to import sugar and this takes our money away from home, but I don't think we should grow them at a loss. And we will have to give them up if we can't make ends meet.

But why should not the sugar companies pay more now than before? They made good money before. Some years they made big profits. A stockholder in one of the companies told me once that one year at least, he received 60 per cent dividends on his beet sugar stock. That ought to satisfy any man. If they could do that at the old price of sugar they certainly could do better, even with increased cost of operation. Now with sugar sky-high, I suppose they are afraid that if they advance the price and then if after a time sugar drops back to the old basis they would have an awful time to get farmers to consider a reduction of price. But they are wrong. They don't give the farmer credit for being fair-minded. If the farmer knew that the company could not afford to pay a certain price and they (the farmer) could grow beets for less, they would be willing to do so. I am positive that if the companies would take the farmers into their confidence a little, and be willing to divide a little of present profits with them, that if the time ever does come when the factory could not afford to pay the price the farmers would meet them half way.

I hope the farmers get the \$8.00. It is worth it. The company can afford to pay it. Better still, get a \$7.00 basis price and the advance in price if sugar holds up.

COLON C. LILLIE.

KENT COUNTY ROUND-UP OF BOYS AND GIRLS.

A big round-up of the boys' and girls' clubs of the county was held December 18 at the South High School, Grand Rapids, with talks by the state leader, E. C. Lindemann, of Lansing, and his assistant, Miss Anna Cowles, H. C. Smith, Kent's farm agent, and other prominent local people. Caledonia township captured the corn raising honors this year, Floyd Bergey winning first place with yield of 104.45 bushels shelled corn per acre. Walter Bergey was second and Otto Andred third, all from this township. Harold Fogelson, of Cedar Springs, was first in the bean contest, raising 23 bushels per acre, with Wm. Roth, of Lowell, second and Carl Freyermuth, of Lowell, third.

Wesley Jordan, of the East Nelson school, raised 182 bushels of potatoes per acre and won first place, with For-dyce Hough of the same school, second, and Hazen Ellis, of Paris township, third. John Davis won first in the poultry contest. Margaret Ladden second, and Loraine Munson third.

Orchard Observations

Shot-hole Disease of Plums and Cherries

DURING last summer the shot-hole disease of cherries and plums was very severe and caused the loss of the leaves. On some plum trees which the writer observed, few leaves were left and the plums were small, of poor quality, and ripened very late in the season. Of course, the leaves are the most important accessory to fruit production and when they drop off the food supply is cut off also.

However, the interesting thing about the disease was the manner of its growth and spread during the early part of the season, its sudden setback in July and its re-appearance in August. I wish to call attention to this because of its significance in disease control. It shows the enormous potentiality of a single factor. That factor was a warm rain and a week of humid weather, in other words, moisture. The apple scab organism developed remarkably also, during this rain. A crop of fruit is never secure until every factor that may cause destruction is under control. I believe it is worth while to go into more details in this case.

Thorough Spraying Essential.

The dormant spray having been given, some growers become somewhat inclined to reduce the others to the minimum; provided it is safe it is laudable and proper. So after the blossoms fall, a spraying is omitted or the spray given two or three weeks after the blossoms fall is omitted. In either case this last year there was danger. The leaf spot and brown rot got started and no amount of spraying can repair the harm a severe attack has done.

The spraying this year was often so unsatisfactory because of rain. That was the case at least, of many orchards under observation. During the last week of June and the first week of July, brown rot and leaf spot wrought havoc. The leaves with shot holes yellowed and fell to the ground. But suddenly the hot dry weather came and the disease was checked. An orchard of Montmorency cherries which had been badly attacked regained its foliage by the end of July and it looked bright and green. Many diseased leaves had dropped. To the grower it appeared that the disease was done with its work.

Recurring Attacks.

Such was not the case. About the first week in August heavy rains came. In a week or so there was a change. In two weeks the trees looked worse than ever and by August 25 many of them were almost defoliated. A good spraying right after the rain might have saved them in this particular case. The effect on the plums was similar. Brown rot also appeared again. Wherever a curculio had ruptured the skin or where a scale insect punctured the fruit the rot started. Spores of the disease were evidently abundant.

It has been found recently that the organism covering shot-hole winters over on the old leaves and is thereby ready to attack the new blossoms and buds in the spring. Therefore a thorough spraying should be given the following spring whenever conditions were bad this year. Of course, nature may make conditions unfavorable for the organism but we cannot depend upon that. There is always a sufficient amount left to spread the disease during the following year if opportunity presents itself.

It seems to the writer that all things considered, this last summer was one of the most instructive from the standpoint of disease control. Strange things may occur and all plans may be upset in a day. The farmer lives in such intimate relations with nature that he should be prepared to interpret

some of the revelations she may impart and make them useful to him in his future struggles.

Wisconsin.

C. N. FREY.

THE MELON PATCH.

While we have never made a practice of raising melons for market, we have always endeavored to have what we wanted to eat ourselves. We used to do pretty well by planting a few hills of watermelons among the potatoes; but we became imbued with the idea that we could raise a little better melons than our neighbors if we would take a little more pains with them. With that thought in mind, we began a series of experiments which are still in progress; and while we don't claim to know it all, yet we believe that our experience will be of interest to those of our readers who are interested in melons.

Method of Fertilization.

Our first move was to make a hill about two feet in diameter and a foot high, in which we mixed a liberal quantity of manure; but in a dry spell the melons suffered from drouth before any of the other crops.

Next, we dug a small pit about the size of the hills above mentioned and lined it with manure, then filling it up with earth we planted our melons in the center of it; this time our melons did well enough until the plants were large enough to root down to the manure, and then failed; it may have been that the manure was too strong for the roots, or it may have been because the manure allowed the soil in the center to dry out; possibly both.

To overcome the drying out of the hills, we started using chicken manure in small quantities; we dug a circular trench about six inches deep, leaving a cone of earth, about six to eight inches in diameter, in the center; in this cone we planted the seed and in the trench we placed a fire-shovel-full of chicken manure. When planted in this manner, the plants can send their tap roots down as in normal conditions; and about the time the vine starts to run the feeding roots reach the manure and the result is a very rank growth and fine fruit.

Insect Troubles.

In all our experiments we had been troubled with the onion maggot; or a white worm that resembles them, the maggots often take the entire hill, usually when the plants are very small. We had noticed that hills that were planted without the manure were not affected as much as those in which we had used it; therefore, we tried placing the manure after the plants were old enough to be immune from the maggots; but this move was a failure, probably because the soil bacteria hadn't had a chance to get the manure in shape for plant food before the roots reached it, as much as the disturbance of the root system.

During the past season we planted a dozen seeds to the hill and went over them every day while they were in the seed leaf, and as often as a plant started to wilt we pulled it and invariably found the maggot in the root or stem of it. In some hills the maggots destroyed half or more of the plants; when the danger of maggots was passed we thinned to three plants per hill; now we have as fine a melon patch as we ever raised.

Otsego Co. G. F. DE LA MATER.

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The Live Stock Meeting

THE annual meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association is an occasion of interest to every live stock farmer in the state. Excellent programs have been prepared for both the parent association and the several breed associations which hold meetings at the same time. Every stock farmer in the state should plan on attending these meetings, which will, as usual, be held at the Agricultural College in January. The programs of the several sections follow:

General Program.

Meeting called to order at 9:30 a. m., Thursday, January 18, 1917, in Room 402 Agricultural Building.

Secretary's report.

Appointment of committees.

President's address.

"The Farm Building Problem," Dean R. S. Shaw, M. A. C.

"The Place of Live Stock upon the Efficiently Managed Farm," G. F. Warren, Professor of Farm Management, Ithaca, New York.

Recess for lunch.

Meeting called to order at 1:30 p. m.

"Beef Production on Michigan Farms," I. R. Waterbury, Editor Michigan Farmer.

Report of committees.

Election of officers.

Parade of draft horses and Short-horn cattle, in front of Agricultural Building.

Draft colt show and judging demonstration, Pavilion, Agricultural Building.

Wednesday, January 17, 5:00 P. M.

Informal reception and joint meeting of all sections.

Report of secretaries.

Illustrated address, "The Cost of Milk Production," A. C. Anderson, Professor of Dairy Husbandry, M. A. C.

Banquet tendered by the State Board of Agriculture to members of the Michigan Improved Live Stock Breeders' and Feeders' Association.

Michigan Horse Breeders' Association.

President, Jacob DeGeus, Alicia; secretary, R. S. Hudson, East Lansing.

3:00 p. m., Thursday, January 18, colt show, J. S. Montgomery, judge.

Meeting called to order at 1:00 p. m., Wednesday, January 17, Room 206.

Address of welcome, President F. S. Kedzie, M. A. C.

"Renowned Sires and their Influence in Breed Development," J. S. Montgomery, Assistant Professor of Animal Husbandry, St. Paul, Minn.

"How to Dispose of Our Surplus Stock," Frank B. White, Chicago.

Business meeting.

Michigan Hereford Breeders' Association.

President, T. F. B. Sotham, Lansing; secretary, E. C. McCarty, Bad Axe.

Meeting called to order at 9:30 a. m., Wednesday, January 17, Room 113, and at 1:30 p. m., Room 110.

Mr. R. J. Kinzer, secretary of the American Hereford Breeders' Association, Warren T. McCray, Kentland, Indiana, and J. O. Southard, Comiskey, Kansas, all men of national repute, have signified their intention of attending this meeting, assuring the association of one of the best programs in its history. No Hereford breeder, either past or present, who expects to advance the interest of the breed can afford to miss hearing these authorities of national reputation.

Business meeting.

Michigan Shorthorn Breeders' Association.

President, Jay Smith, Ann Arbor; secretary, W. W. Knapp, Howell.

Meeting called to order at 4:00 p. m., Thursday, January 18, Room 109.

Address, "The Future of the Shorthorn as Viewed by the Canadian," Captain T. E. Robson, London, Ontario; "Milking Shorthorns and their Future," Mr. McMartin, representative of the American Shorthorn Breeders' Association.

Michigan Aberdeen Angus Breeders' Association.

President, Cephus Butties, Lewiston; secretary, Alexander Minty, Ionia.

Meeting called to order at 2:00 p. m., January 17, Room 405.

"Possibilities and Future of the Aberdeen Angus Cattle in Michigan," G. A. Prescott; "Aberdeen Angus Cattle and How they Profit in Northern Michigan," President Cephus Butties.

Michigan Guernsey Cattle Club.

President, J. L. Snyder, East Lansing; secretary, Dr. C. G. Parnall, Jackson.

Meeting called to order at 2:00 p. m., Wednesday, January 17, Room 111.

"Methods Used in Developing a Thousand-pound Guernsey Cow in

Michigan," by the owner, Fred C. Gleason; discussion by members of the club. Awarding the annual prize cups, Dr. C. G. Parnall. Demonstration on the approved type of Guernsey, in the pavilion of Agricultural Building, led by H. W. Wigman.

Michigan Jersey Cattle Club.

President, R. R. Smith, Howell; secretary, Mrs. P. H. Walker, Kalamazoo.

10:00 a. m., Wednesday, January 17, judging demonstration in pavilion, entitled, "The Approved Type of Jersey Cow," Hugh G. Van Pelt, vice-president of Kimball's Dairy Farmer, Waterloo, Iowa.

Business meeting called to order at 1:30 p. m., Wednesday, January 17, Room 403.

Mr. Wallace MacMonnies, chief of the Extension Department of the American Jersey Cattle Club will talk on the "Jersey Forward Movement" which will be followed by a general discussion on this topic by the members.

Michigan Red Polled Breeders' Association.

President, N. C. Herbison, Birmingham; secretary, E. J. Peabody, Mulliken.

Meeting called to order at 1:30 p. m., Wednesday, January 17, Room 314.

Remarks by the president, and address of welcome, N. C. Herbison; "History, Development and Improvement of the Red Polled Cattle of Michigan," J. M. East; "Facts and Figures Concerning the Red Poll Cattle," N. C. Herbison; "The Red Poll as a Dual-purpose Cow," E. Foster; "The Influence of the Sire on the Herd," Dean R. S. Shaw; "Benefit Derived from Exhibiting at Fair," J. M. Chase; "The Red Polled Cow in the Commercial World," Andrew Seeley.

Business meeting and election of officers, followed by remarks for advancement of the Red Polled cattle by members of the club.

Michigan Poland China Swine Breeders' Association.

President, J. C. Butler, Portland; secretary, P. P. Pope, Mt. Pleasant.

Meeting called to order at 10:00 a. m., Wednesday, January 17, Room 207.

"What Constitutes a Big Type Poland China?" P. P. Pope; "How Much Can a Small Breeder Afford to Pay for a Herd Boar?" A. D. Gregory; "Does the Average Breeder Make Any Money Selling Breeding Stock?" Robert Martin; "Does the Hog Sale Pay?" W. J. Hagelshaw; "How to Make a Pig Weigh 400 Pounds at Eight Months of Age," W. E. Livingston; "Arranging Sale Circuit for 1917-18," J. C. Butler.

Michigan Berkshire Breeders' Association.

President, J. F. Miller, Caledonia; secretary, B. B. Perry, Leslie.

Meeting called to order at 10:00 a. m., Wednesday, January 17, Room 113.

Introductory remarks by the president; "Berkshire Heads," J. W. Hibbard; "The Tail of the Berkshire," C. S. Baldwin; "The Part that Holds the Head and Tail Together," L. E. Busch; "One Man Capable of Judging All Breeds at the Fair," Chas. Scully.

Michigan Chester White Swine Association.

President, Harry T. Crandall, Cass City; secretary, J. Carl Jewett, Mason.

Meeting called to order at 10:00 a. m., Wednesday, January 17, Room 316.

Many topics of interest will be taken up at this meeting and arrangements made for the annual consignment sale of Chester Whites. The first sale to be held the first week in March.

Michigan Hampshire Swine Breeders' Association.

The Michigan Hampshire Swine Breeders are urged to attend a meeting for the purpose of organizing a state association, to be held at East Lansing, January 17, in Room 111, Agricultural Building, at 10:30 a. m. A lively discussion of means of advancing the interests of Hampshire swine is insured by fanciers of the breed.

Michigan Duroc Jersey Breeders' Association.

President, C. U. Edmonds, Hastings; secretary, M. T. Story, Lowell.

Meeting called to order at 10:00 a. m., Wednesday, January 17, Room 110.

Michigan Oxford Sheep Breeders' Association.

President, I. R. Waterbury, Detroit; secretary, B. F. Miller, Flint.

Meeting called to order at 1:30 p. m., Wednesday, January 17, Room 113.

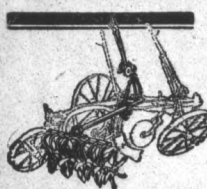
An interesting program is being prepared by the officers of the association and this meeting should be of interest to every Oxford breeder.

Michigan Merino Sheep Breeders' Association.

President, H. L. Mayo, Nashville; secretary, E. M. Ball, Hamburg.

(Continued on page 18).

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Objections to Cow-Testing Associations

FARMERS often make the statement that it would not pay them to join a cow-testing association as their cows are not good enough. The man who makes this statement is in the wrong and does not understand the true nature of these associations. His reason for not joining is the very good reason why he should. The man who has good cows and knows they are good will not be benefited nearly as much as the man who has poor cows, or the man who does not know what his cows are actually doing for him.

These are the men for whom the cow-testing association was designed and they are the ones who will profit the most by it. It is not in the nature of a prize contest and is not designed to find out which man has the best herd. Its purpose is to stimulate improvement by finding out which cows are the best when judged by a profit-making standard. A certain amount of rivalry in a friendly way is a good thing but if it reaches the point of strong competition the association is not accomplishing its purpose. A competition based on the amount of improvement is in no way harmful, but a competition based on the amount of production should not be too strongly encouraged. It is customary for the association to issue reports which are published in the county paper or in the farm journals. These reports as a rule give the cows which are the highest in pounds of production and those highest in profit. This is apt to give, to the uninitiated, the idea that the association is competitive in nature, which is erroneous. A better form of report would be one giving the majority of space to those cows or herds showing the most improvement.

Determining the Profit Producers.

The cow-testing association is aimed to find out just what the cows are doing in the way of profit-making. Very few farmers know accurately what the capabilities of their cows are. They may judge them on the amount of milk they produce but this does not tell the whole story. The cow whose production is relatively low may be a producer of more butter-fat than the high-producing cow. She also may produce it more cheaply and return a larger profit than the high producer. It is for the purpose of doing away with guesswork, and judging the cow's worth on the profit she produces, that the cow-testing associations are formed. Knowing the profit-producing cows the dairyman may then proceed to cull out his poor profitless cows and use as breeding stock only those which have actually been proved to be the best. He is not judging them by type, color, or any misleading standard. He can in time produce from his herd an improved strain bred from profit-making ancestors. This is what the originators of our present pure-bred breeds have done. They started with an inferior type of animals and bred and selected till the present-day breeds were established. The criticism of pure-bred stock in the past has been that they were the victims of fads, such as the demand for certain colors or markings or other details of no practical importance. As a result of these false standards many inferior animals have been used for breeding purposes. The member of the cow-testing association has a practical standard based on the cow's utility and none but the best can get by.

The Accuracy of the Tests.

Another objection is that the records are not accurate. The records are not as accurate as a daily record would be, yet they give a very good record of the cow's capabilities and are much better than the plan of going by guess. An observation of the daily milk records kept by some of the farms of the association with which I am familiar show a relatively small variation in

the daily milk production and the showing made on the day of the test was a fair average of the herds' daily production for that month. The test, however, is apt to vary. Prof. Anderson states that in the records of 200 seven-day tests made under herd conditions that there was a range of from nothing to two per cent in about 75 per cent of the cases. The books of the association previously mentioned show very few cows that vary in test as high as two per cent. The test runs very nearly the same from month to month and seldom varies more than 0.5 of one per cent. I believe that the monthly test gives a very accurate record of the cow's capabilities and is certainly more accurate than a guess.

Another Advantage.

Another objection raised is that it is useless for a man to join an association of this kind since he can keep the records and do the testing himself. This is all very true. The Babcock test is not a complicated operation and can easily be performed by the dairyman. It takes only a short time to weigh the milk and record it. It does not require an expert mathematician to figure out the results which are computed by the tester. On the other hand, how many of the readers of the Michigan Farmer have ever kept a systematic record of their cows and continued it for a year or more? Most farmers shy at keeping records of this sort. After working in the field all day and doing the chores at night, the testing of milk and the keeping of records does not appeal to him. He is very loath to adopt it and very apt to give it up and does not accomplish the result that a regular tester hired for the purpose would accomplish.

With the prices of feed soaring as they are today, the dairyman cannot afford to keep any but the profit-making animals. The sooner he finds the profit makers the sooner he will succeed and if a cow-testing association is ever organized in your community do not hesitate to join it. R. L. CADMUS.

Wisconsin dairymen are planning a Pound-a-Day club to which membership requirements would be that the dairyman have ten cows in his herd which would average 365 pounds of butter-fat a year. A further requirement would be that none of the ten cows should produce less than 300 pounds a year. If a member failed to meet the requirements he would be dropped until he could again qualify. Suitable prizes could be given at the meeting of the State Dairymen's Association to those having the highest average herd records.

Why Wait

Mr. Coffee Drinker,
till heart, nerves, or
stomach "give way?"

The sure, easy way
to keep out of coffee
troubles is to use the
pure food-drink—

POSTUM

Better quit coffee
now, while you are
feeling good, and try
Postum, the popular
American beverage.

"There's a Reason"

No Money In Advance

The Great
Majestic
Cream
Separator

100%
Efficient

Send
For
FREE
Book

Farm
Credit
Terms

Made In
Four Sizes:
375, 500, 750,
1,000 lbs.
Capacity

Has all latest im-
provements includ-
ing remarkable
inside oiling
device and
improved
separable
disc
bowl

Mail
This
Coupon

Sensational
Offer!

Only Hartman's with their \$12,000,000.00 capital, their tremendous organization and over two million customers are capable of such a record breaking offer as this: Order any size Majestic Cream Separator you want—no deposit—no C. O. D.—no security. When the separator comes, work it 30 days and if you are not fully satisfied with it, send it back at our expense and you will not be out one cent.

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Lifetime of
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If you are convinced that the "Majestic" is a wonderful bargain and just the Separator you want, then keep it and pay one-tenth in 30 days after arrival and balance in 9 equal monthly payments, or pay one-sixth, 60 days after arrival and balance in 5 equal payments at intervals of 2 months each—giving you a

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We make this remarkable No-Money-In-Advance, Year-to-Pay Offer because we want you to learn from your own experience that here, at last, in the "Majestic" is the perfect separator—a masterpiece of mechanical skill and ingenuity—an amazing triumph achieved in Cream Separator construction. Test it on warm or cold milk and find out by actual results how the "Majestic" skims down to the last drop—note the fine condition of the cream—how much quicker it skims than any other you have ever seen. You will find it just the separator you want. Our free trial without money or security offer proves it to you.

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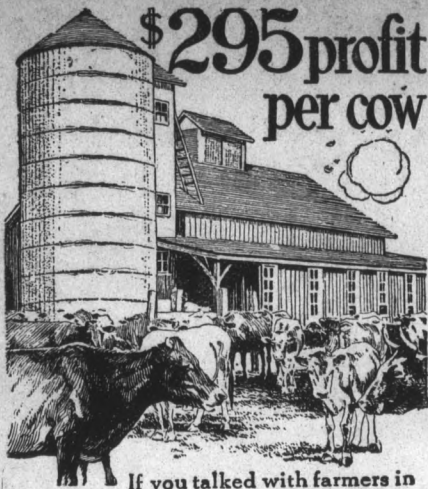
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**\$295 profit
per cow**

If you talked with farmers in Arkansas and Texas, they'd show you that while a cow costs over \$100 per year to maintain up north, she costs only \$55 per year to keep down there. Figure up all the advantages along the

Cotton Belt Route in Arkansas and Texas

with its much lower priced land, twice as long pasture season, far shorter winter feeding, no expensive shelter, etc. You'll then see how \$295 gross can be made from a good Holstein or Jersey, yielding \$300 in milk, a \$25 calf and manure worth \$25. And they get higher prices for their products, too—milk retails at 10c a quart, butter brings 35 to 40 cents and 30c is paid for 20% cream at the local creameries.

J. R. Scurlock ships cream to Piggott, Ark. and gets 35c a lb. for his butter, f.o.b. his station. S. B. Todd of Comanche, Tex. started dairying with four good Jerseys, sold milk and butter to local places and cleaned up \$7,972 since 1912. After 3½ years he sold part of his herd for \$2500 cash, reserving 19 head of choice stock worth \$1760. He did this on only 105 acres. W. Y. Wester, near Sulphur Springs, Texas keeps 9 to 12 cows; yet he sells from 7,000 to 7,500 lbs of 5% milk per month, receiving \$100 to \$175 per month for it. The same advantages that make dairying extra profitable in Arkansas and Texas make all lines of farming pay much better there than up North. You ought, at least, to get all the facts and get them now. Send for

Two books FREE

prepared by a practical farmer who has traveled all through Arkansas and Texas and got pictures of the farms and actual statements from farmers. Tells cost of land, crops raised, etc., and about towns, churches, schools and social conditions. Write at once for these free books.

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But I Have
an Appetite!"**

A cow that eats poorly usually milks poorly, and any poor milker is a loss. Lost Appetite is only one of the common cow ailments that quickly disappear after judicious use of Kow-Kure, the great cow medicine.

Kow-Kure has a record of over twenty years' success in the prevention and cure of such diseases as Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Bunches, etc. Most of these diseases spring from disordered digestive or genital organs, and Kow-Kure has strong medicinal qualities which tone up and permanently strengthen the entire system.

A trial is convincing. Kow-Kure is sold by feed dealers and druggists, in 50c and \$1.00 packages. Write for free treatise, "The Home Cow Doctor."

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DAIRY PROBLEMS.

A Good Ration Now.

I am now feeding a mixture of three bags of ground oats, one bag of buckwheat middlings, and one bag of cottonseed meal. I have been feeding about one pound of this mixture to every five pounds of milk. I also feed corn ensilage, mixed hay and corn-stalks. The cows do not seem to hold up on this feed. I am wondering if this mixture is deficient in protein. Will you balance a ration that in your estimation will be the most satisfactory, at the present market prices, namely, cottonseed meal \$45 per ton; oil meal \$48 per ton, and prepared gluten feed \$40 per ton?

Kalamazoo Co.

H. A.

I hardly see how this ration can be improved as a milk producer. You certainly have sufficient protein and all the feeds composing the ration are good feeds. I don't think your unsatisfactory flow of milk is due to the ration. It must be something else. I can only suggest causes that might be remedied. Are the cows properly milked? Poor milkers will greatly reduce the yield. Are the cows too much exposed to cold weather? They ought not to be out doors too much of the time. Is the stable warm? It should be about 50 degrees. Is the stable properly ventilated? Is it properly lighted? Does the man who cares for the cows like cows? It makes a great difference. Are the cows fed and milked regularly, etc.?

A Ration with Variety of Feeds.

We have a herd of ten cows and as our corn was nearly a failure, and the last crop light on account of drouth, we have to buy grain for them. We have plenty of good clover hay and some corn stover for roughage, but no grain. I bought at the elevator: 500 lbs. bran; 300 lbs. gluten meal; 200 lbs. prepared feed; 100 lbs. of middlings; 100 lbs. cottonseed meal, and mixed it all together. It averaged about \$38 per ton. What can I get that would make a better balanced ration?

Livingston Co.

C. J.

I can offer no objection to this ration. It is a good one and about as cheap as we can get them this year. Most people would not use so many feeds at one time, but the only objection that can be offered is the bother of mixing so many. You could use bran, middlings and cottonseed meal with good results, or bran and gluten feed. But there can be no objection to using them all at once if you wish. If the cows are properly cared for they should do well on this ration. Feed all the clover hay and cornstalks they will eat without undue waste.

Most Economical Way to Feed the Corn Crop.

What is the most practical and economical method of handling the corn crops of small dairy farmers, considering the cost of a silo and machinery to fill it, and the corn crop, ears and all, go into it. In this case where we are to get corn to grind with other grain for the cows, pigs and hens. The husker and shredder will not cost more than the silo filler. And the barn and mow must be had, silo or no silo. So are the silo men out the cost of the silo and also the corn for the stock.

Huron Co.

G. D. M.

The merits of the silo have been discussed so long and so thoroughly that there is nothing new to say. It costs less to put corn into a silo than to harvest it in any other known way. A silo costs less for storage than a barn for the stalks and a crib for the corn.

In dry curing the corn plant fully one-third of its food value is lost. Absolutely wasted. What is that one-third worth?

If you want corn for pigs, grow more corn than you want for the silo and husk part of it, or buy corn for the pigs. Shredding corn is not a success. The stalks will not keep.

In dairy communities a man owns a silo filler and goes from farm to farm to do the work, the same as threshing. You should interest your neighbors and co-operate in buying a silo filler.

I have entirely given up the idea of husking corn. It costs too much. I can't get the help. I can buy corn usually cheaper than I can grow it.

A Hog At His Best

He's never at his best if he's wormy. Neither is your other stock. Worms distress animals, retard thrift, bring on contagious diseases. Get rid of worms.

Dr. Hess Stock Tonic

Expels Worms

Makes Stock Healthy

I tell you it pays to condition your stock now, in midwinter. Use Dr. Hess Stock Tonic and clean out their systems, purify the blood, then they will eat with a relish and digest their food. Buy it from the local dealer—the man you know in your town.

Why Pay Peddlers Twice My Price?

Costs you one-half less to buy and requires no more at a time to feed.

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Smaller packages as low as 50c (except in Canada and the far West and the South).

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So sure am I that Dr. Hess Stock Tonic will positively rid your hogs of worms and keep your stock healthy and vigorous, that I have authorized my nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

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Helps to keep poultry healthy and make hens lay. Guaranteed.

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Kills lice on stock and poultry. Provide your hens with a dust bath, to which add Instant Louse Killer occasionally. Your hens will do the rest.



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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

Rural Folk of Ireland See New Era

By WILLIAM B. HATCH,

Michigan Member of American Commission

I LEFT the land of my forebears, Dumfriesshire, Scotland, went out to Stranrarer and took ship across the channel to Larne in Northern Ireland, on my way to Dublin where the American Commission was to rendezvous for its final study of European Co-operative Agriculture.

Although it was 9:45 in the evening and the electric lights were on in Larne the verdant fields of the Emerald Isle were plainly visible. The stone or hedge fences, the green pastures and whitewashed and stone houses,

stretched back up the hillsides to the horizon.

The ride of about three hours in the early morning to Dublin was most refreshing. The land from which the rock has been removed and converted into fences and buildings under good tillage methods was producing as good crops of oats, hay, mangles and turnips as we have seen in the British Isles.

Miles upon miles of stone fences run irregularly over the hills and down the depressions to the sea. The one-story stone cottage, inadequately lighted, with a chimney at each end is the invariable type of architecture. To some extent thatched roofs are yet seen but are rapidly giving way to slate. Barns are one-story and of stone and illy lighted or ventilated. The hay, owing

to so much rainy and cloudy weather, is encouraged to wilt as much as possible after cutting, then put into considerably larger cocks than would otherwise be required and left to cure in the field. Much care is exercised in making these cocks and twisted ropes of hay are fastened over the top to hold them down. The government is aiding the farmers in constructing a type of hay barrack. It consists of a long oval galvanized roof supported by posts of railroad rails. Sometimes galvanized sides extend down part way on

WORLD EVENTS IN PICTURES



New Head of Greek Government Presenting Standard to Defender of Cavala.



Pigeons Still Used to Carry Important Military Dispatches.



The Only Woman Mayor of an American City.



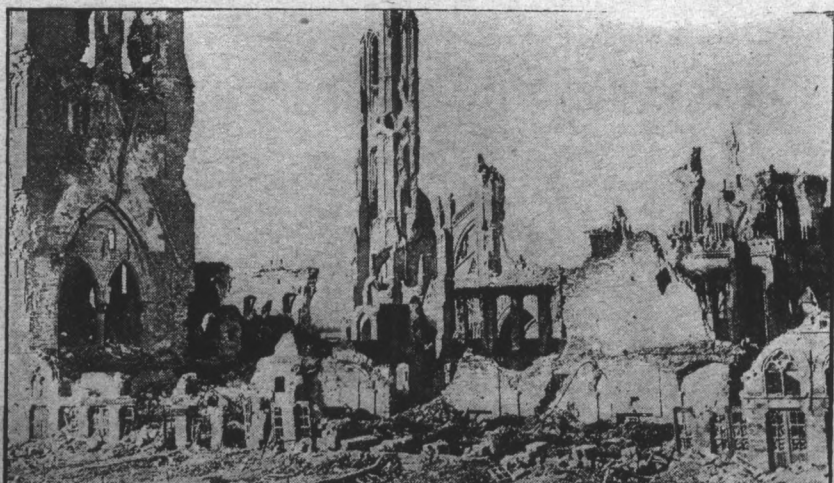
Soldier Delivers Orders in Boat Built of Tin Cans.



Little Nurse Bandaging Wounded Soldier's Thumb.



In this Country to Prepare for Transatlantic Flight.



Ruins of Great Cathedral at Ypres. Reduced to Mass of Debris.



Battlefield in France Showing Trenches and Pits Made by Bursting Shells.

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Get All the Cream

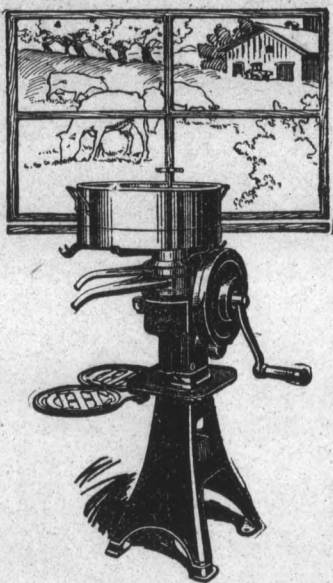
YOU cannot expect to get all the profit from your cows unless you have a separator that skims clean. Why don't you make up your mind here and now to buy a **Primrose** or **Lily cream separator**? Then if your checks are not big enough, you will know that the trouble is with the cows, not with the separator.

The president of the Iowa Federation of Cow Testing Association says that of all the separators in use in his association, and they are many, the **Primrose** skims closest. It leaves less than one-hundredth of one per cent of the cream in the milk. The **Lily** skims just as close. Neither one wastes any cream. With prices of everything as high as they are now, to waste cream is little short of a crime.

Yes, you can buy separators for less money. You can also pay more. But you cannot buy a closer skimming machine, one that runs easier, or one that will skim clean for a longer time. Do not delay. The longer you put off buying a **Primrose** or **Lily** cream separator, the more you lose. Get one of these machines, and your separator troubles will disappear as if by magic. Drop us a card for catalogues and full information.

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D. HILL NURSERY CO., Box S230, Dundee, Ill.

the side from which the prevailing winter wind blows.

Our Irish program re-revealed an old truth—that all history revolves about some personality. The actuating spirit in Irish and it may be truthfully said of much of the agricultural development in other parts of the British Isles as well, is Sir Horace Plunkett. His name is cherished in America and other countries as well. He happened to be in America when the American Commission's program was under consideration. It was he and Mr. Roosevelt who persuaded those in charge of the program to broaden its scope so as to include co-operative production, distribution and country life as well as finance.

Few men, moreover, on the European side of the Atlantic know America and American agricultural conditions so well as Sir Horace Plunkett. As the owner of a large stock ranch in our west, he visits our continent every year and so when we betook ourselves to Plunkett House, the official home of the Irish Agricultural Organization Society, we felt that we would enter an atmosphere of friendly and sympa-

quises, to market poultry, eggs and other kinds of produce. In one instance—at Roscrea in Tipperary—between three thousand and four thousand small farmers have provided the necessary capital and embarked upon the highly technical and ambitious project of a co-operative bacon factory; while at Wexford a similar project for the co-operative disposal of beef, mutton and pork is being wisely and cautiously undertaken. Other societies have been formed to treat the flax crop between the harvest and the sale to the spinner. Credit societies have been formed on the Raiffeisen plan and to the development of this system we look for the economic and social redemption of the most backward and debt-laden of our rural communities. We do claim to have achieved and successfully demonstrated that the co-operative system is capable of enabling the farmer to produce and distribute efficiently and economically, and at the same time to finance both these operations.

"If Ireland has contributed anything to the solution of the rural problem it is to be found in two cardinal propo-



Good Husbandry and Stone Fences We re Everywhere Present in Ireland.

thetic and appreciative understanding of our problem. We were not disappointed.

The general conference covered "the application of co-operative principles to the agriculture of the English speaking countries with special reference to the United States and Canada." Their Excellencies, the Lord Lieutenant and the Countess of Aberdeen, entered actively into the program as presented and thus multiplied the number of their American friends to greet them here during the past few months.

The following glance at the viewpoint of Sir Horace Plunkett will, I trust, aid in clarifying our perspective on this side of the sea:

"The lesson we learned, put in the fewest words was this: The success

of our continental competitors was due to a combination of organized voluntary effort, with judicious state assistance. Both were necessary, but the part played by the government was of insignificant importance compared with the astonishing potency of co-operative production and marketing. Everywhere, too, the co-operative organizations of the producers was not only highly effective as a method of business, but was the secret of the political power which enabled the farmers to get the assistance they needed at the hands of the government. We, therefore, set ourselves to introduce agricultural co-operation into Ireland first upon a foundation of organized self-help—the best definition I know of co-operation—to build a system of sound educational state aid.

"We began with the dairy industry in the south of Ireland. Today there are approximately 100,000 farmers in this little island engaged in various forms of agricultural co-operative effort and accounting probably, with their families, for half a million of the population. They combined together to buy seeds, fertilizers, implements, machinery and other agriculture re-

sitions—one of principle, the other of order. The first is that you must approach the problem on its three sides. You must regard agriculture as an industry and as a business and as a life. Into the industry you must introduce the teachings of modern science as it has been introduced into every other industry. Into the business must be imported methods of combination, simply because, under modern business conditions, transactions must be on a large scale to be economical. The life of the rural community must also be modernized by making it physically more comfortable, mentally more satisfying, and socially more enjoyable. Our Irish formula is better farming, better business, better living.

"There are certain distinguishing characteristics of the co-operative system—notably its democratic principle of one man, one vote, in the control and its distribution of the profits over the business done rather than over the shares. I personally place a far higher value upon the effects of the co-operative organization than upon its economic benefits. Co-operative organization develops a social spirit which is the antithesis of the selfishness engendered by the capitalistic joint stock combination."

One of the most inspiring addresses made before the commission was that by Mr. George Russell, the gifted editor of the Irish Homestead. During this address Mr. Russell expressed his conviction thus:

"More changes often take place within a dozen years after a co-operative society is first started than have taken place for a century previous. I am familiar with a district—Temple Crone in northwest Donegal. It was one of the most wretchedly poor districts in Ireland. The farmers were at the mercy of the gombeen traders and the agricultural middlemen. Then a dozen years ago a co-operative society was

(Continued on page 18).

"Mister 44" By E. J. RATH

Stoddard spent the minutes in covertly watching her. In the ruddy light he discovered that the damp coils of hair that fell about her shoulders almost matched the fire itself. Once he furtively fingered a strand that lay across his knee. Sadie felt the touch and glanced down.

"It'll dry after a while," she laughed. "But it'll be an awful mess, 'cause I ain't got a comb. The one I had went swimming along with my swell outfit."

"It looks good to me just the way it is," he said with frank admiration.

"It's a fast color, anyhow," said Sadie in a matter-of-fact tone.

But, though her voice was casual, something inside of her gave a little jump. No. 44 liked her hair! That was worth knowing. In the morning, she decided, she would manage somehow to arrange it, even without a comb.

"I'm sorry I had to throw your stuff overboard," he said, his mind reverting to the suddenly ended voyage. "We'd never have managed to get it ashore, anyhow."

"I'm not worryin' about it. I'll get some new things after I get to workin'."

"You'll have to let me lend you some money now, I imagine. Please don't hesitate to say so."

"Not yet," answered Sadie. "Of course my pocketbook is gone; that was in the grip. It had some change in it. But—"

She hesitated, then laughed and colored. "Well, I still got fourteen dollars left."

"That'll help some," he said gravely. "Better dry it before it turns to pulp."

Whereupon he arose and sauntered off into the woods, whence he returned several minutes later, dragging a fresh log for the fire. He noted a ten-dollar bill and four ones carefully spread out near the rim of the embers and weighted with little stones. A smile came to his lips, but he hid it from Sadie.

"You got to let me do some work," she said, half-rising from her seat. "I can carry wood."

"You'll have work enough in the morning. Sit still. How's the fire?"

"Great! It's makin' me lazy, though. I just like to sit and look into it—and think."

"About what?"

"Everything. I get funny ideas sometimes, No. 44—ideas that ain't got nothin' to do with what's really goin' on. Do you know what I was thinkin' of just as we was gettin' upset out there? I was thinkin' what a grand movie it would make."

"You're one of the film fanatics, I take it," he said, laughing.

"I'm strong for 'em, if that's what you mean. Who ain't? I mean folks who live in cities and can't get what they want except in the movies. I went regular. Why, I put aside so much for it every week! I just couldn't miss them!"

"How much did you get a week?" he asked curiously.

"Seven dollars."

He considered the possibilities of a seven-dollar income, and found the subject depressing.

"Not very easy sledding," he said.

"Why, I don't know," she returned promptly. "Of course, you can't buy no automobile and you can't do too much trolley-ridin'. But a girl can manage. I done it. Why, I had a bank book!"

"The other girls didn't," asserted Stoddard.

Sadie's eyes were alight with astonishment as she turned to him.

"How did you know that?" she demanded.

"I can't say; just guessed it. It's right, isn't it?"

"Yes; it's right. They thought I was a nut. But"—and she tossed her head with a gesture of defiance—"if they'd 've got that letter from you they would not have been able to call on you, like you said to do. They wouldn't 've had car fare."

So here was the explanation! More than once he had puzzled over the bland assurance with which Sadie cut loose from Buffalo and made her way to the outdoors country, putting her trust in a stranger. Her justification, it seemed, lay in his letter. He remembered the phrase now: "Any time I can do anything for you, don't fail to call on me." So she had called—literally!

Perfunctory commonplaces of correspondence Sadie interpreted to the letter. She appraised things at face value. She knew no subtleties of speech or thought.

It was all beautifully direct and simple, he reflected, and rather to be admired. But a literal-minded young woman was also an incentive to caution. He must be careful.

"Speaking of money," he observed, "it's the last thing that's of any use to you and me until we get somewhere. Let's see what else I've got. I have a knife and eleven matches. And here's my watch; stopped, of course."

He held the nickel timepiece to his ear, then shook it.

"Full of water," he commented. "Well, we couldn't eat it, and it won't keep us warm; so that doesn't matter."

He completed a search of his pockets, bringing forth a pipe and a dripping tobacco-pouch. The latter he examined anxiously.

"About half a dozen smokes," he said ruefully. "That won't last long."

He laid the open pouch near the fire and blew the water from the stem of the pipe.

"Now, what have you got, Sadie?"

Sadie had been hunting, too, and one find resulted. From a pocket that had been skillfully concealed in her skirt she drew forth a damp, sticky cake of chocolate.

"There's just one end of it been nibbled," she said. "I was savin' it for a feed."

"Great!" he exclaimed. "We've got fire, grub, a knife, tobacco. Why, we're millionaires!"

"You're one of those things yourself, ain't you? An op-ti-mism," pronouncing the syllables carefully. "I told you I'd remember that."

Stoddard now began to consider their prospects minutely. If they were on the mainland there was, beyond doubt, a long and painful tramp ahead of them. No roads had been cut in the Deepwater section, for no timber had ever been taken out, while the only trails that existed in the forests were mere overland connections between water-courses and lakes.

But he feared that they were not on the mainland at all. While the darkness prevented any accurate survey of their refuge, Stoddard suspected that their swim had landed them upon an island. He did not disclose this belief to Sadie; there was no need to alarm her in case it should turn out later to be incorrect.

Even granting that it was an island, there might be no cause for dismay, despite the fact that they had no means of departing from it. Several of the islands in the South Arm were in plain sight of that which contained the hotel, and a signal made on any one of them would be easily seen.

Judging, however, from the direction of the gale that was responsible for the wreck of the canoe, Stoddard doubted if they were marooned on any such fortunately situated isle. He knew there were deep and seldom visited

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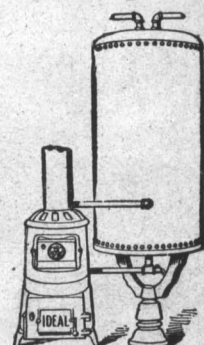
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bays along the edges of the South Arm, many of which were studded with islands that rarely felt the tread of the camper's foot. If it was to one of these they had been driven their case was quite different—and not so pleasant. It meant delayed rescue, and something else that would not be delayed—hunger.

"You're frownin'," observed Sadie. "Anything wrong?"

"Not at all," he answered hastily. "You don't need to be scared of tellin' me if there is. Is there any animals goin' to hurt us?"

He burst out laughing; then apologized.

"Why, that's all right," she said placidly. "I expect to get laughed at up here, for a while, anyhow. I'm green. I think there's been lots of times already when you wanted to laugh and didn't. It don't hurt my feelin's, so long as it ain't a shrimp laughin'."

Because he wanted to know she told him about shrimps generally and collectively, and the Shrimp specifically.

"The Shrimp wouldn't never have come through that!" she exclaimed in conclusion, pointing out to where they could catch glimpses of the wind-lashed lake.

"The Shrimp," said Stoddard, "after your description of him, would probably have been invited to do his own swimming."

"He'd 've been easier'n me to handle," she said thoughtfully. "I'm a house."

"Nonsense!"

"Maybe I ain't to you, but I am to most people. Do you know what some of the girls used to call me? Woolworth. They said I was as big as the Woolworth Building."

"Did you ever see it?" he asked quietly.

"No. I never was in New York." Stoddard began poking at the fire and adding fresh wood.

"Well," said Sadie after a pause, "what about the Woolworth Buildin'?"

"Why, it happens to be the handsomest big building in New York; that is all."

"Oh!" gasped Sadie. "Why—oh!"

She seized a stick and began digging in the soil at her feet, bending over to conceal her face. Presently she said "Oh!" again, but she did not look up from her occupation. She was still busily occupied when Stoddard made another trip for fire-wood.

As he strode into the woods she glanced up cautiously and looked after him.

"He'll think I was fishin'," she whispered. "But I wasn't; I didn't know. I never even seen a picture of it."

Now for the first time she frowningly inspected the rent in her steaming skirt. She began a fruitless search for pins, and sighed. Finding that her hair was nearly dry, she essayed to wind it into a coil on top of her head, although all hairpins had vanished.

"I must try to get a picture of it," she said musingly.

Stoddard finally managed to squirm into his damp boots, after which he made a series of journeys into the brush, returning each time with his arms full of balsam-boughs.

"What for?" she asked finally. "I'm going to make you a bed," was the explanation.

She watched the construction of it with an eye for every detail.

"There! You'll not find that so bad," he said as he finished the task.

"Bad? It looks elegant!" she exclaimed. "Say, you know a lot about this business; don't you, No. 44?"

"I'm always learning something new."

"You must learn me some of it," she said with a decisive nod.

He bit his lip and shook his head, although she did not see him. Even had she witnessed this involuntary sign of annoyance Sadie would not have understood. She did not know



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that her speech was always so different from that of Kitty and Estelle.

Stoddard smoked one pipeful of the treasured tobacco and began to feel comfortable again. His clothing was nearly dry. Sadie assured him that she was "perfectly dry," but the wisps of steam that arose from her garments whenever she moved close to the fire testified that she was either oblivious to mere dampness or was prevaricating with a view of relieving him of possible concern for her.

They talked until she found herself yawning, and then she stretched herself upon the balsam couch.

"It's soft and springy and it smells good," she said sleepily. "I've had some outdoors, anyhow, even if it's the last."

After a while Stoddard propped his back against a tree and let his head droop forward on his breast. Only the fire remained awake.

CHAPTER XI.

Sadie Finds She's Rich.

Morning was golden. That is a habit with September mornings in the Deep-water country. The wind still whipped the lake, but there was not so much as a fleck of white cloud in the sky.

It was the sun shining in her eyes that awakened Sadie. She yawned, stretched luxuriously, and mechanically reached an arm toward the place where her sixty-nine-cent alarm-clock usually stood. When her hand touched damp moss she sat up quickly and stared at the trees and the water. Then she smiled contentedly.

"It's real," she said. "I was afraid I'd been dreamin'."

Now her glance rested upon Stoddard, whose shoulders had slipped from their support against a tree and whose body lay at full length on the earth, relaxed in heavy slumber. She contemplated the sleeper gravely for a moment, then smiled again.

Sadie rose cautiously from her balsam couch and tiptoed toward the edge of the lake. The movement brought her close to where Stoddard lay, and she paused to observe him.

"He don't look comfortable," she thought. "I oughta fix his head, but it might wake him."

She resumed her noiseless journey and presently found herself at the brink of the lake. Here, in the immediate lee of the shore, the water was still and clear. How deep it was she had no idea, but the rocks at the bottom were easily visible. Something moved out of from the shadow of one, then disappeared from her view like an arrow.

"Wish I had a fishin'-pole!" she exclaimed softly.

Across the stretch of water, more than half a mile distant, lay an island, and beyond that a high bluff that skirted the mainland. To her right were more islands, while in the other direction there seemed to be a long stretch of water bordered ultimately by hills whose outlines were now softend in a blue-gray haze.

Sadie glanced at the sleeper. He had not stirred.

"I'll take a little walk," she said. "No. 44 needs his sleep."

Carefully picking her way along the rocks until she was out of ear-shot, Sadie began to walk as briskly as the contour of the shore would permit. She was not lame, but her muscles were stiff and cramped. Occasionally she halted to stretch her arms upward and backward and fill her lungs to their utmost with the virile morning air. Her dress was nearly dry; an hour of the sun would finish the work.

She halted for a few minutes on a little beach, the first break on the rock-bound shore, and picked up colored pebbles that caught her eye. A pair of birds chirped at her as they ran swiftly about on fallen trees or hopped among the underbrush.

"Hello!" was her greeting.

(Continued next week.)

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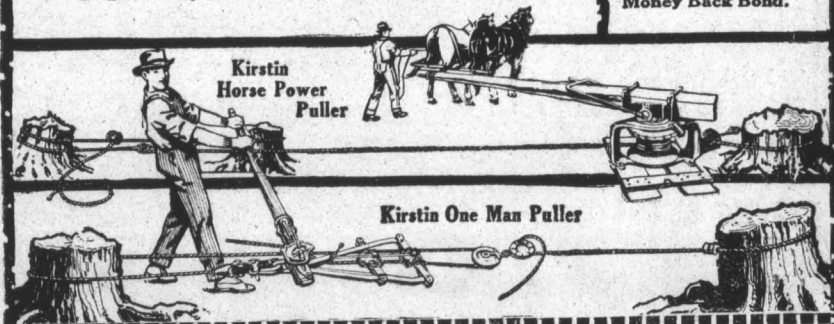
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Woman and Her Needs

"'Twas Him"

S EEMS funny that with all man's boasted originality he has never since the dawn of creation thought of a new excuse for trouble. Woman always goes and does it. Since the day when Adam crawled out of the apple episode by saying, "Lord, she done it. I just took a bite," woman has been "the blame of it," as the small boy puts it.

Woman is to blame for the rotten situation in the body politic, not because she hasn't the vote, but because she doesn't train her sons right. She is to blame for drunkenness, because she put brandy in the mince pie when said small son was a youngster and thus brought him up a bum. She is to blame for divorce, because she is extravagant, or jealous or a nagger, or can't cook, or just because she is a woman. She is to blame for race suicide because she prefers poodle dogs to babies. She is to blame for stolen autos and joy rides, because she lets her daughters go autoing with their school boy friends. She is to blame for melon stealing, because she planted the melons. She is to blame for church rows, because it is her hard work in raising money to run the church that keeps the institution financially sound. She is too blame for the cigarette evil because she uses the wrappers to make sofa cushion tops. She is too blame for the war in Europe, because she has borne sons. She is to blame for everything bad that happens under the sun, the root of all evil and the guilty wretch who introduced sin and fashions into the world at the same time.

Well, so be it, Q. E. D., and f. o. b. and "requiescat in pace" and all the other phrases that apply. I am willing to stand for all the foregoing charges. But there is one thing for which woman is blamed that I shall protest against so long as I have breath. And that is the absurd, criminal, wicked and utterly inane charge that women are to blame for the present outrageous increase in the high cost of living.

"Women should find substitutes for the foods which have increased in cost," bellow the men who are benefiting by the prices, and who, because they begin to fear detection, must seek for someone else to blame. "Women insist on buying the high-priced foods when they could just as well feed the family something else."

Granted many women still buy, milk, butter, eggs, potatoes and expensive cuts of meat. We'll admit that. But why? Because the men for whom they cook will not eat anything else. Aside from the wealthy, who do not feel the pinch anyway, the average American table is set with one idea, to please the man of the house.

Go to the market where the poor women are trying to make money sufficient for three days do the work of seven, and listen to their conversation. It runs something like this:

"I could get along with stew and sausages, but he won't eat them. He says all he gets in this world is what he eats, and so long as he earns the money I can just cook what he likes. He's got to have his roast and chops, and they do cost."

"Yes, ain't it awful?" replies her companion. "And the vegetables! I tried cooking turnips and carrots and such, but he said he never had ate cow fodder and he didn't intend to begin. Now I like those things, but he's got to have canned corn and peas and tomatoes and celery and lettuce; and they've all gone up something fierce. I tell him if he'd just try these things

he would learn to like 'em, but he says his father fed such stuff to the pigs, and that's all it's fit for."

There is the situation. And there is the reason women buy the high-priced foods. Father must have the best. The baby must have milk. Oleo as a butter substitute will not be tolerated on the table, and father and the boys never see the gravy bowl. Unfortunately people have to eat in order to live, and up to date there has been no substitute for food discovered. Women, as a rule, like the cheaper cuts of meat and coarse winter vegetables. They dote on boiled dinners and homely fare. But the men object. I am speaking of the great middle class where the high prices are felt. Not of the butterflies who can only think of food in terms of a cold bottle and a hot bird. The middle class woman is willing and anxious to save, to make any sacrifice and to cook any simple provender. She does the spending and she can see the awful inroads that the day's food makes in the pay envelope. But if the family won't eat the simpler food it is foolish to prepare it.

She is roared at again because she buys package foods instead of in bulk. Is there a store left where she can get food any other way?

Breakfast foods are all in boxes, molasses is no longer drawn from the barrel, and by-the-way, instead of a quart can you get about three-quarters of a quart for twice what you used to pay for the full quart. Even sugar and vinegar are coming in separate conveyers and you can either buy the container or go without. She is told how much cheaper it is to buy by the bushel and the case, but on the average salary, paid weekly, if you buy a case of canned goods you go without much else the rest of the week. Your weekly expenses do not permit of buying largely in bulk unless you plan to devote the entire contents of the pay envelope to setting the table.

Women are in no way to blame for the present situation. But of course they will be charged with it. It is so much easier to shift the blame on the harassed buyer than it is to take the money and go out and better matters, or to look for the real cause, that man will simply fall back on his old excuse.

Or is it because men are afraid they will find out the real reason if they look for it, that they point at woman as the culprit?

DEBORAH.

HOME QUERIES.

Household Editor:—Will you please send me a recipe for grape wine?—Reader.

Wash and stem grapes and squeeze through a coarse bag. Allow one gallon of soft water to three gallons of juice, and three pounds of brown sugar to the gallon of juice. Let stand six weeks in an open vessel, covered with a thin cloth, then pour off carefully, strain through two or three thicknesses of cheesecloth, and bottle.

Household Editor:—Answering inquiry of I. L. L. in your paper of November 18, would suggest that if she will perforate the bottom crust with a fork before filling, and cook with slow fire, so as not to allow to boil, she will avoid the bubbles referred to.—Mrs. H. H. R.

Graham Bread.

Half cup of molasses, half cup of sugar, two cups sweet milk, one round- ing tablespoon of butter, one teaspoon of soda, one teaspoon of salt, one small teaspoon of baking powder, three cups of graham flour. Bake slowly.—L. C.

Domestic Science In Rural Schools—IV

MRS. EMMA HINKLEY COLE, commissioner for Berrien county, reports that her schools "have made a beginning." Miss Croucher, New Buffalo, served hot soup, beginning it before school and having the larger girls take charge later under her supervision. Miss Clay, of Coloma, had a sewing class for girls and a whittling class for boys. These classes were given the time after recess on Friday afternoons. The girls made aprons and the boys match safes.

"The most successful thing I started was learning to tie different kinds of knots in ropes," said Mrs. Cole. "Usually some man in each district is willing to go to school Friday afternoons during the winter months and teach the boys, while the teacher instructs the girls in sewing. This work was successfully carried out by Miss Henderson, of Eau Claire. The boys looked up different kinds of knots in the dictionary, one boy brought a book on knots, and every boy brought a piece of rope for practice. All sent samples of their work to me properly labeled. There were some knots I had never heard of, all found by the boys in the dictionaries."

In Isabella county, quite a little work has been done in sewing, under the direction of Commissioner E. T. Cameron. Sewing contests have been held in every school in the county for the past six years, and the number of exhibits in a single year has reached over 200. Last year the county had seven entries at the State Fair and won seven first prizes.

Three prizes are given for the following articles: Nine-patch quilt block; kitchen apron; embroidered towel; set of hemmed napkins; hemstitched tray cloth; doll's dress; sofa pillow and bag. Directions for making these articles are sent out by the commissioner. The set of napkins may consist of either four or six. Money prizes are given of three dollars, one dollar, and 50 cents, the work being donated by the various banks in Isabella county. The work is done in school and exhibits made at a county meeting in the spring, when prizes are awarded. Commissioner Cameron is planning to enlarge the work to include garment making next year.

In addition to sewing, seven teachers have served hot noon lunches. This work has been done individually, however, but plans are being made to make the work general throughout the county.

Warm lunches are served in 21 of the schools in Eaton county, according to reports of Commissioner Cynthia A. Green, but no systematic work is done in domestic science. Commissioner Sheridan Mapes, of Kalamazoo county, makes a similar report for his county, though not specifying the number of schools.

Commissioner L. L. Livermore, of Branch county, has had considerable club work done. So far the girls have worked in sewing clubs, either after school or in the evening, meeting at least once a month. No work has been done thus far in cooking. The girls pledged themselves to finish three out of six garments assigned to them, and in every case they did their part. Parents and teachers both are enthusiastic over the work. The work so far has been done in Algonsee township, district No. 7, under the direction of Miss Christel Groth; in Bethel, district No. 3, Miss Bernice Selby, teacher; Bethel, district No. 8, Miss Fastina Williams, teacher, and in Sherwood, district No. 1, Miss Margaret Doty, teacher. The work is to be started in five more schools this year.

Work in domestic science in Cass county is done mostly in connection with hot noon lunches. Mrs. Ruth H. Mosier, commissioner, reports that the Mothers' Clubs help in working out the menu. In the schools taught by Miss

Mary Woods, Cassopolis, and Mrs. Mattie P. Hollenbeck, Dowagiac, the mothers, aside from the daily help, meet once a month with the children and have a pot-luck dinner, followed by a program. Besides these two schools, Miss Ann Banks, of Jones, also served warm lunches with success.

"Our aim has been warm lunches at noon," says Miss Wood in telling of her work. "The plan was this: Each mother prepared one thing for just her own children, it would be some kind of soup, tomatoes, corn, or something that would warm easily. This overcomes the difficulty of the poor not being able to contribute otherwise, also the difficulty of homes in which sanitary conditions were not the best.

"One lady loaned her oil stove last year. This year we are using the top of our corner furnace. At the recess the girls arranged the pails on the stove and at 11:45 I would light the burners. In most families there was at least one girl. If she was eight years old she was old enough to serve her brothers and sisters. We had an extra table for this purpose. Some of the children washed their dishes and kept them at school, while others carried them home. Mothers said it was much easier for them to put up lunches and more economical. Besides it amused the children on stormy days when otherwise they would be restless. It is a school of 26, none going home at noon. Our room is small. A large proportion of the children are under eleven.

"The children are pleased with the idea and it is my belief that this plan could be carried out under most any conditions. The children contributed an exhibit of vegetables, grains, sewing and baking to a community fair. This being done at home except the sewing."

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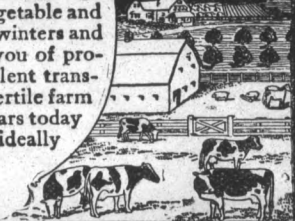


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Grinds ear corn, shelled corn, oats, wheat, barley, rye, kafir corn, cotton seed, corn in shucks, alfalfa, sweet oats, or any kind of grain. Bagger has a double spout attached to either side of mill. We furnish extra hopper for grinding small grain and ear corn at the same time. Made with double set of grinders or burrs. Have a grinding surface of just double that of most mills of equal size, therefore, do twice as much work. Requires 25% less power. Especially adapted for gasoline engines. We make 7 sizes. Write for Free Catalog.

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Land of Cheap Feed
Pork produced at 3c per pound, and beef in proportion in Eastern North Carolina. Little shelter needed. Nine months grazing with cheap peanuts and cotton seed meal means big profits in stock raising, at low cost. Rich soil. Land \$15 to \$35 per acre. Special attention given settlers. Write me--

W. T. KYZER, AG. AGT. NORFOLK SOUTHERN RAILROAD
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Ear Tags FOR STOCK
Tag your stock--best and cheapest means of identification for Hogs, Sheep and Cattle. Name, address and number stamped on tags. Catalog and samples free on request.

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Cuts two rows. Equals 20 men with saws. Write today for catalog and prices.

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My big new Catalog of Can't-Sag Farm Gates will save you money. Write for it today.

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Gates will last longer. More money. Write for it today.

Can't-Sag Gates Cost Less
than all wood--last 5 times as long--can't sag, drag, warp or twist. Boards double bolted (not nailed) between 3 angle steel uprights. Guaranteed 5 years. More than 500,000 in use. I furnish complete gates ready to hang or just the Gate Steels, hinges, bolts, etc. Everything but bolts. Write for free catalog. A. V. Rowe, Pres. **HOWE MFG. CO., 2915 Adams St., Galesburg, Ill.**




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We are giving Ropp's New Calculator FREE to every farmer or land owner who has not yet sent for a copy. Ropp's Calculator should be in the hands of every farmer. It will instantly give the correct answer to any business problem that can be settled by arithmetic. We will also send you our free illustrated catalog on

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Write for Greatest money saving fence bargain book ever printed. Brown fence is made of Heavy DOUBLE GALVANIZED Wire. Resists rust longest. 150 styles. Also Gates, Steel Posts, Barb Wire. Low Factory Prices, Freight Prepaid. Write for wonderful free fence book and sample to test. The Brown Fence & Wire Co., Dept. 149 C, Cleveland, Ohio



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Farm Commerce.

Michigan's Bean Crop

FARMERS should not be stampeded into marketing their beans hastily by the persistent effort of a certain class of bean speculators and of large consumers, to start a downward movement of prices in this market. Here is a report alleged to have been sent out by a Michigan canning company to the commissioner of weights and measures of Massachusetts, and recently commented upon by a prominent Detroit daily:

"It would appear to us as though there were enough beans this year for everybody," says the Michigan concern's report, "and that these present prices cannot possibly hold after the 'shorts' are taken care of and after the weather settles so that our farmers can thresh their beans.

"This year the most conservative estimate of Michigan beans shows an increase of 25 per cent in acreage over last year, and the beans are threshing out on an average of ten bushels to the acre, as against seven bushels last year. This would make around 7,500,000 bushels, as compared with 4,250,000 bushels last year."

Whether this report was issued with the high motive of imparting useful information to the public or not, is unknown to the writer. But judging from its source and context we are terribly suspicious that the message was written, not to impart information but misinformation, in other words, that it was meant to deceive. The author apparently thought that the buying public could be led to believe that large supplies of this commodity are being held by farmers and that prices will soon decline, while with his most remarkable figures on the size of this year's crop, he no doubt thought to stampede the farmers into selling what surplus they have at present values, or lower. After that these buyers would have control of supplies and could put the price at whatever figure the buying public would stand for.

Every statement in the report is wrong. The fall was an ideal one for harvesting and the threshing was gotten out of the way at least by the usual time. It states that a conservative estimate of the acreage for 1916 is 25 per cent increase over the previous year; whereas, the last federal crop report shows the acreage for Michigan to be 410,000 acres for 1916 and 506,000 acres for 1915. It places the yield at ten bushels per acre and the federal report has it at 6.6 bushels per acre. It concludes that the yield for 1916 is around 7,500,000 bushels, as compared with 4,250,000 bushels for speculators.

VALUE OF MICHIGAN CROPS FOR 1916.

The following table gives in DOLLARS the value of Michigan's important farm crops for the years 1916 and 1915 as estimated by the Bureau of Statistics of the United States Department of Agriculture in the December Crop Report, and compares same with the five-year averages of the same crops for the years 1911-1915 inclusive, the latter figures being taken from the Year Books of the United States Department of Agriculture, except those for the five-year averages for beans, which are from the Michigan crop reports, no federal figures being available:

	1916.	1915.	5-yr. Aver.
Corn	\$43,106,250	\$37,080,000	\$37,125,400
Wheat	22,712,000	20,652,480	14,562,800
Oats	22,625,700	22,491,000	19,943,200
Barley	2,229,500	1,554,960	1,533,800
Rye	6,042,400	4,612,250	4,405,400
Buckwheat	948,750	626,400	713,400
Beans	15,975,300	8,925,100	10,285,572
Potatoes	24,576,000	11,747,200	15,968,400
Hay	43,720,000	41,187,600	39,866,200
Apples	10,857,600	6,993,000	7,765,966
Peaches	2,110,500	1,770,000	1,892,700
	\$194,903,000	\$168,639,990	\$154,062,838

These figures indicate that the value of the crops grown by Michigan farmers in 1916 is \$36,263,010 greater than the value of the same crops in 1915 and \$40,840,172 greater than the average value for the five years from 1911 to 1915 inclusive.

The increase in the value of this year's crops is due entirely to the higher prices prevailing, and the big figures emphasize strongly the need of attention to our marketing system to the end that producers may get a larger part of the consumers' dollar.

MARKETING OF CUCUMBERS.

Inquiry has been made by the Markets Office, into cucumber growing in Michigan. For the past five years the supply has not kept pace with the demand. The conditions under which cucumbers are grown are of interest. Usually small areas and the prices paid make it profitable in the main only when the family labor at little or no cash outlay can be utilized. A commercial crop on a large scale would compel standard wages, which the average return would not permit. The diseases of cucumbers, which owing to the small scale of growing, does not permit of exclusive equipment for prevention, has been a serious menace to the industry.

Additional advices from those interested in the cucumber industry is sought. Extracts from a letter from an extensive distributor of pickles throws much light on the situation.

About 100,000 acres are planted to cucumbers in the central west, Michigan, Indiana and Wisconsin being the largest producers. The pickles taken in from the growers at the different salting stations are classified as: 'Vat-runs,' measuring two inches to three and a half inches, and 'vat-runs,' measuring two inches to four inches in length, and the prices paid growers varies from 75 cents, (\$.75), to \$1.20 per bushel of fifty pounds.

The next size is called large pickles, measuring three and a half to four inches, and five and a half inches. This size is usually one-half the price of the vat-run size.

For the last five years the crop has not been sufficiently large to supply the demand, and prices to growers have steadily advanced. As the crop must be picked by hand, the higher cost for labor will have its effect on prices the coming season.

JAS. N. McBRIDE, Director.

CO-OPERATIVE AGRICULTURE IN IRELAND.

(Continued from page 10).
formed. I am sure the oldest inhabitant there will agree that more changes for the better for farmers have taken place since the co-operative society was started than he could remember in all his previous life. The reign of the gombeen man is over. The farmers control their own buying and selling. Their organization markets for them their eggs and poultry. It procures seeds, fertilizers and domestic requirements. It turns the members' pigs into bacon. They have a village hall and an allied woman's organization. They sell the products of the women's industry. They have a co-operative band, social gatherings and concerts. They have gone southward to Ardara with their propaganda and eastward towards Falcarragh, and in half a dozen years in all that district, previously without organization, there will be well organized farmers' guilds, concentrating within themselves all the trades of their districts, having meeting places where the opinion of the members can be taken; having a machinery committees and executive officers to carry out whatever may be decided upon, and having funds or profits, the joint property of the community, which can be drawn upon to finance their undertakings. You see what a tremendous advantage it is to farmers in a district to have such organizations; what a lever they can pull and control. You will understand the difference between a rural population and a rural community, between a people loosely knit together by the vagaries of a common latitude and longitude, and people who are closely knit together in an association and who form a true social organization, a true rural community. It is the business of the rural reformer to create the rural community. It is the antecedent to the creation of a rural civilization."

TRY HOG-TONE

60 Days FREE Treatment FOR ALL YOUR HOGS

I F I don't make your hogs make you more money—produce more pounds of pork for you from the same amount of feed—I don't want your money! I am giving you the same opportunity to prove this that I gave Jno. W. Crane, hog raiser near South Whitley, Indiana. He writes: "I selected four pigs out of my bunch—three were runts. I weighed them and they averaged 85 pounds. I fed them Hog-Tone for four weeks. Then sold them eight weeks from time I weighed them and they averaged 221 pounds per hog."

Mr. W. O. Gandy,
President
Avalon Farms
Company

You Can't Pass This By!

icine on any hogs no matter how healthy they appear to be, and prove it to your own satisfaction.

If it doesn't do it I don't ask you to pay a cent.
I know I am safe in making this guarantee. I know what Hog-Tone has done and is doing for the herds of other hog raisers. I also know that the market price of hogs is going higher every day—and is bound to go higher from now on. There is a serious hog-shortage. Especially a shortage of high-grade porkers—hogs absolutely free from worms—big hogs with sound, clean flesh! Worms are killing off the hogs! "More hogs may be lost from worms this year than from hog cholera, and many cases of apparent cholera are only worms."

Avalon Farms Hog-Tone is the only Veterinary Remedy ever sold with a guarantee to produce a definite percentage of profit. I guarantee it to produce 400% profit on the cost of the medicine, and prove it to your own satisfaction.

says Dr. J. T. Dinwoodie, Veterinary Specialist of the South Dakota State College. "Nearly every hog is infested with worms," declares the U. S. Dept. of Agriculture. The malignant Thorn Head Worms—Stomach Worms—Liver Worms—Lung and Bronchial Worms weaken the Hogs—affect every sow's litter—make million of hogs easy victims of cholera, scours, thumps, rheumatism, enteritis, gastritis—rob surviving hogs of nourishment their food should bring, cut down their weight and quality at marketing time. Grasp this opportunity to try

AVALON FARMS HOG-TONE

The Liquid Worm Killer and Hog Conditioner To Treat All Your Hogs for 60 Days—FREE—At My Risk!

Avalon Farms Hog-Tone Costs Very Little

I will ship you one \$1.00 bottle of Hog-Tone for each eight hogs in your herd—the day the coupon below, filled in, reaches this office. That will be sufficient to treat your hogs 60 days or more, according to size. This will mean just 12½ cents per hog for all the treatment—and that treatment is guaranteed by me to give you a 400 per cent profit over and above the cost of the Hog-Tone treatment, at marketing time. This is the same opportunity that these men grasped—and made money by doing so.

M. S. McFadden, Poland China Editor of Swine World (who feeds about 1000 hogs annually near Flossmoor, Illinois) advises: "I received Hog-Tone and gave it a test on five pigs. Our farm manager says that it is the best worm-expeller he ever used. The pigs fed on Hog-Tone have made 25 per cent larger gains than those not fed on Hog-Tone."

John Heiman, R. F. D. No. 6, Decatur, Ind., states: "I fed the Hog-Tone to a lot of hogs that had the scours. Some of my pigs had their backs turned up like a rainbow. In less than two weeks I could not get to the trough to feed them. I do not know exactly what the gain on this lot of hogs was, but I could see a great change in them."

Avalon Farms Hog-Tone is a highly concentrated liquid medicine FOR HOGS ONLY. It contains highly important medical ingredients which are liquids and which cannot be combined in Medicated Salts, Stock Foods or Condition Powders of any kind.

Grasp This Opportunity—Mail the Coupon to Me Today!

AVALON FARMS COMPANY, W. O. GANDY, President 573 Rand McNally Bldg., Chicago



Avalon Farms Hog-Tone is safe. It is very easy to treat your hogs with Avalon Farms Hog-Tone. IT IS EASILY MIXED WITH ANY KIND OF SLOPS, WITH THE DRINKING WATER OR DAMPENED FEED. It is only given every third day for the first six weeks and after that only once a week. 100 per cent strong.

Thoroughly proved on Avalon Farms, near Fort Wayne, Indiana. Cleans out every kind of worms that infest hogs. By doing so, it gives protection to your hogs from easily contracting Cholera, Rheumatism, Scours, Thumps, caused by worms and indigestion. Enteritis, Indigestion and other diseases that destroy literally millions of hogs. A simply wonderful tonic and conditioner—gives hogs voracious appetites, aids digestion, helps them thrive, grow and put on fast increases of flesh. Makes hogs eager for their feed.

Avalon Farms Hog-Tone is the best known tonic for sows during gestation. Its use insures strong healthy pigs. It is the reliable worm expeller which is safe to use at this time.

Don't Send a Penny! Just Mail Me

Simply tell me how many head of hogs you have—write down your name and address—FREE Coupon and mail to me. I will immediately ship you enough Avalon Farms Hog-Tone to treat your hogs for 60 days! You simply pay transportation charges. Treat your hogs according to directions. If at the end of the treatment you are not completely satisfied—simply return the labels to me and you don't owe me a cent.

W. O. Gandy,
President,
Avalon
Farms Co.,
573 Rand McNally Bldg.,
Chicago, Ill.

SEND NO MONEY—TAKE NO RISK

Name _____

P. O. _____

R. R. No. _____ State _____

Ship to _____

Name and address of my dealer _____

SHORTHORNS FOR SALE

8 Bulls, also females. W. B. McQuillan, Howell, Mich.

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

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

6 Short horns for sale. Four 3 year olds rebred, 2 June calves. Three registered and 3 pure bred, but not registered. Dr. R. G. Gordanier, Grand Ledge, Mich.

HEREFORDS

Both sexes and all ages for sale, our herd comprises about 100 head representing the blood of such sires as Prime Lad 9th, Perfection Fairfax, Bonnie Brae 3d and Dale. Write us your wants.

ALLEN BROS., PAW PAW, MICH.

50 Herefords BOTH SEXES ALL AGES EARL C. McCARTY, Bad Axe, Michigan

Cattle For Sale

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

GRADE bull of good breeding by a direct descendant of the King of the Pontiac's. His dam gave 25.06 butter at 4 years. Olius Berkompas, Box 55, Rudyard, Mich.

HOGS.

Durocs and Victorias

Heavy bone, lengthy Spring Boars and Gilts from prize winners sired by one of the best Sons of the Great Defender and other noted strains. M. T. STORY, Lowell, Mich.

FOR SALE

Young Berkshire boars, registered, ready for service; Dam is a great granddaughter of the World's Champion Premier Longfellow \$8900. J. T. Grimason, R. 3, Clare, Mich.

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

Berkshires, Boars, serviceable age, best blood lines. Registered. ELMHURST STOCK FARM, Almont, Mich.

Berkshires: Mature sows, yearling and spring gilts bred for spring farrowing at 12c per pound. Shipped on approval. B. B. Reavey, Akron, Mich.

Duroc Jersey

We still have 7 choice boars for sale. Sired by our Michigan Masterpiece No. 2855. Send for pedigree. You will be more than pleased. Prices Reasonable. THE JENNING'S FARMS, R. F. D. 1, Bailey, Mich.

FOR SALE

10 Reg. Shropshire vrl. Ewes that are first class in every respect. Price \$25 per head. Bred for Apr. lambs. M. A. BRAY ESTATE, Okemos, (Ingham Co.) Mich.

J. W. KEENEY, Erie, Mich. Gilts bred for April farrow. D. M. & T. local from Monroe or Toledo, Keeney Stop.

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

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

Duroc Jerseys Big Type Boars with breeding and individuality that is hard to beat, bred from prize winning stock, prices reasonable, satisfaction guaranteed. F. J. DRODT, R. 1, Monroe, Michigan

DUROO Jerseys. Spring boars from the most noted sires of the breed. Jo Orion II, Perfect Top Col., Oakland Ohio. Chief, Principle IV & Model Pal. Newton Barnhart, St. Johns, Mich.

Duroc Jerseys 30 bred gilts for sale, priced to sell. Haptinez, Mich.

Carey U. Edmonds.

(Additional Stock Ads on Page 19).

Markets.

GRAINS AND SEEDS.

January 2, 1916.

Wheat.—The year closed with wheat prices going up. While it is difficult to ship wheat out of the country and there is possibility of a general railroad strike, the statistical situation of the grain is strong and holds values up. One year ago No. 2 red wheat was quoted at \$1.23½ per bushel. Last week's quotations at Detroit were:

	No. 2	No. 1	
	Red.	White.	May.
Wednesday	1.80	1.75	1.84
Thursday	1.80	1.75	1.84
Friday	1.80	1.75	1.84
Saturday	1.83½	1.78½	1.87½
Monday			
Tuesday	1.89	1.84	1.93

Chicago.—May wheat \$1.80½; July \$1.46½; Sept. \$1.36¼.

Corn.—Corn jumped over the dollar mark on the last days of 1916. The market is firm. A year ago No. 3 corn was quoted locally at 72½c per bushel. Prices for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	99½	1.01
Thursday	99½	1.01
Friday	1.00	1.01½
Saturday	1.00½	1.02
Monday		
Tuesday	1.03	1.05½

Chicago.—May corn 95c; July 94c.

Oats.—Higher prices prevail with a good general demand in evidence. A year ago standard oats were selling at 46c per bushel. Quotations for the week are:

	Standard.	No. 3
		White.
Wednesday	56½	56
Thursday	56½	56
Friday	57	56½
Saturday	57	56½
Monday		
Tuesday	59½	59

Chicago.—May oats 55½c; July 52½c per bushel.

Rye.—Values are down a cent with cash No. 2 at \$1.40 per bushel.

Beans.—Prices are 40c higher at Detroit. Trading is small. Immediate shipment \$6.15. At Chicago pea beans are steady at \$6.40@6.50 per bushel. Red kidneys \$6.90@7.10.

Peas.—Steady at \$2.75@3 in Chicago.

DAIRY AND POULTRY PRODUCTS.

Butter.—The market is firm with supply light. Creamery extras 38c; do. firsts 37c; packing stock 27c.

Eggs.—Market firm with prices ½c higher. Price, based on sales, is 39c.

Chicago.—The demand is good for all grades. Best grades are ½c higher. Extra creameries are quoted at 39c; extra firsts 37@38c; packing stock 28½c.

Poultry.—The market continues firm with prices higher. No. 1 spring chickens 20c; No. 2 do 18c; No. 1 hens 18c; No. 2 do 16c; small do 14c; ducks 21c; geese 19c; turkeys 28@30c.

Chicago.—Market was fairly steady generally lower. Quotations: Turkeys 12@23c; fowls 15c; spring chickens 19c; ducks 17@18c; geese 14@15½c.

Eggs.—The demand is good with supplies light. Prices unchanged. Firsts 39c; current receipts 38c.

Chicago.—Market continues steady, with fresh eggs in demand. Fresh firsts are quoted at 40@41c; ordinary firsts 35@36c; miscellaneous lots, cases included 32@40c.

FRUITS AND VEGETABLES.

Apples.—Market is firm with prices unchanged. Baldwin, Spy and King are quoted at \$5.50@5.75 for the best. At Chicago there is no change in prices, but the market is easy and quiet. No. 1 stock sells at \$2.50@6 per bbl; No. 2 at \$1.75@2.25.

Potatoes.—Demand fair, supply ample, prices unchanged. The quotations at Detroit in earlots are \$1.50@1.55 for bulk and \$1.60@1.65 in sacks. At Chicago the market is quiet but firm. Prices are 10@15c higher. Michigan white potatoes are quoted at \$1.50@1.75 per bu. At Greenville potatoes are selling at \$1.45.

LIVE STOCK MARKETS.

Buffalo.

January 1, 1917.

Receipts here today as follows: Cattle 100 cars; hogs 75 d. d.; sheep 30 d. d.; calves 800 head.

With 100 cars of cattle here today the demand was very strong, and the bulk of the medium cattle sold a quarter higher.

We had a short run of hogs today, demand quite good and market 10@15c higher. About everything sold around

\$11, with pigs and lights \$10@10.25; roughs \$9.50@9.75; stags \$7.50@8.50.

With a light run of lambs today our market opened active and prices 10c higher than the close of last week. We look for shade lower prices balance of the week with moderate receipts.

We quote: Best lambs \$14.10@14.25; cull to common \$9@13.75; yearlings \$8@12; bucks \$5.50@5.75; ewes \$8.25@9; cull sheep \$4.50@7; wethers \$9.50@10; top veals \$14.75@15; heavy \$7@9; common and light \$8@12.50; grassers \$5.25@6.

Chicago.

January 1, 1917.

Cattle. Hogs. Sheep.
Last week.....48,801 196,615 53,323
Same wk 1916..41,532 158,516 60,079

Cattle were in greatly reduced supply last week, and prices averaged considerably higher. Beef steers sold largely at \$8.25@10.50, with but a small percentage selling as high as \$11, while choice to extra steers found a ready sale at \$11@11.85. Steers classed as good went at \$9.85 and upward, while a medium grade of steers sold at \$8.75 and upward, with sales made all the way down to \$8.10 and over for fair light-weight killers, while common lots went at \$6.25@8 and a few inferior little steers at \$5.50 and over. The best yearling steers sold at \$10@11. Butcher stuff was active on the basis of \$5.85@8.50 for cows and \$5.50@10.50 for heifers, while cutters sold at \$5.20@5.80, canners at \$4.25@5.15 and bulls at \$5@8. There was a good demand for calves, with good to prime light vealers selling at \$11@12.75 and sales all the way down to \$5@8 for the heavier lots. The stocker and feeder trade was variable, being good only at times, with sales of stockers at \$5.25@7.60 and feeders at \$6.75@8.25. Prospects are bright for the future, so far as beef cattle of a desirable kind are concerned, and even the common and medium descriptions are not likely to go at a lower basis. Desirable cattle advanced 10@25c last week.

Hogs have been marketed with extraordinary liberality week after week for a long period but there was a great falling off in offerings during last week. There was a sharp decline in prices, with sales of hogs at \$9.30@10.50, while pigs brought \$7.50@9.25. Heavy shipping hogs brought \$10.40@10.50 and light shippers \$10.05@10.20. The heavy packers brought \$10.10@10.35. A week earlier top hogs brought \$10.60.

Greatly reduced receipts last week of everything in the sheep and lamb line, combined with a large general demand, put prices on new high levels for fat offerings. Lambs sold at \$10@13.60, feeding lambs at \$9.50@12.50, with shearers the highest; yearlings at \$9@12.25; wethers at \$9@10.25; ewes at \$5.50@9.85; bucks at \$6.75@8. Prices closed largely 10@25c higher than a week earlier.

JANUARY FARMERS' INSTITUTES.

County Institutes.

Alpena Co., Long Rapids, Jan. 5-6; Alcona Co., Harrisville, Jan. 8-9; Kalkaska Co., Kalkaska, Jan. 8-9-10; Iosco Co., Whittemore, Jan. 10-11; Gd. Traverse Co., Traverse City, Jan. 10-11-12; Benzie Co., Benzonia, Jan. 11-12; Gladwin Co., Gladwin, Jan. 11-12; Arenac Co., Standish, Jan. 12-13; Leelanau Co., Sutton's Bay, Jan. 12-13; Antrim Co., Elk Rapids, Jan. 15-16; Charlevoix Co., Deer Lake, Jan. 17-18; Manistee Co., Bear Lake, Jan. 17-18-19; Eaton Co., Charlotte, Jan. 17-18; Ingham Co., Mason, Jan. 19-20; Mason Co., Ludington, Jan. 19-20.

One-day Institutes.

Charlevoix Co., Boyne Falls, Jan. 6; South Arm, Jan. 8.
Sanilac Co., Marlette, Jan. 2; Shabbona, Jan. 3; Argyle, Jan. 4; Sandusky, Jan. 5; Carsonville, Jan. 6; Croswell, Jan. 8; Lexington, Jan. 9.

Van Buren Co., Bangor, Jan. 9; Lawrence, Jan. 10; Keeler, Jan. 11; Glen Dale, Jan. 12.

Midland Co., Laporte, Jan. 3; Smith's Crossing, Jan. 4; Poseyville, Jan. 5; Crane, Jan. 6; Homer, Jan. 8; Midland, Jan. 9; Hope, Jan. 10; Averill, Jan. 11; Coleman, Jan. 12.

Kalamazoo Co., Fulton, Jan. 2; Kalamazoo, Jan. 3; Alamo, Jan. 4; Rose, Jan. 5; Climax, Jan. 10; Schoolcraft, Jan. 11; Vicksburg, Jan. 12; Comstock, Jan. 13; Portage, Jan. 16.

Branch Co., Ovid Twp., Jan. 6; Quincy, Jan. 15; Gerard, Jan. 16; Algansee, Jan. 17; Bronson, Jan. 18.

Grand Traverse Co., Grant Center, Jan. 4; Kingsley, Jan. 5; Williamsburg, Jan. 6.

Lenawee Co., Hudson Center, Jan. 8; Rome, Jan. 9; Adrian, Jan. 10; Fruit Ridge, Jan. 11; Blissfield, Jan. 12; Cadmus, Jan. 13; Rollin, Jan. 15; Onsted, Jan. 16; Tipton, Jan. 17; Tecumseh, Jan. 18; Macon, Jan. 19; Hollo way, Jan. 20.

Cass Co., Jones, Jan. 8; Marcellus, Jan. 9-10; La Grange, Jan. 11; Adamsville, Jan. 12; Union, Jan. 13.

Clare Co., Farwell, Jan. 9; Harrison, Jan. 10.

Genesee Co., Davison, Jan. 8; Atlas, Jan. 9; Otisville, Jan. 10; Genesee, Jan. 11; Montrose, Jan. 12; Flushing, Jan. 13.

THE LIVE STOCK MEETING.

(Continued from page 6).

Michigan Shropshire Sheep Breeders' Association.

President, H. E. Powell, Ionia; secretary, W. H. Schantz, Hastings.

Michigan Hampshire Sheep Breeders' Association.

President, John Hull, Dimondale; secretary, Comfort A. Tyler, Detroit.

Thursday morning, January 18, at 8:30 a. m., a meeting will be held in Room 403 for the purpose of organizing a Michigan Live Stock Exhibitors' Association.



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from destruction by fire and from impure, disease-breeding water; also from ice cold winter water which chills them, and in cows reduces the flow of milk. Get a modern water system. It pays big dividends on the investment. The

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Farmer Wanted Good man and wife to work farm. Must be experienced and competent. We pay by the month and furnish living. References required. W. H. Campbell, Alpena, Mich.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.

December 28, 1916.

Cattle.

Receipts 1024. There was a light run in all departments at the local yards this week and better time was made on all roads.

In the cattle division the quality was generally common and the market on all grades steady with last week, due largely to light receipts. A few countrymen were on hand after stockers and feeders and had no trouble getting what they needed. Milch cows of quality sold well but common grades were dull most of them selling to canner buyers. The close was steady as follows: Best heavy steers \$8; best heavy weight butcher steers \$7@7.75; mixed steers and heifers \$7@7.50; handy light butchers \$6@6.75; light butchers \$5@6; best cows \$6.50@7; butcher cows \$5.50@6; common cows \$4.75@5; canners \$4@4.75; best heavy bulls \$6.50@7; bologna bulls \$5.50@6; stock bulls \$4.50@5; feeders \$6.50@7; stockers \$5@6.75; milkers and springers \$4@7.50.

Bishop, B. & H. sold Bray 3 cows av 970 at \$4.50, 3 do av 970 at \$4.75, 2 do av 1135 at \$6, 2 do av 900 at \$4, 10 do av 873 at \$4.75, 4 butchers av 880 at \$5.50; to Mich. B. Co. 7 do av 780 at \$5.75, 1 bull wgh 1150 at \$5.75, 1 do wgh 1610 at \$5.50, 10 steers av 962 at \$7.75, 8 do av 936 at \$6.25, 1 bull wgh 1600 at \$6.25, 1 do wgh 1220 at \$5.75, 2 cows av 940 at \$6.50, 2 do av 950 at \$5, 1 do wgh 900 at \$6.50, 33 steers av 870 at \$7, 3 butchers av 707 at \$5.25, 1 steer wgh 950 at \$7.50, 2 do av 990 at \$8, 1 heifer wgh 730 at \$5.75; to Resnick 10 cows av 972 at \$5.50; to Shaparo 4 steers av 920 at \$7, 2 cows av 1205 at \$6, 1 bull wgh 1660 at \$6.50; to Hirschleman 17 butchers av 823 at \$6.85; to Bray 3 cows av 900 at \$4.75, 3 do av 877 at \$4.75, 1 do wgh 1070 at \$8, 8 do av 840 at \$4.75; to Breitenbeck 9 butchers av 835 at \$5.75, 5 cows av 1074 at \$5.75, 3 do av 1053 at \$5.40, 2 steers av 925 at \$7.10; to Mich. B. Co. 35 butchers av 680 at \$5.10, 20 do av 662 at \$5.35; to Ratner 1 bull wgh 1990 at \$6.50; to Brighton D. M. Co. 15 cows av 1013 at \$5.75, 2 do av 1160 at \$6.

Sandel, S. B. & G. sold Brewer 24 stockers av 600 at \$4.75; to Stock 10 do av 643 at \$5.10, 3 do av 720 at \$4.75; to Moaron 3 do av 610 at \$5, 1 cow wgh 850 at \$5; to Walk 6 cows av 980 at \$5.50; to Mich. B. Co. 1 do wgh 1040 at \$4.50, 1 do wgh 1040 at \$6, 3 steers av 837 at \$6.35, 25 butchers av 780 at \$5.90, 19 do av 730 at \$5.25, 3 do av 570 at \$5.25.

Ford sold Stevenson 75 steers av 989 at \$7, 5 cows av 1200 at \$6.50.

Johnson sold Bray 6 cows av 1021 at \$6.

Erwin, S. & J. sold Brighton D. M. Co. 7 cows av 1030 at \$5.45, 1 steer wgh 1320 at \$7.25, 3 cows av 1010 at \$5.75, 1 bull wgh 1430 at \$6.25, 4 steers av 1347 at \$7.60; to Bray 3 cows av 770 at \$4.75; to Mich. B. Co. 1 steer wgh 670 at \$6; to Hammond, S. & Co. 5 cows av 1036 at \$4.75; to Sullivan P. Co. 4 butchers av 825 at \$6.35.

Veal Calves.

Receipts 494. The veal calf trade was active at strong last week's prices. A few extra good brought \$13.50, but the bulk of sales for good were at \$12@13; mediums \$10@11; heavy \$6@7.

Erwin, S. & J. sold Hammond, S. & Co. 11 av 157 at \$13, 1 wgh 130 at \$9, 3 av 195 at \$12.50.

Sandel, S. B. & G. sold Thompson 3 av 140 at \$11, 2 av 125 at \$12.50, 4 av 140 at \$12.25.

Sheep and Lambs.

Receipts 2977. The sheep and lamb trade was active at last week's prices on all grades, top lambs bringing \$13.25, the Nagle Packing Co. taking the bulk of the receipts. The close was strong as follows: Best lambs \$13.05@13.25; fair lambs \$12@12.75; light to common lambs \$9@10; yearlings \$9@11; fair to good sheep \$8@8.75; culls and common \$5@6.

Sandel, S. B. & G. sold Thompson 90 lambs av 60 at \$11.50, 11 do av 70 at \$11.75.

Haley & M. sold Nagle P. Co. 21 sheep av 105 at \$7.75, 50 do av 70 at \$7.50, 156 lambs av 75 at \$12.50.

Hogs.

Receipts 3882. In the hog department the trade was active and generally 5c higher than on Wednesday and 25@35c higher than last week, as follows: Mixed hogs \$10@10.35; pigs \$9@9.25.



Horse Distemper

Your horse doesn't eat, has a chill followed by fever, and very likely a mucous discharge from the nostrils—that's Distemper.

Dr. DAVID ROBERTS' FEVER PASTE

gives quick and sure relief. You have a regular catarrhal condition of the throat and breathing organs to deal with. Fever Paste heals the sore and irritated mucous membranes and destroys the germs that cause distemper, catarrhal fever and colds. Distemper comes often. Go to your drug store and get ready for it by buying the Prescription that has proven effective in thousands of cases.

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Gall Balm, Heave Powder, Absorbent Antiseptic Poultice, Breeding Tonic and Stokvigor are great stable preparations.

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BUY YOUR FEED IN CAR LOTS We can save you money. Write for delivered prices **RANDOLPH, HALL & YOUNG.** Owosso, Mich.

HOGS

BOARS are all sold. Durocs, a few April gilts, will be bred for Apr. farrow, weight about 175. Price \$25 while they last. H. G. Keeler, Cassopolis, Michigan.

Duroc Boars. A fine lot of spring boars bred right and priced right. W. C. TAYLOR, Milan, Michigan.

Duroc Jersey Spring boars with the best of breeding and individuality; also a few choice spring gilts. E. D. Heydenberg, Wayland, Mich.

Duroc Jerseys A nice bunch of gilts, bred or open, some good serviceable boars. Also fall pigs. Wm. W. Kennedy, Grass Lake, Michigan.

Duroc Jerseys fall pigs, either sex sired by Brookwater Cherry King No. 4785, \$20 each Reg. & Del. anywhere in State. Choice stock. J. Robert Hicks, St. Johns, Mich.

Duroc Sows, Spring gilts, Aug. Boar Pigs, Sept. Pigs either sex. Percheron Stud Colt six months old. E. J. Aldrich, Tekonsha, Mich.

Duroc Sows 26 beauties bred to grand big boars at Auction Feb. 12th. Some splendid fall boars. Orlo L. Dobson, Quincy, Michigan.

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: 20 gilts due to farrow for part of April. Will be sold at knock-down price. Have also fall pigs. Write me your wants. Satisfaction guaranteed. A. J. GORDEN, R. No. 3, Dorr, Mich.



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 country 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, R. F. D. 10, Portland, Michigan

CHESTER WHITES Gilts bred to farrow in Feb. or March. Fall pigs, either sex. F. W. ALEXANDER, Vassar, Mich.

Parhams' Pedigree Stock Farm offers: Reg. C.W. Boars, Bred Gilts, Fall Pigs, Reg. A. R. O. Holstein Cows, Male Calves. Show Bull ready for service, price \$25. R. B. Parham, Bronson, Mich.

O. I. C's. 4 last fall boars big growthy ones, also last spring pigs either sex, not akin. Farm 1/4 mile West of depot. Otto B. Schulze, Nashville, Michigan

O. I. C. and Chester White Swine, all ages. A few either sex, sired by Crandells 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. Stock all Sold JULIAN P. CLAXTON, Swartz Creek, Mich.

O. I. C. Serviceable Boar's, Gilts bred for reasonable. H. W. MANN, Dansville, Mich.

O. I. C. & CHESTER WHITE SWINE Strictly big type, 25 gilts, bred for Mar. and Apr. farrow, bred to Big Wonder 4th, and Prince Jumbo. Both boars are sired by Champion's. These gilts will be sold at Farmer's prices. Three boars ready for service, also fall pigs that will be sold cheap. Can furnish in pairs not akin. Will ship C. O. D. Newman's Stock Farm, Marlette, Mich., R. 1.

O. I. C. Choice Spring gilts not bred and spring boars. Out of Prize winning stock. Write for low prices. A. V. HATT, Grass Lake, Mich.

O. I. C. Serviceable boars. Yearling sows and fall pigs. 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. 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. or Chester White Swine, both sex, not of kin. Write for catalog and prices. E. B. MILETT, Fowlerville, Michigan.

O. I. C's. Have only a few boars of May, June and Sep. farrow. ROCKFORD, MICH.

O. I. C's. 25 choice Gilts bred to Son of Schoolmaster to farrow in Mar., also fall pigs. Clover Leaf Stock Farm, Monroe, Mich., R. 1.

Big Type Poland Chinas Spring boars, at reasonable prices. Order soon to save. express. A. A. WOOD & SON, Saline, Michigan.

LARGE Type P. C. largest in Mich. Boars all sold. Have 30 of the best big stretchy bred gilts ever raised. Sired by & bred to the largest boars of the breed. From massive dams & large litters. Come & see & be convinced. Expenses paid if not as represented. Free livery to visitors. W. E. Livingston, Parma, Mich.

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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.

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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.

Big Type Poland China bred for March and April farrow. July boars. Satisfaction guaranteed. G. W. Holton, Kalamazoo, Mich. R. 11.

BIG TYPE Poland Chinas. Boars all sold except 4 extra good boars of May farrow sired by Big Type King 91609 & Tesemeyer & Wonder Jr. 93339. To close them out in the next 10 days we offer them at half price. W. Bre waker & Sons, Elsie, Mich.

WALNUT Alley Herd, Big type Poland Chinas headed by Hadley Desmains No. 210925 and Smothe Jumbo Jr. No. 249887. Sows represent blood of two A. wonders. Pigs of either sex ready. A. D. Gregory, Ionia, Mich.

Big Boned Poland China boars shipped C. O. D. call or write for photo, weights, pedigree and price. E. R. Leonard, St. Louis, Michigan.

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Large type P. C. Sows and gilts all retained for my Feb. Sale. A few choice Spring boars ready to ship. W. J. HAGELSHAW, Augusta, Michigan.

BIG Type Poland Chinas. Choice April boars, fall pigs in pairs. Chance to get started for a little money. Big Minora Cockerels, Satisfaction guaranteed. R. W. Mills, Saline, Mich.

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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.

For Big Type Poland China Gilts bred for April farrow. Write or call on Armstrong Bros., R. 3, Fowlerville, Mich.

LARGE STRAIN P. C. One extra good fall yearling and a few choice spring boars. A nice lot of gilts being bred for April farrow. H. O. SWARTZ, SCHOOLCRAFT, MICH.

10 Yorkshire Gilts, 2 Boars one mature; Red Polled cattle. E. S. CARR, Homer, Michigan.

Hampshire Swine. Bred Sows and gilts for August and September farrows. Spring pigs, sex both. FLOYD MYERS, R. No. 9, Lecatur, Ind.

HAMPSHIRE Boars, sows, gilts and pigs. Choice stock. A. E. BACON & SON, Sheridan, Michigan.

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Halladays' Hampshire Swine Both sexes, all ages. Prices reasonable. O. H. Halladay & Son, Clinton, Mich.

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Accessories to Foods

By FLOYD W. ROBISON

AMONG the very important accessories to the diet are a great variety of spices which are considered almost absolute necessities for our daily menu. Spices occupy a very peculiar role in dietetics. Probably in no single instance are they employed because of the intrinsic food properties which they contribute, but unconsciously they are demanded in the diet and aid the nutrition of man in a purely indirect way. Aside from being demanded, we might say physiologically, in the diet they are a type of substances toward which the human body has erected an exceedingly low barrier of tolerance. Practically all of the spices contain ingredients which are valued, and valued highly, when present to a limited degree in the diet. In many instances the active principle which in a limited degree we value in the diet develops a considerable toxicity itself when given in quantities greatly in excess of the amount usually employed. This presents a very peculiar phase in nutrition and yet is a condition which prevails regarding a good many products which in general are considered rather advantageous articles for human use.

Cloves.

Cloves are the dried flowers of an evergreen tree, which averages perhaps 25 to 30 feet in height, and which is cultivated extensively in Ceylon, India, the West Indies, Brazil and certain other tropical countries. Nearly everyone is familiar with the whole clove, which is a hard, cylindrical, calyx tube, and when dried and ready for market contains a very pungent, aromatic oil which in concentrated form is very disagreeable and difficult to take, but when given in diffused condition throughout food the effect is very pleasant indeed.

The usual adulterants of cloves are the addition of other spices of cheaper commercial value, the use of exhausted clove stems, and sometimes cereal products such as starches. A megascopic examination is sufficient to satisfy anyone as to the purity of the whole spices. Consequently whole cloves are very seldom adulterated, but when ground, sophistication is possible, and in years past was very frequently resorted to.

Allspice.

The allspice is in origin very similar to the clove. It also is the product of an evergreen tree, belonging to the same order as the clove, but whereas the clove is the dried product of the flower the allspice is the dried fruit, and comes in the form of a grayish brown berry, round and hard, perhaps from one-fourth to three-eighths of an inch in diameter. Allspice is sometimes known as pimento and gets its name, allspice, undoubtedly because its aroma and flavor resembles that of a combination of other spices, particularly cloves and cinnamon. Like cloves, allspice is rarely adulterated except when ground, and then the same type of adulterants are found that are found in the cloves, that is starches, exhausted berries, pepper shells, coconut shells, olive stones, etc.

Cinnamon and Cassia.

Cinnamon and cassia are very similar products, very frequently intermixed with each other and frequently sold one for the other, or rather, cassia is frequently sold for cinnamon. Cinnamon is the more expensive article and usually contains an oil of quite distinct aroma. The relation of cinnamon and cassia is very much analogous to that existing between vanilla and the extract of the tonka bean; cassia being compared to the tonka and the cinnamon being compared to the vanilla. The flavor of the tonka, like that of cassia, is considered much stronger than that of vanilla, whereas the flavor of cinnamon, like that of true vanilla,

is richer and more delicate in its aromatic properties. These products, cinnamon and cassia, are really the bark of a tree and are found chiefly in China, India, and that section of the world. The cheaper grades of cassia contain frequently in addition, ground cassia buds. As with other spices the adulteration of these products consist almost entirely in the ground specimens. The whole bark is so characteristic that rarely is it adulterated.

-Pepper.

Perhaps of all the spices usually valued so highly because of the frequency of their use are the peppers. Pepper is produced from the berry of the pepper plant. The white pepper and the black pepper are produced from the same plant. Until very recently it was considered that white pepper and black pepper could be produced from the same berry, that is—black pepper representing the whole ground berry, whereas the white pepper represented the berry minus the outside bark covering. The Department of Agriculture has been endeavoring to establish a difference in this respect, claiming that the white pepper berry should be a berry which has been left upon the tree until it is ripe and undergoes natural decortication. It appears that if the berry is allowed to remain on the tree until fully ripe most of the shell which covers the berry will split and drop off, leaving the white berry underneath exposed and practically clean. It is claimed that this should be the source of all genuine white pepper. Manufacturers have been in the habit of buying the pepper whole and decortigating it themselves, but this pepper usually is an immature berry and the pepper shell does not separate except by the manufacturing process from the immature berry, much the same as flour may be separated from the wheat.

Pepper is a delightful product when used in the moderation which it correctly demands. There are several varieties of peppers on the market, a prominent one being cayenne pepper, or red pepper. Cayenne pepper of commerce is indigenous to the American tropical countries and is grown to some extent even in our climate. They are very pungent and consequently in very great demand for certain condimental purposes.

Ginger.

Ginger is a root and is grown quite extensively in various parts of the world, even America producing considerable quantities of ginger. Ground ginger has been frequently adulterated with certain of the cereal starches, such as corn, rice, and a great variety of the different valueless adulterants.

Mustard.

Mustard is the ground seed and finds very extensive use in sauces and condimental dishes for the table. Medicinally both ginger and mustard are used to a considerable extent.

The Value of Spices and Condiments.

With the other spices mentioned, however, they are not to be considered as foods in the respect that we would expect them to contribute valuable food properties. With nutmeg, mace, horseradish, and the many other spices used in greater or less degree, they are valued chiefly because of the fact that they lend zest and appetizing features to the diet, calling forth a liberal supply of digestive fluids and thus creating a favorable environment which promotes in the human body desirable conditions for the digestion and absorption of food.

This is the purpose of practically all of the accessories to the diet which we have mentioned. They do contribute food value and as we stated with regard to coffee, tea, cocoa, etc., we consider them foods, but at the same time their valuation in the diet is vastly out of proportion to the intrinsic food properties which they contribute.

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Grange.

MEETING OF STATE GRANGE.

(Continued from last week.)

In its report the committee on co-operation recommended that Pomona Granges appoint county market directors to work in co-operation with the State Market Director, the expense to be borne equally by the State and Pomona Granges. The object of this plan is to assist the State Market Director in securing an accurate estimate of the crops and to assist in spreading the information he has obtained from his investigations. This recommendation was adopted. The recommendation that the executive committee list the chief farm products of each subordinate Grange in the roster, as well as the Grange name and officers, was also approved. The object of this resolution was to assist Grangers in purchasing from each other crops which were not plentiful in their section.

The resolution of the committee on the good of the Order which brought out the greatest discussion, was the one with reference to the establishment of an official State Grange paper. While Grange papers have not been a success in the past, the provision that the State Grange dues be increased two cents per quarter will bring in between three and four thousand dollars to finance the paper. As the paper will be sent only to heads of families, about one out of four members will receive it. The increased dues will therefore bring in about 24 cents for each subscriber. In addition, the lecturers' bulletin has cost about \$1,500 annually, and as the bulletin will be dispensed with, this amount can be used for financing the paper project.

The recommendation that the executive committee co-operate with all associations working for better prices for farmers, especially the beet growers' association, and to assist in the formation of co-operative associations and the labor unions in organizing consumers' leagues so that the farmer may deal direct with them and thus get a larger share of what the consumer pays, was adopted. The resolutions which asserted that the State Director of Markets should have the right to assist the farmer in establishing prices, and that the Market Director establish auction markets, were also passed.

Tonnage, Torrens System of Land Transfer, Public Utilities Act, the budget system, strict censorship of state and county fair shows, the recommendation that each subordinate Grange have active legislative committee, were all favored in resolutions.

The meeting was a decided success. There was frequent relief from the serious part of the work. Tuesday afternoon was spent at M. A. C. in inspecting the college grounds, and in the evening luncheon was served at the Woman's Building by the co-eds, and a short program was given at the Agricultural Building. An informal dancing party was given after the lecturers' program Wednesday evening.

Thursday evening the fifth and sixth degrees were given. Ninety-nine were initiated into the fifth degree by the Eaton County Pomona and 157 took the sixth degree work.

The election of officers Thursday resulted as follows: John Ketcham, master; Mrs. Dora Stockman, lecturer; C. H. Bramble, overseer; W. G. Lovejoy, assistant steward; Mrs. O. J. C. Woodman, chaplain, Frank Coward, treasurer; Miss Jennie Buell, secretary; Peter Kless, gate keeper; Mrs. Vernor Wilson, Pomona, Mrs. C. H. Anderson, Flora; Mrs. I. E. Corless, Ceres; Mrs. W. G. Lovejoy, lady assistant steward. On the executive committee James Helme was elected to the place held by Chas. Bartlett.

Farmers' Clubs

Associational Motto:

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

Associational Sentiment:

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

CLUB DISCUSSIONS.

Will Hold Club Institute.—Washington Center Farmers' Club met December 14, at Riverside, the home of Mr. and Mrs. C. N. Curran. The meeting was called to order by President S. Z. Crowl. It was decided to have a Farmers' Institute some time in January. "Do we need a County Protective Association?" was discussed by F. L. Cook. He thought if we had an association of this kind a great many laws would not be passed that are enacted. Dinner was then served and the program continued. Violin and piano music were appreciated features. Roll call was responded to by naming something made in Michigan. "Advantages of Fall Plowing" was led by C. N. Curran. Mrs. S. N. French, delegate to the State Association, then gave a lengthy and interesting report of the meeting. The following officers were elected for the ensuing year: President, F. L. Cook; vice-president, Mrs. O. J. Campbell; recording secretary, Mrs. Henry English; corresponding secretary, Mrs. S. Z. Crowl; treasurer, Mrs. Eugene Wagner; organist, Mrs. B. S. Gilman. Club adjourned to meet with Mr. and Mrs. S. N. French the second Thursday in January.—Cor. Sec.

Express Club Ideals.—The Salem Farmers' Club held its November meeting at the pleasant home of Mr. and Mrs. W. W. Hamilton. About 50 guests and members of the Club were present and enjoyed the social hour. The music and the fine dinner. The principal feature of the day was a fine address on state-wide prohibition, by Professor Lothers, of the State Normal School. His address was to the point and showed conclusively the inefficiency produced by the use of alcoholic drinks in man or boy, at the machine or in the school room. The Salem Farmers' Club have a high standard for state and national prohibition and all that stands for the making of a nation. A vote of thanks was given Prof. Lothers, also for the fine music.—H. C. Thompson, Reporter.

Elect New Officers.—Bath Union Farmers' Club met at the pleasant home of Mr. and Mrs. Noah Wilhelm, Tuesday, December 12. Meeting was called to order by President E. A. Clise. Mrs. I. M. Dryer gave a splendid report of the state convention of Farmers' Clubs. A song by the Club, and after a very fine dinner and social hour, a business meeting was held for the election of officers, which resulted as follows: President, Mr. E. A. Clise; vice-president, Mrs. I. M. Dryer; secretary-treasurer, Mrs. E. A. Clise. The president's annual address and his original poems always make a hit with the Club and was much enjoyed by all. Miss Pearl Wilhelm gave two splendid recitations for the pleasure of the Club. Club then adjourned to meet in January with Mr. and Mrs. John Reeves.—Mrs. E. A. Clise, Reporter.

Oppose Embargoes.—While in session at their regular monthly meeting, held on December 8, the North Shade Farmers' Club, of Gratiot county, adopted the following resolutions: "Whereas, owing to conditions growing out of the European war or otherwise, prices of all commodities are appreciating, therefore be it Resolved, that if Congress sees fit to place an embargo on so called food stuffs, Resolved, that it be the duty of Congress to also place an embargo upon all other commodities and manufactured articles offered for export from the United States. Resolved that these resolutions be recorded in the minutes of our Club, a copy of the same sent to our representative in Congress, to the Michigan Farmer, to the Gratiot County Herald, and to the Carson City Gazette for publication.—C. E. Bond, Mrs. Nettie Todd, Committee.

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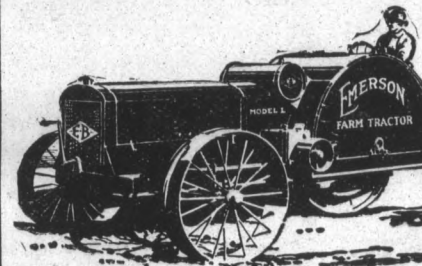
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WHEAT FOR POULTRY.

On page nine, issue of November 4, is an account of the experiment put through by the Wisconsin Experiment Station, where corn, oats and wheat were used on three lots of heifers to determine the value of these three grains as food, and the wheat proved a failure as compared with the others. The calves of the wheat-fed heifers were either dead, or ready to die when born and the heifers did not breed as easily as the others that were fed on corn and oats. This is very interesting and instructive, but brings up the question of wheat as food for other stock, chickens, for instance. We read that wheat, wheat bran and middlings are very essential in a chicken ration and I am using wheat in scratch feed and bran and middlings in dry mash, but if it is debilitating to cattle why not to hens, and if heifers do not breed so early when fed on wheat products, and their calves are weak or dead when born, would it not have the same effect on the fertility of eggs and the vigor of the chicks when hatched, and also egg production?

I am interested in chickens in a limited way and entertain serious doubts as to the usefulness of wheat in a poultry ration since reading that article. But on the other hand, it would seem hardly probable that successful poultrymen would recommend wheat as a poultry food without having proven its value. What is there that can straighten this out?

H. H. H.

In giving the article to which you refer a more careful reading you will come to the conclusion that the poor results from the feeding of wheat products entirely to calves was not due to the grain, but due to feeding the straw with the grain. The article mentions that where a part of the straw was replaced with alfalfa but the grain left as before, the calves made normal gains. This would indicate that wheat straw alone is not a very good roughage to feed calves.

Considering the extensive amount of practical work and experimentation which has been done in the matter of poultry feeding, and the high praise which wheat gets as a poultry feed from all who have had experience along this line, I do not believe there should be any doubt as to its value for poultry feeding purposes.

One authority says that wheat can be fed to poultry longer without other grain with good effect, than any other grain. The Maine Experiment Station which has probably done more work in poultry feeding than any other station, recommends a ration of grains, one-third of which consists of wheat. All of their mashers which have proven very efficient in egg production also contain large amounts of wheat bran or middlings.

One reason why wheat is so highly recommended is that it comes nearer being a balanced ration than does any other grain, and I am sure that if the feeding of wheat caused any debilitating effect upon poultry, it would have been noticed by our experimenters a long time ago.

BLUE OINTMENT.

What is blue ointment? Do I buy or prepare it? What will it cost? How do I use it, in what quantity?

Branch Co. A. L. W.

Blue ointment is a standard remedy described in the United States Pharmacopoeia. It can be purchased of any druggist, who will know how to make it. I do not know what the cost will be, but it is considered a very economical means of keeping the hens free from lice.

The proper method of using is to apply pieces as large as a small pea under the vent and under each wing. The ointment should not just be daubed on, but should be rubbed well into the skin, so that the chickens cannot pick it off. Should they get any of it in their mouths it would result in mercurial poisoning and would probably cause the death of the chicken.

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For record hatches of healthy, profitable chicks—chicks that dodge the great chick graveyard—you can't beat the

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Hundreds of dead air cells surrounding hatching chamber protect against sudden outside changes and insure nearest to nature's healthy hatching conditions. No dry, hot blasts to "cook" eggs—no hatches spoiled by temperature changes. GENUINE CALIFORNIA REDWOOD. Double-Disc Heat Regulator. Safety Lamp. Egg Tester, etc. Your money back with 8 per cent interest if not satisfied. Freight Prepaid East of Rockies. Special deal if you mention this paper. Send for BIG FREE BOOK.

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She got her start in a Model Incubator. Then she grew strong under a Model Coal-Burning Hatcher. Now she is the mother of many large, thriving flocks.

Guaranteed Incubators, -- \$10 to \$48
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If Ordered Together. Freight paid east of Rockies. Hot water copper tanks, double walls, dead air space, double glass doors, all set up complete, or 180 Egg Incubator and Brooder \$12.75. FREE Catalogue describing them. Send for it TODAY or order direct.

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50 Best Paying Varieties Hardy Northern raised Chickens, Ducks, Geese and Turkeys. Pure-bred heaviest laying strains. Fowls, Eggs, Incubators, all at low prices. Large new Poultry Book and Breeders' Complete Guide Free. **W. A. WEBER, Box 20, Mankato, Minn.**

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Barred Rocks Parks 200 egg strain. Cockerels for sale. Circular Free. **Fred Astling, Constantine, Mich.**

Barred Rock Cockerels, Cocks and Hens. Four pullets laid 850 eggs in one year. **W. C. Coffman, R. 3, Benton Harbor, Michigan.**

Barred Plymouth Rock Cockerels, full blood \$3.00 each two for \$5.00. **J. A. Barnum, Union City, Michigan.**

Barred Rock Cockerels from E. B. Thompson's Imperial Ringlets for sale, price \$2 and \$3. Write H. J. Skinner, McMillan, Mich.

Bred to Lay S. C. W. Leghorns, Males and Females at low prices. Write your wants. **White Line Poultry Farm, Hillsdale, Mich.**

PEDIGREE COCKERELS

The short cut to profit and heavy egg production is the Michigan Poultry Farm way. Our S. C. White Leghorn and Barred Plymouth Rock cockerels, with pedigrees of 200 to 280 eggs in one year, will start you on the right road. Vigorous, healthy birds, February and March hatched, \$2.00 each while they last. Supply limited.

Michigan Poultry Farm, Lansing, Michigan.

"Michigan's Largest Poultry Farm"

Breeding Cockerels

White, Buff, Leghorns, R. I. Reds. Prices reasonable. **Sunnybrook Poultry Farms, Hillsdale, Michigan.**

Buff Leghorns Cockerels. Great December Sale. Half price. **Dr. William A. Smith, Petersburg, Mich.**

CHICKS, are booking orders now for spring delivery, different varieties, free booklet. **Freeport Hatchery, Box 12, Freeport, Michigan**

FERRIS WHITE LEGHORNS

Great layers. Pullets, hens, breeding males; eggs for hatching; day old chicks; from hens laying 200 to 264 eggs. Prices low, quality guaranteed. Free catalog and price list explains all. Write for it.

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For Sale: Large thoroughbred Buff Orpington Cockerels of the Sunswick Strain. Mrs. H. H. Maatsch, Grand Ledge, Mich., R. 3.

FOR SALE Three hundred early hatched Tom Barron Pullets, Two hundred one year old Tom Barron hens. Choice stock. **Hillcrest Poultry Farm, Hanover, Mich.**

GET YOUR ORDER IN EARLY FOR Cockerels from Cousins Northern King Strain Barred Rocks. Write **David W. Jousins, North Port, Mich.**

HARRISON WHITE LEGHORNS \$2.00 for 20 yearlings or pullets. Cockerels 75c to \$1.50. Prices on these fine birds will be higher soon. **HARRISON LEGHORN FARM, Shelby, Mich.**

JOHN'S Big Beautiful Barred Rocks are all hatched, developed quick, good layers, each \$2.00 pair \$3.00 on approval. Circulars, photos. **John Norton, Clare, Mich.**

LIGHT BRAHMAS Fine cockerels at \$3.00 each. **W. E. PALMER, CONSTANTINE, MICH.**

Pine Crest, S. C. White Orpingtons. Winners again at the State Fair. Young and old stock for sale. Buy the best. **MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.**

RHODE ISLAND REDS and PLYMOUTH ROCKS Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys. 8 to 8 lbs. according to age \$6 to \$25; 10 eggs \$3. **A. E. Cramton, Vassar, Mich.**

RED COCKERELS, Both Combs. Dark red will improve the color of your flock. Write for price list. **Interlakes Farm, Box 39, Lawrence, Michigan.**

Rose and Single Comb R. I. Red cockerels for sale. Fine stock, prices reasonable. **O. E. Hawley, Ludington, Mich.**

Rose Comb Rhode Island Red Cockerels. \$5.00, \$3.00 and \$2.50 each. **JENNIE BUELL, Ann Arbor, R. 8, Michigan.**

SILVER, Golden and White Wyandottes. Choice young cockerels. Reasonable quality considered. **Ionis and Lansing winners. C. W. Browning, R. 2, Portland, Mich.**

White Wyandotte Cockerels from fine stock and A 1 layers. \$2 and \$3 each. **Farm raised. A. FRANKLIN SMITH, Ann Arbor, Michigan.**

White Wyandottes cocks and cockerels snow white from fine stock and A 1 layers. \$2, \$3, and \$5 each. **DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.**

MAMMOTH White Holland Turkeys, Rose Comb Brown Leghorns and Belgian Hares America's coming meat, get started with a pair. Circulars free. Stamp appreciated. **Riverview Farm, Vassar, Mich. R. 2, Box 10.**

Bourbon Red Turkeys. Toms \$6, Hens \$4. White Wyandotte Cockerels, \$2 each, 3 for \$5. **Collair Bros., Conklin, Michigan.**

White Holland Turkeys, Toms and Hens. A few Ganders. Buy now before the rush and get choice stock. **Alden Whitcomb, Byron Center, Mich.**

WHITE CHINA GANDERS FOR SALE, \$3 Also a few R. C. Brown Leghorn hens, \$1.50 each. **Mrs. CLAUDIA BETTS, R. 1, Hillsdale, Mich.**

FOR SALE—WHITE M. PEKIN DRAKES CHAS. KLETZLEN, BATH, MICH.

GEESE W. & B. China, Embden, Afri. Toul. Ducks. W. & C. Miss. Pek. Cay. Swed. **Ord. W. R. BROCKIN, WAPAKONETA, OHIO.**

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

We Offer a Few Special Bargains

In S. C. White Leghorn cockerels, Rambouillet rams, Hampshire pigs (either sex) and Holstein bulls. A good chance for a small investment to reap the benefit of a large expenditure of capital and years of expert breeding.

Flanders Farm, Orchard Lake, Mich.

CATTLE.

ABERDEEN-ANGUS

Bulls by BLACK QUALITY ITO, sire, First prize. Breeders and Calf Herds Mich. State Fair 1916. We also won first on Exhibitors Herd, Jr. Champion Bull, Jr. Champion Female and Grand Champion Cow. Also breeders of Percheron, Hackney and Saddle Horses. **WOODCOTE STOCK FARM, IONIA, MICH.**

Aberdeen Angus Bulls For Sale

12 head of choice young bulls old enough for service. All sons of Black Monarch 3rd. Grand Champion Bull Michigan State Fair 1914, 1915 and 1916. Black Monarch 3rd has been sold to W. E. Scripps, Wildwood Farms, for the record price of the breed in Michigan, \$1200. **U. L. Clark, Hunters Creek, Mich. Sidney Smith, Mgr.**

Aberdeen Angus

Eight bulls from eight to ten months old. One show bull, eight yearling heifers bred. Our motto: size with quality, best of breeding. Prices reasonable. Inquire of **F. J. WILBUR, CLIO, MICHIGAN.**

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.**

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

For Sale Registered Guernsey Cattle. And Berkshire swine the best yet. **John Ebel, Holland, R. 10, Michigan.**

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

For Sale: At farmers prices, registered Guernsey bulls old enough for service, from advanced registered cows. **L. J. Byers, Coldwater, Mich.**

Reg. Guernsey Bulls two gr. sons of May Rose (the \$4000 bull) one 12 mo. old dam May Rose breeding one 6 mo. old, others of serviceable age. Satisfaction guaranteed. **Alfred Anderson, Holton, Michigan.**

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

Cluny Stock Farm

100—Registered Holsteins—100 Bulls for sale, of ages from a few weeks to 14 months, from 30-lb. sires and choice A. R. O. dams. Have some special bargains for quick sale. Come and see them or write for pedigrees and prices.

R. Bruce McPherson, Howell, Michigan

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiac. 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 3/4 fat daughter of Pontiac Aggie. Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

Reg. Holstein Bull calves, Michigan Champions 1916. Male and female. World record breeding at Farmers price. **John A. Rinke, Warren, Mich.**

THIRD ANNUAL SALE MICHIGAN HORSE BREEDERS' ASSOCIATION

East Lansing, Mich.

JANUARY 19, 1917

Live Stock Pavilion 10 A. M.

**30 Head Registered Draft Horses,
mostly Percheron.**

22 Head Females 8 Stallions

These Horses are sound and right. Have been accepted only after inspection. The consignment is made up of mares in foal, weanling colts, and stallions old enough for service.

Catalogues ready January 1st.

R. S. HUDSON, Secretary-Treasurer
East Lansing, Michigan.

THE MICHIGAN SHORTHORN BREEDERS' ASSOCIATION

Invite you to attend their

SECOND ANNUAL SALE OF

Shorthorn Cattle

Which will be held at

East Lansing on Friday, January 19th.

At 1 P. M.

Consisting of twenty-seven females and twenty good husky young bulls.

Catalogues ready January 1st.

Auctioneers:

Capt. T. E. Robson, Andy Adams

W. W. KNAPP, Sale Manager

Bull Calves

From A. R. O. Dams that average four per cent fat, Sired by "Maplecrest Korndyke Hengerveld," whose Sire and Dam's Sire, are the two

Greatest Bulls in the World

Having more high testing yearly record Daughters than any three other Bulls, and his Dam's Sire has more thirty pound Daughters than any other Bull. We also have a few Calves Sired by

G & B Segis Ulrica Pledge 108790
a promising young Sire, backed by a strong combination of blood lines, and also a Calf Sired by a Son of

The Fifty Thousand Dollar Bull

and from one of our best Cows, write us for particulars in regard to these Calves, and our

BERKSHIRES

that won more premiums at the Fairs this season than any other herd in the State. Our prices are right, so is the stock, which will be sold to good responsible parties on six months credit.

SWIGARTDALE FARM,
Petersburg, Mich.

Extra Good Registered Holstein Cows FOR SALE

From \$125.00 to \$200.00.

Send for list or look them over.

Bigelow's Holstein Farms,
BREEDSVILLE, - - MICHIGAN

HOLSTEINS

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.**

"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.**

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, Sebawaing, Mich.**

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure, 8 weeks old, beautifully marked, \$20.00 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis.

At A Bargain: Three fine Registered Holstein heifers. One 2 yr. old in calf, one yearling, one six months. By 24 lb. butter bull, out of excellent A. R. O. Cows. **H. M. FERRY, (Rougemount Farms), 418 W. Canfield Ave, Detroit**

A Guernsey Grade Cow

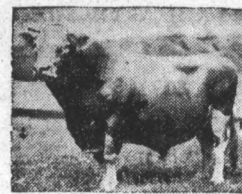
year 13,388 lbs. of milk and 755 lbs. of butter fat, EQUIVALENT to 878 lbs. of BUTTER.

USE A GUERNSEY BULL on your grade herd and you can produce such cows

Write us for booklets and names of breeders

THE AMERICAN GUERNSEY CATTLE CLUB
BOX W.M. PETERBORO, N. H.

in Springfield, N. Y.,
PRODUCED in one



Duroc Jersey Boars

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

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

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

We Have a Few Choice Bull Calves

Sired by Long Beach DeKol Korndyke. His sire Friend Hengerold DeKol Butter Boy. Dam a daughter of Pontiac Aggie Korndyke. She has a 1200 lb. record, 11-30 lb. sisters, 3-1200 lb. sisters. Her dam, a daughter of Friend Hengerold DeKol Butter Boy has 1000 lb. year record. Has 4-30 lb. sisters, 3 sisters above 1200 in year. **LONG BEACH FARM, AUGUSTA, (Kalamazoo, Co.) MICH.**



Purebred Registered HOLSTEIN CATTLE

During the fiscal year ending April 30, 1916, there were reported to the Advanced Registry Office of the Holstein-Friesian Association, 11,868 short time official records, over one half of which were by heifers with first or second calves. The average seven-day production of these 11,868 animals was 40.1 lbs. of milk, containing 2.53 per cent of butterfat. These figures emphasize the fact that Holstein merit is based, not on individual records, but upon the wonderful uniformity of high productivity of the purebred Holstein cow. There is big money in the big "Black and White" Holstein.

Send for FREE Illustrated Descriptive Booklets
The Holstein-Friesian Association of America.
F. L. Houghton, Sec'y., Box 164, Brattleboro, Vt.

Holstein Bulls

1 to 9 months old. Dam's A. R. O. Our herd sire is Johanna McKinley Segis 3d. 7 nearest Dams aver. age 27.25 **BLISSVELDT FARMS, Jenison, Mich.**

OAK LEAF FARM

Herd Sire
Ypsiland Sir Pieterje De Kol
I have several young bulls for sale, good individuals and the kind that is a credit to head any herd at farmers' prices. **E. H. Gearhart & Son, Marcellus, Mich., R. No. 4.**

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

A 26 LB. JR. 4-YR.-OLD

A 26 lb. Sr. 2-yr.-old and a 15 lb. Jr. 2-yr.-old were among the records recently made in our herd. All cows in the herd have creditable A. R. O. records and are tuberculin tested.

PEACELAND STOCK FARM, Three Rivers, Mich.
Chas. Peters, Herdsman, C. L. Brody, Owner, Port Huron Mich.

Now is the time to buy fourteen head of (Holstein) Friesian Cattle. One Reg. Bull one year old, one yearling heifer and twelve heifers from two to five years old. Two are fresh, ten to freshen soon. They are all well marked and good sized. \$900 buys this herd or will sell any of them at a price. Come and see them. **E. A. Rohlf, Akron, Mich. R. F. D. No. 3.**

REG. HOLSTEINS: Herd headed by Albina Bonte R. Butter Boy No. 8324. 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.**

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

3 Registered Holstein Heifer calves 8 mo. old nicely marked. \$125 each. \$300 for the 3. **J. M. WILLIAMS, North Adams, Mich.**

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

Maple Lane 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.**

Maple Hill Farm Registered Jersey Cattle for Sale Both sexes. The kind that pay at the pail. **J. R. Worthington, R. No. 7, Lansing, Michigan**

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

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.**

JERSEYS FOR SALE Young bulls ready for service from R. of M. ancestors. **Meadowland Farm, Waterman & Waterman, Packard Road, Ann Arbor, Mich.**

Long Veiv Farm Reg. Jersey Cattle Herd sire Oxford's Flying Fox. R. of M. record of dam 788 lbs. butter in one year. Moderate prices. **C. S. Bassett, Kalamazoo, Mich.**

FOR SALE REGISTERED JERSEY BULLS

Ready for service. Write your wants. **SMITH & PARKER, R. D. No. 4, Howell, Michigan**

Hillside Farm Jerseys For sale, seven mo. old bull calf, fine, large, individual whose combined butter production of four nearest dams is 2878 lbs. butter. **C. & O. Deake, Ypsilanti, Mich.**



Bidwell Shorthorns

"For Beef and Milk"

This heifer at 6 months has bone, size and quality—our own breeding. The blood of Scotch bulls, Imp. Shennstone Albino and Imp. Village Registered stock always for sale.

BIDWELL STOCK FARM,
Box B, Tecumseh, Michigan.

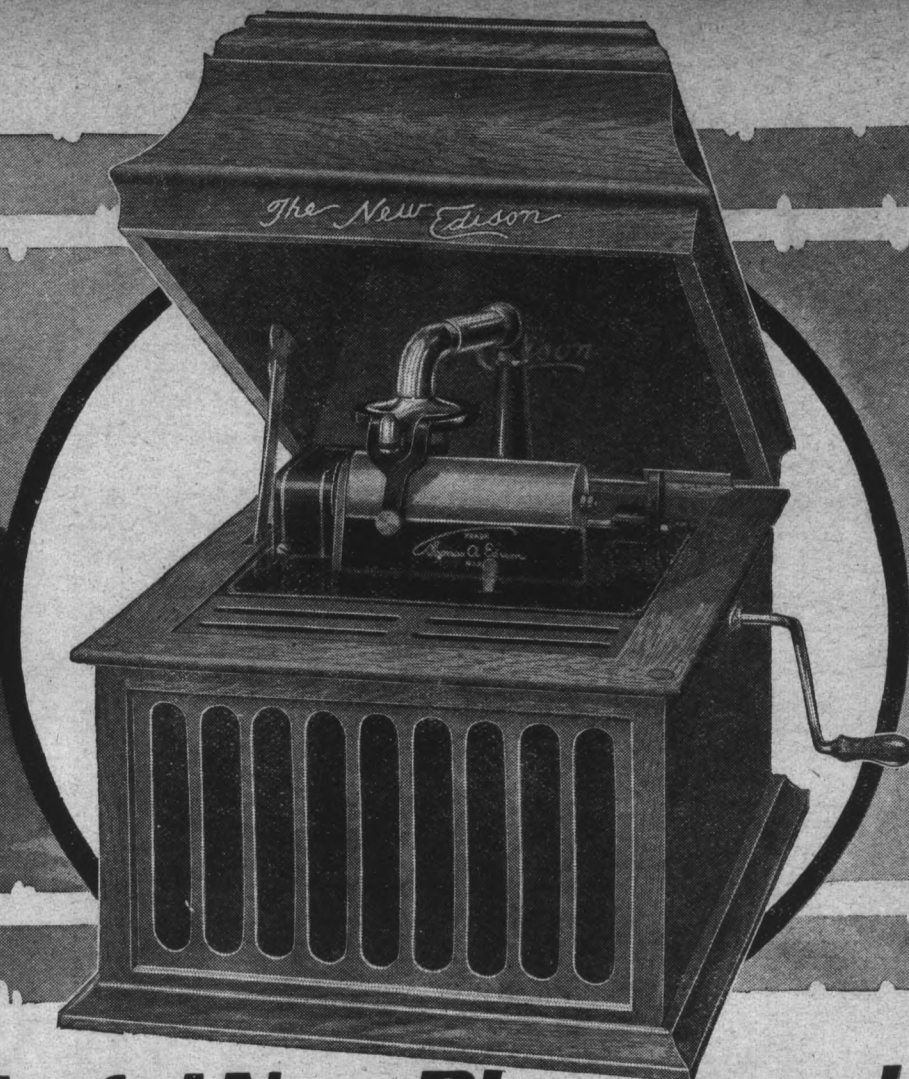
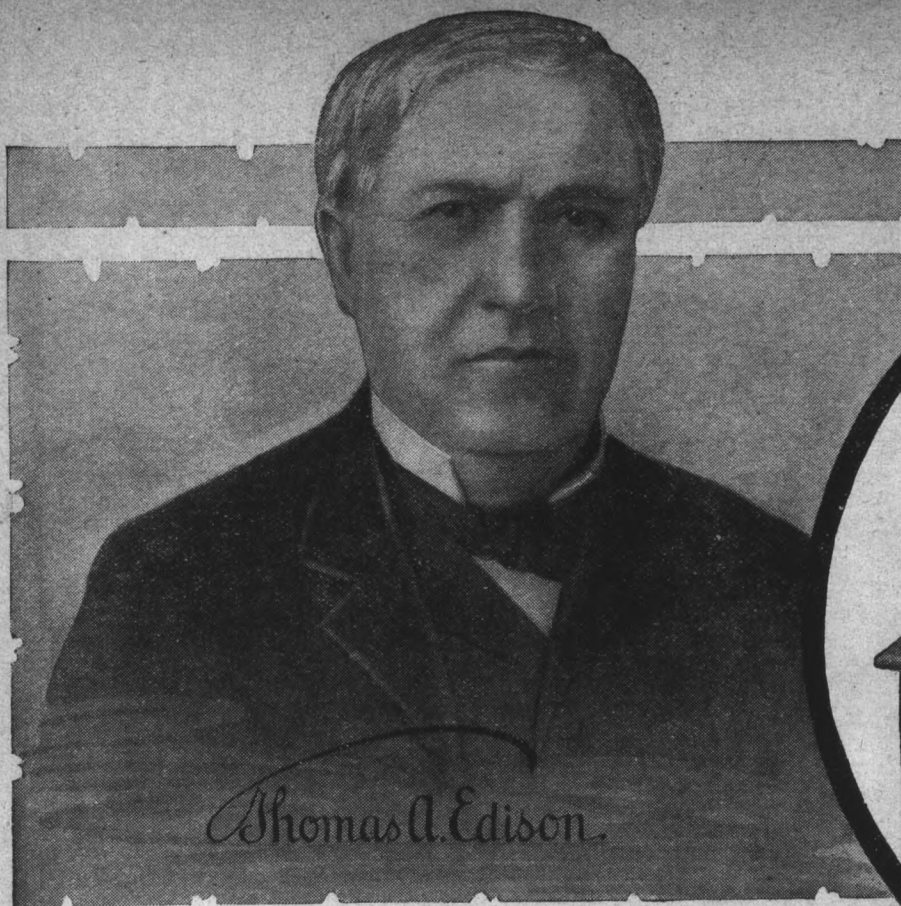
Shorthorn Cattle of both Sex for Sale
W. W. KNAPP, Howell, Michigan.

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

Milking Shorthorns. Bulls Ready for Service. **DAVIDSON & HALL, TE CUMSEH, MICHIGAN.**

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.

Breeders' Directory—Continued on page 17



Mr. Edison's Wonderful New Phonograph Sent on Free Trial!

Read the Coupon Below! An astounding offer—the New Edison, Mr. Edison's great new phonograph with the new Diamond Stylus reproducer, and 12 brand new Blue Amberol Indestructible Records sent to you on **absolutely free trial**. Send no money—just fill out the coupon below and send it to us at once. We will send you the complete outfit immediately. No C. O. D. Entertain your family and friends with the latest song hits of the big cities. Laugh at the side-splitting minstrel shows. Hear anything from Grand Opera to Comic Vaudeville. Judge for yourself just how much this great phonograph would mean to your home. Decide if you can get along without it. After the trial in your own home, make up your mind. If you decide not keep the outfit, send it back to us **at our expense**.

Only \$1⁰⁰ After Trial

If you wish to keep Mr. Edison's superb new instrument after the free trial, send us only \$1.00. Pay the balance of \$36 for the complete outfit in easy payments of only \$3.50 a month.

Think of it—a \$1.00 payment, and a few dollars a month to get this outfit of Mr. Edison's new phonograph with the Diamond Stylus reproducer, the life-like music—the same Blue Amberol Records—all the musical results of the highest priced outfits. The *finest*, the *best* that money can buy at very much less than the price at which imitations of the Genuine New Edison are offered.

After years of labor on his favorite invention, Mr. Edison has made the music of the phonograph true to life. There is no reason, now—especially since we make this rock-bottom offer—why you should be satisfied with anything less than Mr. Edison's genuine instrument. You are under no obligation on this free trial offer. **Hear the New Edison in your own home before you decide.**

Send No Money—Just the Coupon

Convince yourself first. Get the New Edison in your home on free trial. See what a wonderful instrument it is—how it brings the music of the world's greatest singers and players, the sweet, old time melodies, the jokes of the funniest vaudeville actors, all right into your parlor as if they were there **in person**. See for yourself how much you **need** the New Edison in your life. See how much happier it will make your home. Just fill out the coupon and send it in. No money down, no C.O.D., nothing to pay unless you keep the instrument. Send it back if you wish **at our expense**. Or pay only \$1.00 after the trial, and \$3.50 a month until you have paid \$36.00. Send the coupon today.

F. K. Babson

Edison Phonograph Distributors
4811 Edison Block, Chicago, Ill.

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No obligation to buy in sending this coupon; this is just an application for a Free Trial

F. K. BABSON, Edison Phonograph Dists., 4811 Edison Block, Chicago, Ill.

Dear Mr. Babson:—As per your offer, I should like to hear Mr. Edison's wonderful new style phonograph with the new Diamond Stylus reproducer in my own home on free trial. Also send me twelve records. If I decide to keep the outfit, I will have the privilege of the rock-bottom price of \$36.00 direct from you on special terms. I merely agree to take the outfit promptly from the depot, pay the small freight or express charges, and if I do not find it thoroughly satisfactory, I reserve the right to return the outfit at once at your expense. Otherwise, I will send the first payment of \$1.00 within forty-eight hours after the free trial or as soon as possible, in no case exceeding one week, and will make monthly payments thereafter of \$3.50 for 10 months. The outfit is to remain your property until the last payment has been made.

My name..... My postoffice..... Shipping point.....
Ship by..... State..... Occupation.....
Age..... Married or single..... If steadily employed at a salary please state.....
How long a resident in your neighborhood and your vicinity?..... If there is any possibility of changing
your address during the next year, what will be your next address?.....