

MICHIGAN FARMER

AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY.
ESTABLISHED 1843.

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

OL. CXLV. No. 6
Whole Number 3874

DETROIT, MICH, SATURDAY, FEBRUARY 5, 1916

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

The Importance of Farm Poultry

WE boast of the great numbers of live stock raised on the farms, their great value and importance in supplying the meats for the hungry millions who perform the labor in our factories, build and operate our avenues of traffic and travel, and carry on our commercial enterprises, and yet there is a branch of our live stock industries which the public economists generally ignore when speaking of our farm products, which exceeds in value and general use, any one of the other branches of our live stock. The poultry of the country and products of the poultry, meat and eggs, represent a value exceeding the value of our great cereal crop, wheat.

In what this Country Leads.

We sometimes say that we have one-fourth of all the horses in the world and can show a greater variety of, and a better quality of horses, than any other nation in the world. We say we have about as many hogs in the United States as has all Europe, and that we have more breeds which represent a quality superior to anything produced anywhere else in the world. We can teach the people of the old world the art of making cheap pork and yet the poultry industry leads the swine industry in productive value during the year.

It may be well to see if we can discover why poultry is in the lead in value and general usefulness. Poultry seems to be the natural accomplishment of humanity, both in the country and in the villages and cities. We find the turkeys, geese, ducks, hens and pigeons on the farms. We find the hens of various kinds and breeds in the back yards of the residents in the village and city, for it is considered cheaper to raise and keep a few hens on the table wastes and a little purchased grain feeds than to pay the butcher the high prices asked for poultry meats, and to take the chances of getting stale eggs at the grocery. Yet with all the plans to avoid buying eggs and poultry, there is an enormous traffic in poultry and eggs. The sum of all that is paid to the producers as the poultry and eggs pass through the channels of trade is enormous. This sum increased by the

products that do not go through the channels of trade, has been estimated to exceed a billion dollars a year.

There are three grand divisions of territory of our great country which are referred to in considering the great industry as a whole. The first division is the New England states, New York, Pennsylvania, New Jersey and Maryland. The second embraces all the Pacific slope. The third comprises all the Mississippi Valley and covers Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Nebraska, Iowa, Kansas, Missouri, Kentucky, Tennessee, Oklahoma, Arkansas and Texas.

It is in this third section that the vast majority of the eggs of the coun-

ers. The losses to dealers and shippers during the spring, summer and fall seasons on account of bad or spoiled eggs, is about 15 per cent of the entire value. Could these losses be prevented, better prices could be paid to the producer, which would encourage him to adopt better methods in management and increase the number of eggs produced.

Poultry Demonstration Work.

Appreciating the necessity for better methods of poultry management, the federal Department of Agriculture operated a poultry and egg demonstration car in the southwest last year. They covered about 7,000 miles of railroad and visited 117 different egg shipping towns. Over 11,000 farmers

in the proper manner was explained. Charts were used to show the types of hens of different breeds. Breeding, feeding and caring for chicks for growth and for market received attention. Good methods of handling the laying flock were explained. Pictures of different houses were shown and instruction on how to keep them in sanitary condition given. In fact, it was a traveling school where all interested along the lines of railroads could get a good deal of valuable information for the time and trouble required to attend the school. The car made whole day stands at every station visited. The doctrine of egg conservation was handed out to all who would listen. It is estimated by the department experts that in the state of Kansas alone the loss from spoiled eggs alone exceeds fifteen million dollars per year. The teaching by the lecturers in this demonstration car was based on the fact that 30 per cent of the egg product of the country is wasted. It is not so much a question of tools and capital invested, as it is care and intelligent management.

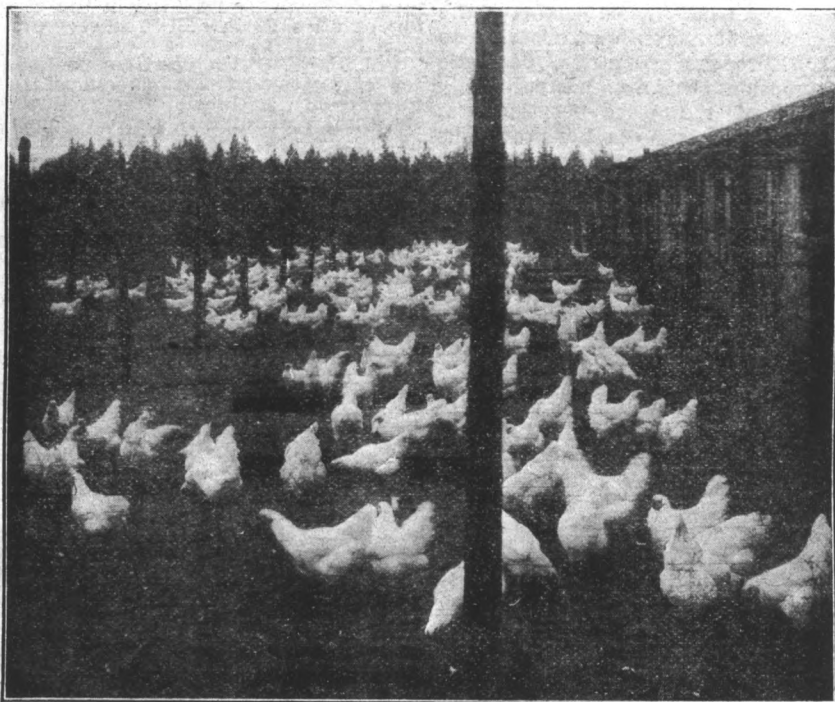
Value of Educational Campaign.

Such an educational campaign would be of great benefit to all portions of the country. The benefits derived from such traveling schools would not only pay to keep one car going all the year, but several years. The producers can properly ask for such a movement, and the consumers who demand more wholesome food at a living price, can well ask for it. Let the poultry producers lead and secure what they deserve.

It is not difficult to see why the poultry and egg producers should receive first attention. There are one hundred individuals who pretend to study poultry in some phase or other to one who studies any other kind of live stock. There are twenty volumes written on poultry to one on horses, cattle, sheep and hogs. And farther, poultry and eggs are used as food, and eggs are so universally required in cooking that the great masses of people are interested in having them brought to their doors in the very best possible condition.

N. A. CLAPP.

(Poultry Dept. continued on page 180).



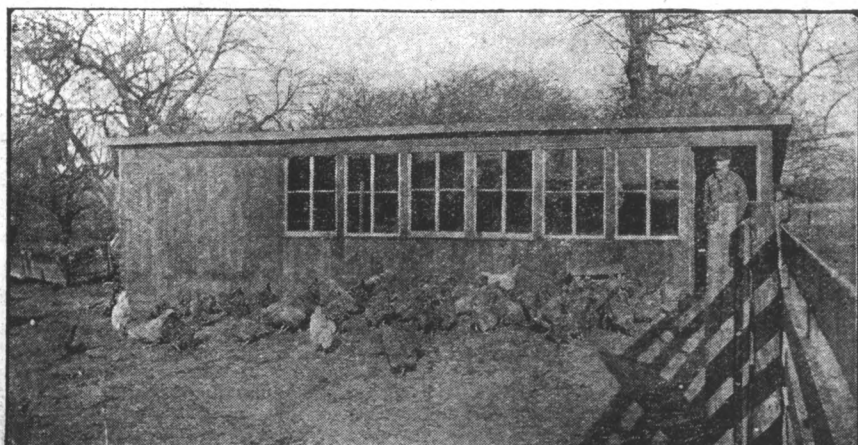
Well-bred Fowls, Well-kept, are Essential for Successful Poultry Raising.

try are produced. The methods followed by the producers in any and all of these divisions of country are faulty and can be improved upon in many ways. A better knowledge of the business, both in producing and marketing, is required in order to secure larger profits for the producers and give better satisfaction to the consum-

and dealers attended the lectures at all the different places, and received instruction in the best known methods of handling poultry and poultry products. The lectures covered the subjects of producing, gathering and marketing the eggs. Candling eggs to prove their present condition was demonstrated. Packing and shipping eggs



The Colony House Method Encourages Vigor in Chicks.



The Farm Flock is the Backbone of the Poultry Industry.

The Michigan Farmer

Established 1843.

Copyright 1916.

The Lawrence Publishing Co.

Editors and Proprietors.

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4525.NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—604 Advertising Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
PHILADELPHIA OFFICE—261-263 South Third St.M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec.-Treas.L. R. WATERBURY.....Associate Editors
BURT WERMUTH.....
FRANK A. WILKEN.....
ALTA LAWSON LITTELL.....

E. H. HOUGHTON.....Business Manager

TERMS OF SUBSCRIPTION:

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

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.

RATES OF ADVERTISING:

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

Mem Standard Farm Papers Association and Audit Bureau of Circulation.

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

DETROIT, FEB. 5, 1916

CURRENT COMMENT.

Michigan bean growers are in a different position with regard to the bean crop than any other crop grown upon Michigan farms. Inasmuch as Michigan growers produce approximately 75 per cent of the total bean crop of the country, they collectively have a larger degree of control of the future supply of beans in American markets than that of any other staple crop grown upon Michigan farms.

Under average conditions prevailing during the past few years the bean crop has been a very satisfactory cash crop and has fitted nicely into the crop rotation practiced upon many Michigan farms. In recent years fungous diseases, notably anthracnose and bacterial blight, have curtailed the production to a point which has made badly infected crops unprofitable, although the shortage of production last year has increased the price to a degree which partially compensates for a near crop failure in some bean producing sections.

In planning next season's campaign many farmers who have formerly grown beans will deliberate seriously over the advisability of planting their usual acreage, on account of the prevalence of these diseases and the poor crop of last year. On the other hand, the high price secured for beans this year will look attractive to the man who had a fair crop, as well as to many of his neighbors.

The problem of the eradication of the serious bean diseases above mentioned has not yet been successfully solved, although the scientists working on same have expressed hope for its solution in the not distant future. In the meantime the experiment of sending Michigan beans to a higher and drier climate for the production of seed stock has worked out successfully in some cases, as shown by samples exhibited by Prof. Coons at the recent meeting of the Michigan Experiment Association at East Lansing. Inasmuch as the prevalence of these diseases in common with other fungous plant diseases depends to a considerable extent at least, upon seasonal conditions, there is every reason to believe that they will be less destructive in future seasons than was the case last year when the weather conditions were more favorable to their rapid spread than in any previous year with in the memory of Michigan bean growers, hence the advisability of farmers who are equipped to grow this crop, and who have their rotation planned to that end, planting their normal acreage next spring, securing as clean seed as possible and giving the crop the best of culture to afford it a maximum resistance to the encroachment of fungous diseases.

At the recent midwinter meeting of the Michigan Bean Jobbers' Association, State Market Director McBride advocated an increased production of beans in Michigan, together with the adoption of publicity plans which would bring to the attention of more people the superior value of beans as human food, thus increasing domestic consumption. While this expedient would undoubtedly help market conditions in years of abnormal production—as has been demonstrated in other lines of production in which the producers have marketed their product through a central organization—quick results could hardly be expected in this direction, and a sudden great expansion of production would probably result in a considerable lowering of values.

The supply and demand have been in about the proper ratio during the past five years to make the average price for the product a fairly remunerative one to growers, who could scarcely afford to give the crop even its present prominence in their scheme of farming at a much lower figure. On the other hand, there are factors affecting the probable future supply which would seem to warrant an increase in Michigan production of beans without grave danger of such a result.

At the recent meeting of the Michigan Bean Jobbers' Association, Mr. Paul Strauss, of Budapest, Hungary, spoke on "European Bean Growing and Marketing," advancing the idea that the European war would greatly extend the European market for beans. His own country of Hungary produces about five million bushels of beans annually, about one million bushels of which normally found their way to our market. A considerable portion of the balance of the crop was exported to other European countries, domestic consumption being comparatively small, and the price usually low. Due to the shortage of other provisions beans have become more popular food, and more beans are being eaten at extremely high prices now prevailing than formerly under cheap prices, and Mr. Strauss predicted that in the future a very large proportion, if not all, of the Hungarian crop would be used for domestic consumption.

Italy which was formerly a large producer of beans now imports beans, and France has also become an importing country, the so-called French beans which sometimes reach our market being in reality a Roumanian product. Certainly during the war our own market will not be invaded by foreign beans, and with the prospect that Europe will not only take her own crop, but possibly some of ours after the war is over, there is unquestionably room for a liberal increase in Michigan production without serious danger of reducing market values below the point of profitable production.

Thus, except for the handicap of fungous diseases against which the grower can guard to some extent at least, and which will doubtless be less troublesome in normal seasons than was the case last year, the future outlook for the Michigan bean crop would appear bright, particularly as Michigan growers now have the nucleus of a working organization which could be brought into play to save the situation should speculators undertake to force values too low in good crop years.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Active war has been confined to restricted districts during the past week. An attempt to break through the French lines in the west by the Germans, activity in the Caucasus region by the Russians and fighting between the Turks and the British along the Tigris, are the main items of note. Constantinople reports that Turkish troops captured 1,000 camels and other property from the British and have placed the invading forces in a difficult position. In the Caucasus region, conflicting reports are at hand. The Turks declare that recent Russian advances have been halted and in a few instances their lines have been thrown back, while from Petrograd comes reports that the

Russians are pushing their campaign with much zeal and that an expedition is organized to push through and relieve the British forces along the Tigris. In northern France south of the Somme river, the Germans captured French trenches along a front of 3,500 meters and to a depth of 1,000 meters. The latest news states that counter attacks were repulsed. In the Champagne district artillery duels have been lively but in the other sections bad weather has restricted the fighting. There are no changes in the Balkan situation except that the Allies are strengthening their positions about Greece. The Russian front is quiet. A Zeppelin attack on Paris Sunday night resulted in the killing of 24 civilians and the injuring of 27 others.

Five Norwegian steamers from Various American ports are being held up by British military authorities at Kirkwall.

The women of Yucatan are appealing to that state for equal suffrage. The governor has passed resolutions to make suffrage universal and the holding of office open to all citizens.

The next budget of Great Britain will include taxes on theaters, music halls and other places of amusement and also on railway tickets and an import duty on automobiles and pianos.

National.

Weather disturbances have been mores or less general over the country. In the Ohio Valley heavy rain-falls occurred late last week and early this, doing considerable property damage. In southern California the worst storms in years have resulted in the sweeping away of dams and flooding large areas of inhabited territory. Sixty people are reported to have been killed or drowned by the floods and it has been necessary to land marines to preserve order in the stricken district about San Diego.

President Wilson is endeavoring to make plain to the American public the provisions of the administration's preparedness program in a series of addresses being given at different points in the central states.

A difference of opinion among aldermen of Bay City resulted in the closing of all saloons and resorts over Sunday.

Col. F. W. Swift, one-time postmaster of Detroit, and a colonel of the Seventeenth Michigan Infantry during the Civil War, died in Detroit Sunday at the age of 85.

Seventy members of the Ford peace party arrived in New York Sunday aboard the Holland-American liner Rotterdam.

Wireless telephone communication between warships for transmission of orders in movements at sea has been developed in the Atlantic fleet in the maneuvers off Guantanamo.

An aero club for the training of aviators is to be organized at each of eight different points in this country for the training of men for military purposes. It is proposed to locate one of the clubs at Detroit.

The members of the Michigan State Bankers' Association will meet February 20 at the Agricultural College in connection with the state Round-up to discuss rural credits with the farmers.

Reports on the production of radium in this country show that the market has been greatly restricted by reason of the European war, and that much less was produced last year than formerly. The United States have the largest known deposits of any country in the world.

FARMERS' INSTITUTES.

Superintendent of Institutes Taft advises that since the list of Farmers' Institutes for the first two weeks in February was issued, it has been found necessary to make slight changes in two or three counties as follows:

Macomb Co., Utica, Feb. 4; Armada, Feb. 5.

Washtenaw Co., Saline, Feb. 10; Willis, Feb. 11.

Genesee Co., Flint, Feb. 10-11.

Charlevoix Co., Marion Center, Feb. 7; Maple Grove, Feb. 8; Pine Lake, Feb. 9; Deer Lake, Feb. 10; Clarion, Feb. 11; Springvale, Feb. 12.

In Wayne County One-day Institutes will be held at Northville, Feb. 14; Canton, Feb. 15; Belleville, Feb. 16; Martinsville, Feb. 17; New Boston, Feb. 18; Flat Rock, Feb. 19; Eureka, Feb. 21; Romulus, Feb. 22.

Monroe Co., Azalia, Feb. 14; Maybee, Feb. 15; Raisinville, Feb. 16; Samaria, Feb. 17; Carleton, Feb. 21-22; Milan, Feb. 25-26.

The County Institutes will be held as follows: Hillsdale Co., North Adams, Feb. 18-19.

Washtenaw Co., Ann Arbor, Feb. 22-23.

Lenawee Co., Adrian, Feb. 23-24-25.

Monroe Co., Monroe, Feb. 23-24.

Wayne Co., Redford, Feb. 23-24.

Oakland Co., Pontiac, Feb. 24-25.

Livingston, Howell, Feb. 25-26.

Ionia Co., Ionia, Feb. 23-24.

Montcalm Co., Stanton, Feb. 25-26.

Which Way Do You Make Hay?

The Louden Balance Grapple Fork, with its five-foot spread and its 24-inch tines, lifts an enormous load, binds it tight, drops it clean, and spreads it well in the mow. It leaves no littering to clean up with a pitchfork.

Three or four forkfuls clear the rack. Time, five minutes!

There is nothing complicated about

Louden Hay Tools

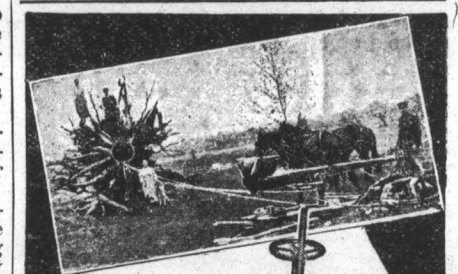
They are simple, sturdy, common-sense tools, built to handle big loads quickly and easily, and to save time and labor in hay harvest. Equally valuable in field or barn.

Do it the quick, easy and economical way this season. The saving of a few hours in getting your hay under cover may save you many times the cost of your Loudon outfit.

Mail a postcard today for our complete catalog. It shows "Everything for the Barn."

The Louden Machinery Company
1900 Court Street Fairfield, Iowa

Manufacturers of
Hay Tools,
Stalls and
Stanchions,
Feed and
Litter
Carriers,
Door
Hangers,
Etc.



Pull Out Stumps With the Famous Hercules!

Triple-Power
Pull an acre or more of stumps a day. Pull any stump in 5 minutes or less. Don't have to wait for the stump to rot. Pull the stump out! Make 1000% profit by using the Hercules. \$1281.00 the first year on 40 acres! \$750.00 every year after. Let us prove it.

Low Price and Book Free!

Get the facts. Read our book. Tells what all steel, triple power means. Shows many features of the Hercules. Shows many photos and letters from owners. Postal will do.

HERCULES MFG. COMPANY
137 24th St. Centerville, Iowa



EASY TO ERECT ON
WOOD OR IRON
POSTS

REPUBLIC SANITARY FENCE
This fence appeals to the man who takes pride in the appearance of his home and wants a permanent improvement at moderate cost. Built of large wire, heavily galvanized. Will last many years.

Our Republic Royal Blue Gate is a model for strength, durability and convenience. Extra heavy frame of high-carbon steel. "U" end-bars do away with malleable connections—reduce chance of breakage. Galvanized or painted, as desired.

Gate raises 30 inches at front end and 12 inches at hinge end. See your dealer. Write for Illustrated Folder and Catalog.

ROYAL BLUE FARM GATE
Republic Fence and Gate Co.
44 Republic St.
Chicago, Ill.

Automatic Stock Proof Latch



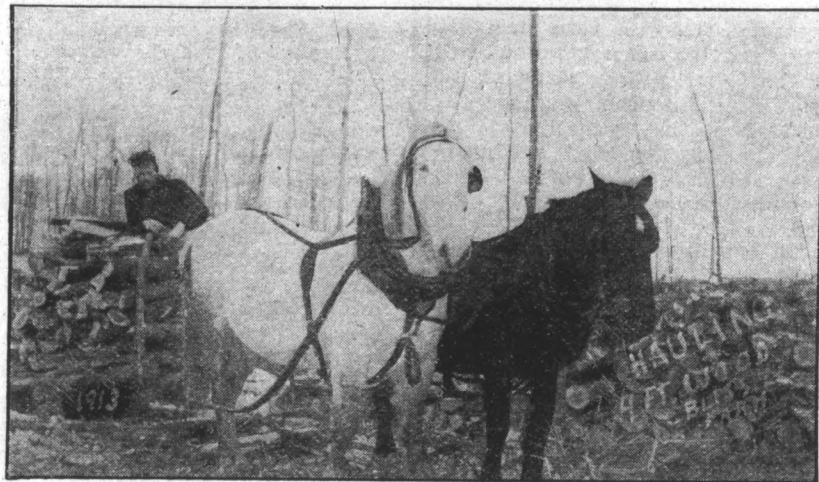
WANTED—AN IDEA: Who can think of simple your ideas, they may bring you wealth. Write for "Needed Inventions" and "How to get your Patent and Your Money." RANDOLPH & CO., PATENT ATTORNEYS, DEPT. 67, WASHINGTON, D. C.

The Farm Wood Supply

DURING the winter when other duties are less urgent the problem of the farm wood supply is of first consideration. In the fruit belt where large commercial peach orchards are owned, old trees are constantly removed and these make a fair brand of fire wood if they can be worked up cheaply. A buzz saw is the most economical method of using up this waste material and at the same time large quantities of wood from the prunings and accumulations of waste lumber can be turned into stove wood lengths. A buzz saw is not an expensive investment and usually a farm will possess a gas engine for running

more, fir, hemlock or short-leaved pine. Third in value comes the cedar, poplar, catalpa, cypress or white pine. A cord of the best stove wood is said to have a heating value equal to a ton of good quality coal, while the second-class wood is two-thirds as good as a ton of coal and the third-class is only one-half as good as coal.

Coal is an ideal fuel on the farm in many ways. It holds the fire very well, much better than wood, and it is not so bulky for the fuel value that it contains. However, it is expensive and usually means a long haul from the city dealer or from the railroad yards. Wood will probably remain as

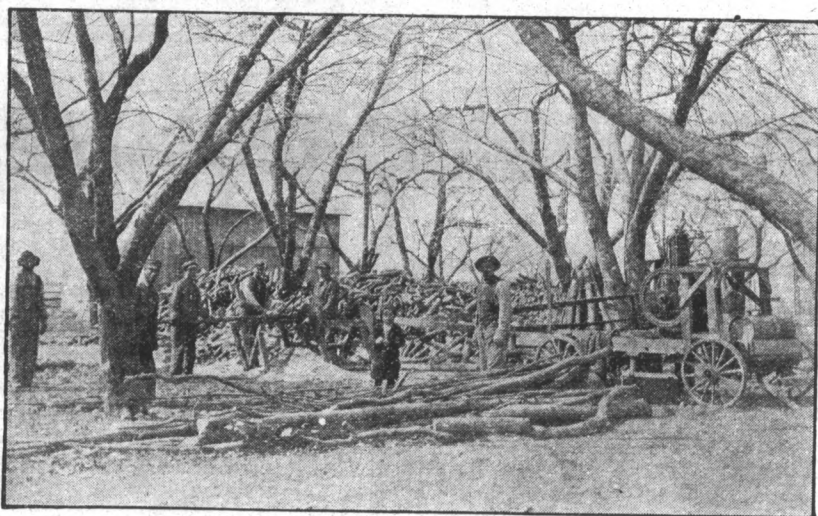


Hauling Four-foot Wood From the Farm Woodlot.

it. I have seen an old-fashioned steam engine used very successfully in running the buzz saw. A gasoline engine will doubtless prove more satisfactory in most cases. It is surprising how large a quantity of wood can be turned into fuel in a short time with the use of farm power engines and a buzz saw. In sections where there is not enough wood to make such equipment a profitable investment it can sometimes be purchased on a co-operative basis, or one farmer can own the equipment and make a fair profit by renting it out or by performing the work himself for the neighbors. The old buck-saw should never be used for

the farmer's fuel in this section of the country as long as the woodlot flourishes and the neighbor owns a few acres of uncleared land.

While recently talking with a western man he said: "There are a few near-millionaires in our town who occasionally enjoy the luxury of a wood fire in the grate on Sunday morning. The remainder of the population cannot afford to buy wood and there is nothing that a man enjoys more when returning from a woodless region than a good sparkling fire in the grate." Possibly his statement was slightly exaggerated and yet he came from a state where wood is very scarce and



Buzzing Wood with Gas Engine on a Van Buren County Farm.

turning out stove wood when the work can be turned over to the engine.

The wood from old apple orchards makes an excellent fuel. Sometimes it can be sold for the manufacture of tool handles but where this is not possible apple wood makes about the hottest kind of a fire and it will burn for a long time. Doubtless there are many decayed and broken down apple orchards which might be used to advantage in developing a good fuel pile instead of standing unpruned and unsprayed as a harbor for insect pests and fungous diseases.

If wood is to be purchased of neighbors for the home fuel supply there should be some understanding as to the kind of wood furnished. The best fuel wood comes from the hard maple, oak, hickory, ash, elm, beech or birch. Second will come the soft maple, syc-

his remark increased my pride in our bountiful wood pile, which I received on an exchange for a few loads of clover hay which I did not need. It is true that the virtue of the open fire built with wood can scarcely be exaggerated. The best of coal fires may look very comfortable but they do not radiate the cheer which comes from a heap of crackling wood.

The farmer who has no wood on his farm appreciates the value of good fuel and if he has ever known the terrors of the winter's fuel bill in the city he has an increased respect for the farm woodlot. Timber is a valuable product and the farm woodlot is an asset in the farming business which cannot be ignored. By figuring how much wood you will need every year and comparing it with the cost of raising other crops to sell for enough to

Banks O. K. heating investment

The improvement of property by putting in radiator heating is looked upon with special favor by bankers and building-loan companies. They recognize the security of the investment, as radiator heating will last a hundred years, and brings big annual savings to the owners. Real estate is immediately put into "preferred class" for rental or sale by installing



The Banker knows that money spent for radiator heating is wisely invested

AMERICAN & IDEAL RADIATORS & BOILERS

Why do you not have this well-known and highly-prized heating in your own home? Men with great experience in real estate and financial matters look upon it as the most important feature of the building. Your money cannot be spent for a better or larger dividend-paying investment than an IDEAL-AMERICAN outfit.

Don't expect the family to live all winter cooped up in one or two rooms around a stove, and be happy with farm life. That's not healthy or economical. IDEAL-AMERICAN heating will open the whole house and make every room comfortable for all folks by the even distribution of its safe, clean and June-like heat. Get an IDEAL-AMERICAN outfit. The women folks ought to have a portion of the improvement-money that you put back into the farm, and, anyway, the success of the farm depends, more than you think, upon the health of your wife and the comfort and convenience of your home—the heart of the farm. Make the seven winter months easy ones—pleasant for work, and more healthful for wife and young folks.

The IDEAL Boiler is placed in basement, side-room or lean-to. No labor, no lugging coal upstairs, no dirt, dust or escaping coal-gas. Phone the local dealer about IDEAL-AMERICAN heating outfit for your old or new building—put in without family disturbance or tearing partitions. IDEAL Boilers will burn any local fuel—soft coal, screenings, lignite, pea coal, wood, oil, or gas, and the fuel saving will surprise you.

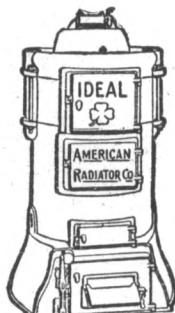


A No. 5-19-W IDEAL Boiler and 450 ft. of 38-in. AMERICAN Radiators, costing the owner \$200, were used to heat this farm house. At this price the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which vary according to climatic and other conditions.

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Also makers of stationary, unfailing ARCO WAND Vacuum Cleaners.

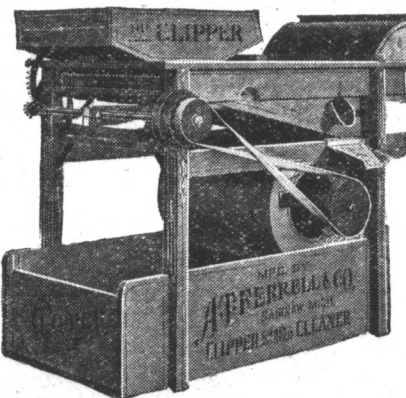


Send today for copy of our (free) book "Ideal Heating"—48 pages full of illustrations which will give you much valuable information on the subject of farm house heating.

IDEAL Boilers do not rust or wear out—no repairs. Always ready for service and supply ample heat with one charge of fuel for 8 to 12 hours in zero weather.

Write to Dept. F-3 Chicago

The Clipper Improved No. 1-B Grain and Seed Cleaner



The No. 1-B is sold under a

30-Day Guarantee of Satisfaction or money refunded.

Price, complete, east of the Mississippi, \$23.50 cash. FREIGHT PREPAID to your R.R. station.

In Successful Farming Three Factors are Prominent—the Soil, the Man and Good Seed. The Clipper Cleaner puts success within your reach by Insuring Good Seed.

Write for Catalog and address of nearest jobber.

A. T. FERRELL & CO., SAGINAW, MICH.

This Mill has a principle that is different from all others. For years it has been thoroughly tried out and adopted by thousands of the best farmers, the U. S. Dept. of Agriculture, Agricultural Colleges, Experimental Farms and hundreds of the leading seedsmen, seed corn growers, etc.

Ours is the only mill making use of the "vertical blast" which accurately weighs every seed and kernel, separating the light, shrunken, immature seeds from the plump, heavy, mature seed, 98% of which will germinate under test. This point alone makes much of the difference between crop success and failure.

No Mill Will Do Good Work Without the Right Kind of Screens.

We furnish 12 screens for cleaning and grading all kinds of seed grain, seed corn, all kinds of clovers, alfalfa, timothy, millet, flax, peas, pea beans, cow peas, soy beans, etc. And, after the most careful study and tests in actual work, we guarantee this screen outfit to be the best that has ever been offered with any mill. There are screens for clover containing buckhorn and plantain, timothy containing pepper grass, cockle from wheat and other difficult separations.

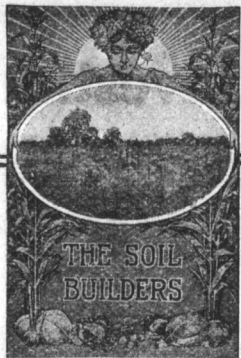
Use NATCO Drain Tile—Last Forever

Farm drainage needs durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.



National Fire Proofing Company

1115 Fulton Building, Pittsburgh, Pa.



FARMERS Get This Book FREE

It tells how others have increased their yields at a profit and how you can do the same with

DARLING'S ANIMAL MATTER FERTILIZERS

You don't know what this form of Fertilizer will do until you try it. Don't put it off any longer—

Try a Ton This Spring

Darling's Fertilizers contain the available Plant Food necessary to increase yields. They also hasten maturity and improve the quality. This means bigger profits for you.

AGENTS Wanted in localities where we are not now represented.

DARLING & COMPANY
Dept. 52, U. S. Yards Chicago

THE TOWER SYSTEM OF CORN CULTURE

Is employed by most successful Seed Growers. Most prominent among whom ranks THE ZELLER SEED CO., Cooper, Iowa. (Growers of Grand Champion Bushel of Corn exhibited at 1915 World's Fair, San Francisco.) They say: "We use it all the time, wet or dry weather. — We believe the Tower method the only method of cultivation, and will always recommend it to corn growers." Scores of other seed specialists and many thousands of farmers use the Tower System. It pays to use it. It pays the rent, as it increases the yield.

Spares All Corn Roots



A WET SEASON TRIUMPH

Ira Vincent, Algonia, Ia., an average progressive farmer, grew by the Tower System the past season a well-matured corn crop, from which he sold over 200 bushels of Seed Corn at an average price of \$6.25 per bushel (sold to his neighbors who had used "shovel cultivators.")

This endorses the Tower way for a wet season, as well as dry weather.

Avoid imitations; see that your cultivator has the name "TOWER" on the tongue. Write a postal for our free booklet on "Corn Culture."

THE J. D. TOWER & SONS CO.
37th Avenue, Mendota, Illinois.
(Original manufacturers of Surface Cultivators.)

ONLY 3 MOVING PARTS SANDOW ENGINES

Over 20,000 in use for general farm work, irrigation, operating binders, railroad track cars, portable outfit, etc. Particularly adapted for electric lighting, which requires absolutely uniform power.

30 DAYS Free Trial

10 Year Guarantee. Run in either direction. Reversible while running. Water cooled. Light in weight. Simple design eliminates engine trouble. Child can operate. Price low. Handsome new engine book tells you why you should have a Sandow. Write for it today.

Detroit Motor Car Supply Co.
Detroit, Mich.

164 Canton Ave.

buy that wood, it is easy to see where the farm woodlot is an economic factor in the system of farm management. Furthermore, fuel is a necessity whether the other crops fail or not and the fuel crop in a well managed farm woodlot does not seem to fail. On farms where there is now a flourishing woodlot some study of the best method of preserving the supply will prove practical and profitable. This article has been written after reading the article by Professor Chittenden in the Michigan Farmer and the facts he has presented under the heading, "Estimating Timber in the Woodlot," have set me thinking about my own wood supply in the future. A study of Professor Chittenden's article on estimating your timber crop may well lead up to the question, "Which fuel is best, how much is standing timber worth, and what am I going to do for fuel in the future?" Whether you own a woodlot or buy fuel of the neighbors this question is of great importance. Timber is costly and fuel is becoming scarce in many sections. Unless reforestation and woodlot rejuvenation is emphasized we will some day wake up and find "a tree is a tree" and only our "near millionaires" will enjoy the comfort of the open wood fire.

Ingham Co. R. G. KIRBY.

FARM NOTES.

Land Plaster, Lime and Fertilizer.

I have been a reader of the Michigan Farmer for a number of years, and read the articles on building up run-down land with great interest, but I never happened to see an article on land plaster or gypsum (which I understand is one and the same thing). Now what I would like to find out is, which would be the most practical to sow with corn to get a good yield, land-plaster, lime or fertilizer, and how much? The land is a sandy loam in not very good condition. I manured it last spring and put it into beans. (But they were a failure on account of the weather conditions). I have fall plowed it shallow (because there is quack grass on it which I want to kill out). Now I want to manure again this winter and plow it deep next spring and put into corn.

Tuscola Co. J. C. K.

Land plaster or calcium sulphate was formerly used quite extensively, often producing markedly beneficial results when applied to new seedlings of clover. Land plaster is not, however, a fertilizer in any sense of the word, but under certain conditions it may be a soil stimulant, tending to release and make available certain unavailable mineral plant foods already in the soil notably potash. This effect is, however, produced only on new soils which have an abundant store of this mineral element of fertility held in a form to be easily converted in this manner. The process naturally leaves them more impoverished in this natural store of plant food which is so converted into an available form for the use of plants by nature's method under cultivation.

In recent years scientists have pointed out another objection to the use of gypsum for this purpose, which is that if continuously applied in sufficient quantities it tends to produce an acid condition of the soil, since the lime contained in the gypsum is used up and the sulphuric acid which it contains is left in the soil. After the land plaster has been used for a time as a soil amendment on new land it no longer gives apparently beneficial results, for which reason its use is almost wholly abandoned on the older soils of the state which would probably be in better condition at the present time had gypsum never been applied.

Other forms of lime, as ground limestone or calcium carbonate or quicklime, which reverts to carbonate in the soil, are very frequently beneficial on Michigan soils, particularly those which have been cultivated for some time, inasmuch as they correct an acid condition of the soil and restore a proper balance of calcium for a maximum success of clovers and other leguminous crops. For corn, however,

better results will be secured by the use of available plant foods in the form of commercial fertilizer. Commercial fertilizer will give better results on land that is in good physical condition and is well supplied with humus, but when used in combination with stable manure as proposed in this case, a good degree of the same results will be secured. It may be applied in the hill in small quantities not exceeding 125 to 150 pounds per acre with good results, although fertilizers containing potash should not be used more liberally than this in the hill, as the germination of the corn is likely to be injured in dry seasons. For corn a more liberal application of say 500 pounds per acre sown broadcast and worked into the soil when the land is being fitted for the crop will, in the writer's opinion, give more satisfactory results, since the corn plant has a very extensive root system and will thus be nourished to some extent throughout the season, provided the plant foods in the fertilizer are thoroughly distributed through and incorporated with the surface soil.

Clover for Seed Crop.

I have about 14 acres of land which I would like to sow to oats and seed to clover. It is good alsike ground. I would like to know how much I should sow per acre, if it is a paying crop to cut for seed and what is average yield per acre? Also, why does it benefit mammoth clover to clip or pasture it down in spring, as I understand it should be clipped about the first of June.

Van Buren Co.

C. E. B.

Alsike clover yields about the same quantity of seed as the red clovers under similar conditions. Average yields are difficult to estimate for the reason that the yield varies greatly owing to seasonal conditions. Two bushels per acre can be considered as a satisfactory yield, and is at least well up to the average. Alsike is more adapted to heavy and wet soils than the other clovers and on such lands gives better results. Mammoth clover where grown for seed is clipped back early in June as a means of lessening the damage from the clover midge which attacks the blossoms and prevents their filling with seed. Alsike is sometimes pastured earlier in the season for the same reason, but never as late as mammoth clover. This brings the blossoming period at a season when the midge is less prevalent than at the normal blossoming period.

Value of Ashes as a Fertilizer.

I would like to ask the fertilizing value of wood ashes; especially in potash, and would it pay to draw them four miles to put on muck land where onions are to be planted? How should they be applied?

Hillsdale Co.

E. C. S.

Wood ashes is the best available fertilizer to use on muck soils which will be available the present season. This is true owing to its content of potash, a much needed mineral fertilizer on muck soils, yet a very scarce article since importations of potash from Germany have been cut off by the European war. Wood ashes are not of as good an average quality as formerly, when only the best hardwood was burned. They, however, contain from four to seven per cent of potash and one and a half to two per cent of phosphoric acid, besides about 25 to 30 per cent of lime which will also prove beneficial on muck soils. Leached ashes contain much less potassium, and are consequently of much less value. Coal ashes have not sufficient value from a fertilizer standpoint to make their application to the soil profitable.

It will undoubtedly pay to draw ashes from the distance mentioned to apply to the muck soils for growing onions. The ashes should be applied to the surface and worked into the soil after applying and when same is being fitted for the crop.

In putting up a shop it will pay to make it plenty large and it will be a good plan to arrange shelves here and there that will hold chisels, auger-bits, nails, and other small tools.

FIELD TYPE

Is Always Picked By Experts

It has happened repeatedly when gas engine experts have been called upon to select the best gas engine for stationary work that they have chosen the Field Type W.

So frequent has been this verdict that Field Type W engines are now regarded as the standard by which all other gas engines must be judged.

Flattering as this condition is, we believe that the tribute has been fairly earned.

Ask Your Neighbor

Somewhere in your own vicinity there is a Field Type W in use, reducing the labor on the farm. Seek out its owner and ask his opinion of this wonderful engine. We are always content to abide by the verdict of the user. The thousands of men who own Field engines are our best salesman.

Send For Literature

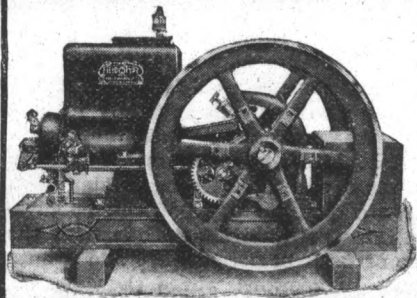
We have a booklet that tells all about the advantages of Field Type W engines, that we will be glad to send you. Write for it. Or there is probably a dealer in your town.

Field-Brundage Company,

Jackson, Mich. 1

Rayner Field, Gen. Mgr.

Note: We are Michigan distributors for Letz Feed Grinders. Send for catalogue.



SUPERIOR

BEET DRILLS

Made in two styles—Plain and Fertilizer—with shoe or double disc furrow openers, adjustable to plant 16 and 20 in. apart in the row, four rows at a time. Spacing bars are furnished with each drill, enabling the user to make the necessary spacing without the use of measuring instruments. These bars hold the furrow openers the exact distance apart, thus making the rows easy to cultivate.

The Superior Feed is especially adapted to beet seed and has wide range of quantity. Agitators furnished with every drill. No "bridging" of seed. Gauge wheels can be used as press wheels if desired. Assure even depth of planting.

Write today for the Superior Beet Drill folder. Read it and then go to your local dealer and insist on seeing the Superior Beet Drill.

THE AMERICAN SEEDING MACHINE CO.
INCORPORATED
SPRINGFIELD, OHIO, U.S.A.

\$10,000.00

BACKS THIS SAW. IT IS THE BEST AND CHEAPEST SAW MADE. As low as \$7.90

HERTZLER & ZOOK
Portable Wood SAW
is easy to operate. Only \$10 saw made to which ripping table can be added. Guaranteed 1 year. Money refunded if not satisfactory. Send for catalog. Hertzler & Zook Co. Box 23 Belleville, Pa.

KEEPING THE YOUNG FOLKS ON THE FARM.

A recent correspondent of the Michigan Farmer calls attention to the necessity of adopting the modern improvements on the farm as rapidly as possible if we are to keep the young folks in the country. These, as the writer names them, include centralized schools, paved roads, electric lights, etc., all of which are supposed to work for the betterment of rural life in general. I have no doubt but that some of these things are desirable—perhaps even necessary in certain cases, but I cannot see how they have been effective in keeping young men on the farm.

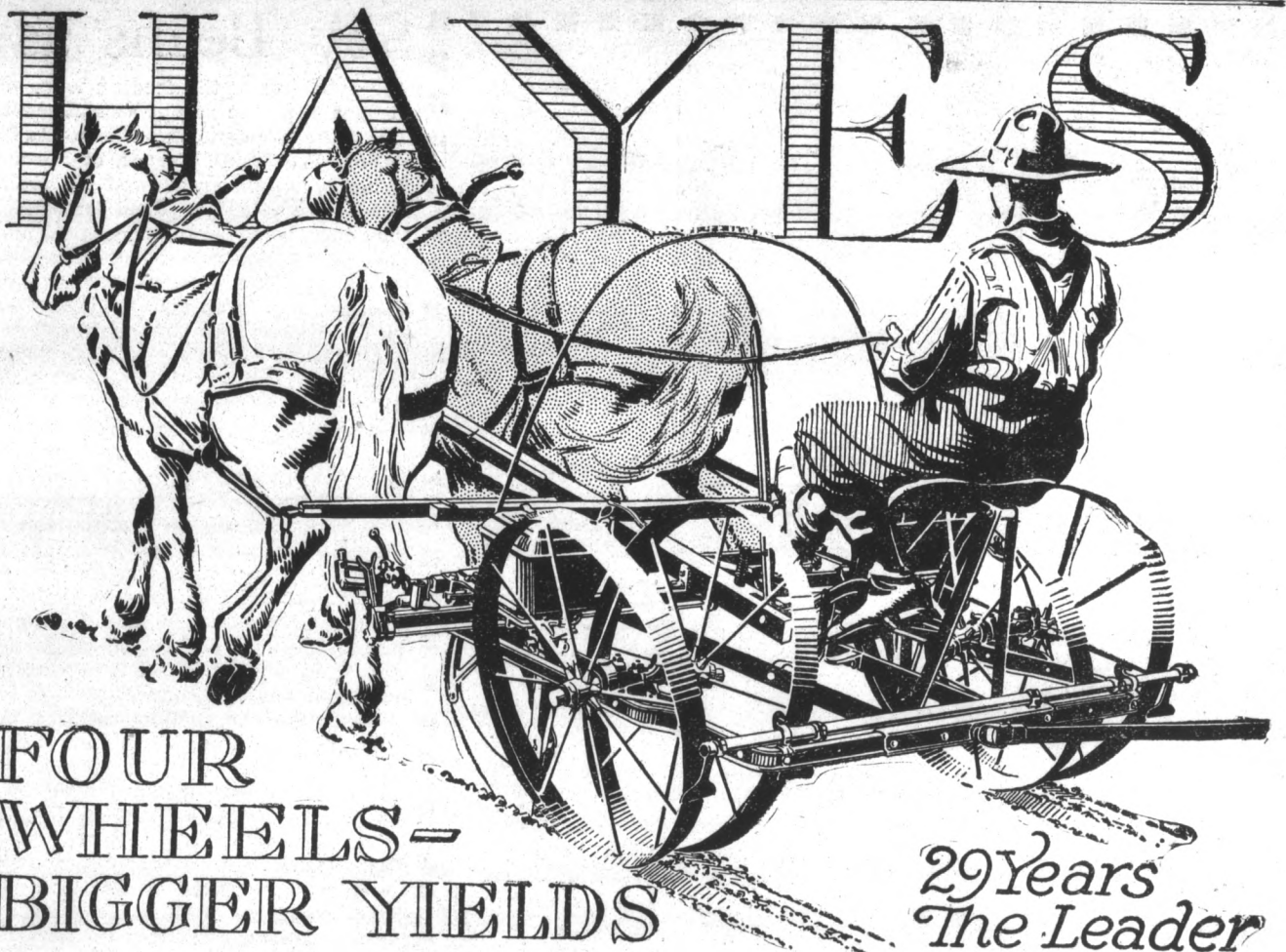
In our own community where centralized schools have been in existence for 20 years or more there is no appreciable change in the social status. Farm help is as scarce as anywhere; the young people hike to the city as fast as they can get jobs there, leaving their parents to shift for themselves as best they can. And the result is that the farms are soon sold or rented. The centralized school has to some extent raised the standard of education and has enabled a few young persons to gain the positions they seek, but so far as making farm life more popular is concerned it has been tried and found wanting. And I think the same may be said of other innovations that have been introduced on the farm. Whatever comfort or advantage there may be the modern equipment which is being installed in country homes it is not reflected in a smaller exodus of young people from the farm. This is not because they do not appreciate such things, but simply because the improvements lack the social element to be found in the cities.

If we are to make farm life acceptable for the masses, there are two things which need to be done: one is to improve the social features of the country and the other is to increase the profits of farming. As to the former there seems to be no practical solution at present, although with automobiles and paved roads the social activity has been enlarged, but still there is unrest and discontent, for when once the majority of country people get a taste of city life they are ready to pull up stakes and go thither.

It has been predicted by men of authority and intelligence that sometime the rural population would be grouped together as it is today in some parts of Europe, where the farmers live in small villages but have their business outside in cultivating the land. Even the American Indians adopted a similar plan. The early settlers found these copper colored natives living in wigwam villages along some lake or stream where they could hunt and fish, dance and hold war councils or indulge in any other social affair common to their primitive life. This fact offers a suggestion which, if wisely considered, may be of great value in solving the perplexing problems of the present.

In our opinion the social life of the country was better 40 or 50 years ago than it is now. Then the district school and country church were great factors in the community, largely due to a great number of talented men who were instrumental in their behalf. The rural population was somewhat greater than now. Debating and literary societies flourished. The people were more simple in their tastes; things that are now thought necessities were then considered as luxuries. It did not require a spectacularly furnished hall to give an entertainment, nor a fine equipage, or an expensive automobile for a young man to go sparking. There were social affairs galore and it mattered little whether they were embellished by splendor or shorn of every pretense of effect—they were a decided success. All that was needed was to get the folks together, and good cheer and plain democracy did the rest.

H. E. WHITE.



BARE spots caused by missing hills cut the corn crop short. Good seed, rich soil and favorable weather will not prevent this loss. Don't be blinded to this fact—figure it out yourself. How much have the bare spots cost you, year after year? Eliminate this waste! Make sure that every square foot of your corn fields will be working for you this season.

You can have these benefits of better planting and vastly better crops with the HAYES Four-Wheel Planter.

This planter is guaranteed. It must be all we claim and all you expect. 190,000 users verify that HAYES Four-Wheels regulate depth of planting to the fraction of an inch. Runners set back between the wheels within ten inches of the covering point. In going over ridges, dead furrows or uneven ground, the shoe rises and falls with the wheels and plants every kernel exactly the same depth. HAYES planted corn all comes up at the same time, allows earlier cultivation, an earlier harvest, a better quality and a bigger quantity.

HAYES Four-Wheels guarantee surer germination and quicker growth. Wheels pack the dirt from the sides to hold moisture and leave a ridge of loose soil on top, so that corn sprouts quickly

and comes up several days sooner. The ridge gives greater surface for sun's heat and prevents washouts in hilly fields. This method assists the budding sprout, protects its vitality and makes stronger and healthier stalks.

HAYES Four-Wheels cover where all ordinary open wheels fail. They open at the top and clean themselves. Guaranteed not to clog or carry the corn over even in wet and sticky soil. Insures a stand even in low, wet spots of field—allows earlier planting.

The HAYES Drop never fails. Simple, durable and most efficient. Fewer parts, less breakage and delays. Has no clutch to miss and give trouble. Never cracks or grinds the seed. Will drop accurately any sized or shaped kernel. No bare spots in HAYES planted fields. Increased yields soon pay for it. Corn growers are never disappointed with the HAYES NEVER FAIL DROP.

No matter how fast you drive, the HAYES always plants in perfect check. Cross rows straighter than the way you drive. Easiest handled planter. Also shortest coupled, making it the lightest draft, and turns in shortest space. For these reasons you can plant more acres a day with the HAYES and get your corn in earlier—an important factor in the success of the corn crop.

Thousands in use for years with practically no repair expense and every one giving time-saving, money-making ser-

vice. No complicated parts to get out of fix. Strong construction, practically exempt from breakage. No expensive and aggravating delays in the busy planting season. Easy and simple to operate and can be trusted to unskilled help.

The biggest source of time-waste and money-waste is the old worn out planter that is no longer dependable. Equally troublesome is the new planter full of complications, fads and fandangles. You cannot afford to test out other people's ideas. If the planter you used last year missed the hills, planted at an uneven depth, did not drop accurately, cut or cracked the kernels, scattered the seed, checked unevenly, clogged, or was a constant source of trouble by getting out of fix, you can save its cost many times over by buying a HAYES Four-Wheel.

Think these things over and start investigating now. Learn the overwhelming advantages in HAYES Four-Wheel construction. Ask any HAYES user.

Can be furnished with perfect working Fertilizer or Cow Pea Attachments, Stub Runners or Discs. **2000 DEALERS.** Ask your dealer or let us prove how this planter prevents corn field waste and increases corn yields. Don't make a mistake. Buy the planter that guarantees results.

Free book "AC" of Planter Facts tells all about the HAYES. Write for it—a postal or, if you wish, a letter asking any question on planting problems.

HAYES PUMP & PLANTER COMPANY, Galva, Illinois

HURST SPRAYERS

HAVE STOOD THE TEST OF 29 YEARS
That Proves the Quality

A GOOD sprayer is a profit-making investment, and if it's a Hurst you know the quality is the very best. Used by the United States Government, State Experiment Stations and thousands of the most progressive and successful growers.

You can make big money out of your orchard and field crops if you spray thoroughly. Protect your trees and crops from scale, blight, scab, rot and insects of all kinds, and double your profits. Our BIG FREE BOOK described below contains valuable information that every grower should have. It also shows our complete line of 32 different styles of sprayers.



Quality Sprayers for every purpose. Man Power and Horse Power for field and orchard. Barrel and Power Sprayers all give high pressure and produce vapor spray that kills scale, prevents blight and scab, and ridges your crops of all fungus and insect pests. Hurst Sprayers have brass ball valves and all the working parts that come in contact with the solution are made of brass. Cyclone agitation insures an even distribution of the spraying materials and best results. These sprayers are made by practical men who know the needs of the fruit grower and farmer and know what a sprayer should do. Our 29 years' experience in the manufacture of sprayers, together with the capacity of our large factory, enable us to build the very best sprayers at the very lowest prices. Get our big FREE BOOK—"Why, How and When to Spray"—Contains 74 illustrations of insect and fungus pests and gives remedy for each. Also shows 32 different styles of quality sprayers for every purpose. Write at Once.

OUR BIG FREE BOOK

"Why, How and When to Spray"

shows 74 illustrations of insect and fungus pests and gives remedy for each. It points the way to bigger, better crops and increased profit. Send coupon today for this valuable book and name of nearest dealer.

The H. L. Hurst Mfg. Co., 244 North St., Canton, Ohio

Send me your Catalog, Spraying Guide and information on the sprayer marked with an X below.

.....Man-Power Potato and Orchard Sprayer.

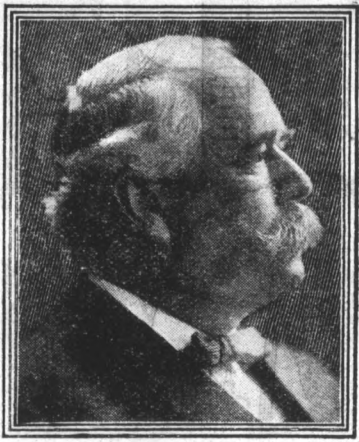
.....Horse-Power Potato and Orchard Sprayer.

.....Fitz-All Barrel Sprayer

.....Power Orchard Sprayer.

NAME

ADDRESS



"Velvet" For Dairymen

West Chester, Pa.

February 3rd, 1916.

Mr. Dairyman:

We have a wonderful new invention and I want to tell you about it myself. It is a source of new profit for dairymen without added expense which I call "velvet," for it is all profit.

Thirty-five years, longest in America, the Sharples plant has been devoted exclusively to the Cream Separator.

Its inventors produced the first cream over-flow bowl with its superior quality of smooth even cream, the first directly driven steam Separator, saving power, fuel and wear, the first and only tubular bowl with its doubled skimming force and efficiency and extreme simplicity, the bottom feed, the hanging tubular bowl, all making for convenience, durability, economy of maintenance and operation.

Now we have made another great invention, greatest of all as a profit producer, though so simple that it seems we should have had it long ago.

Thousands of carefully made observations by competent investigators, government officials and scientific men have proven beyond question that 95% of all the hand driven cream separators in America are turned below regulation speed, below the speed marked on the handle, a great part of the time and every hand separator is under-speeded some of the time.

No matter which separator, whose make, or what it is capable of doing when turned at full speed, it will lose cream and a lot of it, when the speed is allowed to drop even for a moment, and with the cream goes the profit.

THE NEW SHARPLES SUCTION FEED

Separator will stop this loss, aggregating millions of dollars annually to America's dairymen—stop it at once and forever.

No matter if you turn this Separator at widely varying speeds, fast or slow, it skims equally clean—no cream will be lost. The bowl *drinks its milk supply as it needs it*, always in exact proportion to the separating force within the bowl. At slower speeds it drinks less, at faster speeds more, but always just the right amount for *clean* skimming.

A thousand of these machines are in regular daily use; we demonstrated them to a finish before announcing them; it is the Sharples way—*absolute perfection before sale*.

The Sharples Suction Feed Separator has several very important advantages in addition to its certainty of clean skimming at any speed. The varying of speed does not change the thickness of cream; fast turning increases the capacity much above normal, just as you whip up a horse, when in a hurry. The supply can be but knee high and the machine throughout is simpler and better than ever.

We sell our Separators now, as always, subject to free trial by the buyer; but a stronger guarantee than any trial is the unbroken record of the growth of this business from the small beginning of 35 years ago to its immense proportions of to-day. It could not grow so except by the unbroken rule of complete satisfaction to customers.

Lack of space prevents explaining more fully; but send today for new book, "Velvet for Dairymen," that tells all about this money-saving invention.

Sincerely yours,

O. M. Sharples
President.

The Sharples Separator Co.

Also Makers of Mechanical Milkers and Gasoline Engines

West Chester - - - Pennsylvania
Chicago San Francisco Toronto Portland



COATS

We custom tan and dress and make up a coat from a large beaver hide or horse hide for \$10 complete job. Send for our illustrated catalog today that will give you full information on making up all kinds of fur coat.

W. W. WEAVER,
Custom Tanner,
Reading, Michigan.

9 1/2 CORDS IN 10 HOURS



BY ONE MAN. It's KING OF THE WOODS. Saves money and backache. Send for FREE catalog No. B44 showing low price and LATEST IMPROVEMENTS. First order gets agency. Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

Soy Beans as a Farm Crop

In speaking of the feeding value of soy beans at the recent annual meeting of the Michigan Experiment Association, Prof. J. D. Harper, of Purdue University, Indiana, showed the grain to be more valuable, pound for pound, than corn, wheat bran, or cowpeas and just a little less valuable than cottonseed meal. The digestible nutrients of the forage show up better than any of our other hays, including alfalfa. These comparisons indicate the high standing of soy beans among those who have fed it to live stock.

Where soy beans have not previously been grown and the micro-organisms which produce nodules on the roots of these plants are not present, it is important to see that the soil is inoculated with the particular germs required. Careful work along his line shows that areas which were properly inoculated produced plants having a higher protein content than plants grown on similar soils but lacking inoculation. In this connection it is important that the medium carrying the bacteria be put on just before a rain to be carried down and covered up by the water, or else drilled into the land so that the germs will not be destroyed by the sun's rays.

In seeding, from a bushel to one and one-quarter bushels of seed are usually sown. As with other grains, a smaller amount of seed is needed when drilled than when sown broadcast. The practice is when drilling to stop up alternate holes in the grain drill, thus making the rows twice as wide as for the cereals. If the crop is being grown for seed, the practice is to place the rows three feet apart and cultivate the same as we do the field bean.

As with other legumes, the use of lime is to be recommended. It insures a good catch, and usually adds several bushels to the yield of seed and increases the quantity of forage grown. Prof. Harper advised the use of ground lime, the finer it is pulverized, the better.

Different methods of harvesting are in vogue. In some sections the bean puller is used to advantage and the rows are harvested and cared for very much the same as our regular bean crop. Others use the mower and buncher and care for the plant as we do the clover crop. Still others make use of the binder, rows are being set in open shocks and either thresh out of field or stack and thresh when convenient. The bean huller may be used for separating the beans from the pod, or a regular thresher with the speed of the cylinder reduced, may be employed. The yield of seed varies from nine to thirty bushels to the acre in Indiana.

After the seed has been threshed the straw makes a valuable forage for the hogs, cattle and sheep. It perhaps has about the same digestible nutrients that bean pods have, the conditions under which the plant is harvested having much to do with the quality of this straw for feeding purposes.

Accounts have been kept on the production of soy bean seed and these show an average cost of production of \$11.47 per acre. The seed produced showed an average farm value of \$36.32. These figures do not take into consideration the forage value of the straw after the seeds have been removed.

Tests have proven the value of soy beans for turning hogs in when the plant has attained its maturity. In one experiment 823 pounds of pork were produced from an acre of the crop. Another farmer kept fifteen pigs on one and one-quarter acres and secured a gain of 534 pounds per acre. In a third test where 99 hogs were kept on fifteen acres 961 pounds of pork were produced for each acre of the crop, and the hogs made an average increase of two pounds per day.

Dairymen have found soy beans an excellent forage to mix with corn silage. In one instance a farmer who

had soy beans mixed with his corn filled his entire silo with the mixed forage, except about four feet in the center which was occupied by clear corn silage. When feeding he found upon reaching the clear corn product that the cows fell off considerably in their milk flow, but regained to their normal amount when getting back to the mixed silage.

COST OF HUSKING AND SHREDDING CORN.

I noted in your issue of January 8, 1916, an inquiry regarding the cost of shredding 40 acres of corn to be hauled three-quarters of a mile to the machine. I also took particular notice of three of the conditions in your reply: First, who bossed the job; second, the capacity of the machine, and third, the kind of men that run the machine.

This reminds me of my own job in the fall of 1914. The following were my expenses per day: I had five teams hauling corn from the field three-quarters of a mile. Two of these teams were my own. I had one man and team hired for \$2.50 per day. My teamsters were hired by the month; three men got \$20 per month and one man \$25 per month and their board. My other men were all hired by the day. I had three men in the field to load, one man at the machine to help the teamsters unload the corn, two men to look after the corn and unload same, pick off the husks and silk and pick out seed corn. Those men exchanged work; one would look after the corn at the husker while the other was unloading the corn. I had one man haul water and haul the corn from the shredder to the crib, about ten rods distant. This team was my own. There was one engineer, one man to help look after shredder and oil machine, etc. The last man I speak of was the boss paymaster of all this work—that was myself. Now let me go back and figure up those men's time for three days:

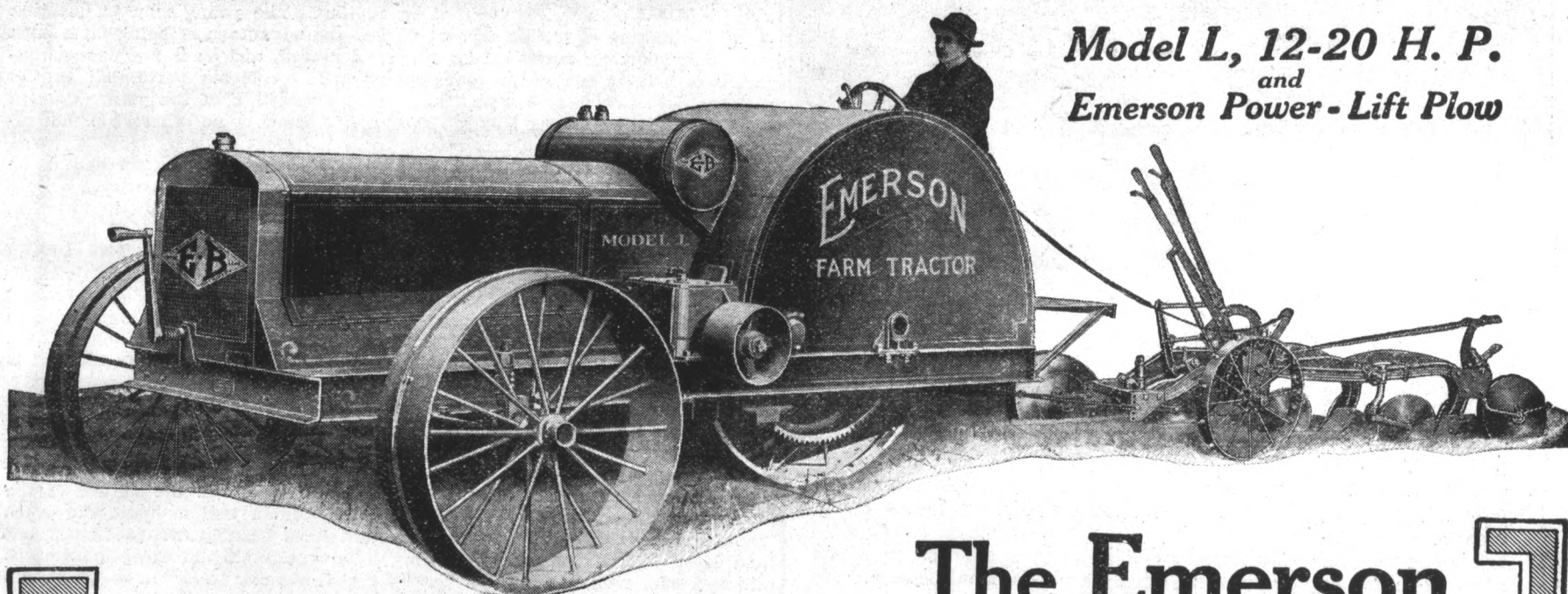
Three men in field, 3 days@	\$1.50	\$13.50
One man and team, 3 days@	\$2.50	7.50
Three men hauling corn, 3 days	@77c	6.93
One man hauling corn, 3 days	@\$1	3.00
One man hauling water, 3 days	@\$1	3.00
One man shoveling corn, 3 days	@\$1.50	4.50
One man picking out seed corn, 3 days@	\$1.50	4.50
One man assisting teamster at machine, 3 days@	\$1.50	4.50
One man assisting feeder at machine, 3 days@	\$1.50	4.50
One engineer, 3 days@	\$2.00	6.00
Total		\$57.93

But this does not answer the question, for we have not figured up the board and wood. Well, I will deduct the engineer's wages of \$6.00, the water hauler, \$3.00, and the assistant feeder at \$4.50, this makes \$13.50 we will deduct from \$57.93, leaving \$44.43. Plus \$2.00 per hour for 30 hours, or \$60. This we have got to allow this boss we have been speaking about for the use of his machine, labor and other expenses. This figures up to \$104.45, plus \$33.40 for board and lodging or \$137.85.

I will say that my shredder is a ten-roll self-feeder, Port Huron, and my engine is a 12 h. p. Huber, the kind of an engine for me where you can burn old rails or boards, in fact, anything in the way of trash and rubbish from a foot long to eight feet long. You can see I did not bring in any bill for wood; \$137.85 would be my reply, Mr. Editor, to your question for shredding this 40 acres of corn. This is \$3.45 per acre, or ten cents per shock 12 hills square, or seven cents per bushel.

It is also understood that in different localities and states wages vary, but this is the average here in northern Michigan.

Gd. Traverse Co. C. L. PORTER.



Model L, 12-20 H. P.
and
Emerson Power-Lift Plow

The Emerson

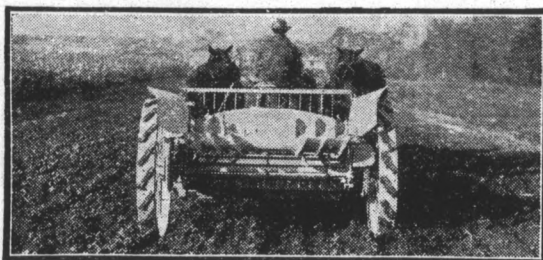
An Ideal One-Man Tractor for Small or Large Farms

THE EMERSON Model L Farm Tractor establishes a new standard for simplicity of design, construction and operation. Can be easily run by anyone. In the Emerson you get the full benefit of our extensive experience in tractor manufacture, and our thorough knowledge of farming requirements.



Emerson Foot-Lift Plow

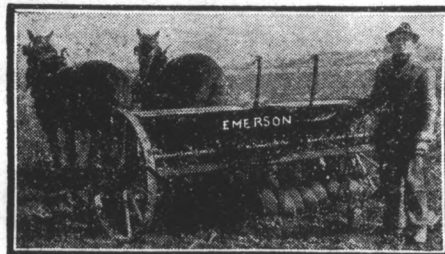
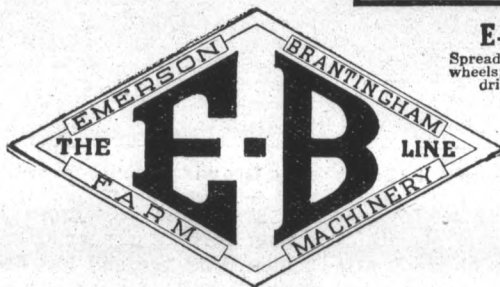
Is lighter draft, easier to handle, equipped with Quick-Detachable Shares, removable in three seconds and replaced in five seconds with no tools—simply the hands.



E-B Manure Spreader

Spreads evenly 6 inches wider than the wheels; always a clean track; apron drive, worm gear; light draft; low down; turns short; most durable all-steel spreader on the market.

12 horsepower on draw-bar—20 on belt. 4 cylinders—2 speeds. Perfect lubrication and thorough protection from dust for all working parts. Cut steel gears run in dust-proof oil bath. Hyatt Roller Bearings. Light weight—economical in upkeep.



E-B Grain Drill

Combination double run and fluted feed; extension spring pressure; closed delivery opener; insures accurate deposit of seed and always in bottom of furrow, resulting in even germination.

*Write Today
for
Free Folder
Illustrated in
Colors*

The E-B Line

FOR over sixty years the E-B line of farm implements has been standard. This long experience, and the high mark which we set for the quality of our products, mean much to the farmer of today.

When he selects implements to save money, lighten labor or speed up work on the farm, he can turn to those bearing the E-B trade-mark with every assurance of unusual satisfaction.

*We will be glad to send you literature on
E-B products. Fill in coupon, mail today*

Emerson-Brantingham Implement Co., Inc.

Good Farm Machinery Established 1852

781 So. Iron Street Rockford, Illinois, U. S. A.



Newton Wagon Light running and durable. Has many exclusive features, such as drop hounds, seamless skeins, angle steel grain cleat, special reinforced box bottom, etc.

Emerson-Brantingham Implement Company, Inc.
781 So. Iron Street, Rockford, Illinois

Please send literature on articles checked.

- | | | |
|---|---|---|
| ☐ Tractor Model L | ☐ Drills | ☐ Listers |
| ☐ Tractor Big Four | ☐ Planters | ☐ Manure Spreaders |
| ☐ Plows | ☐ Mowers | ☐ Wagons |
| ☐ Harrows | ☐ Hay Rakes | ☐ Buggies |
| ☐ Cultivators | ☐ Hay Loaders | ☐ Auto Trailers |
| ☐ Gas Engines | ☐ Hay Presses | ☐ Road Rollers |
| ☐ Saw Mills | ☐ Clover Hullers | ☐ Steam Traction Engines |
| ☐ Threshers | ☐ Corn Shellers | |

Name.....

Town.....

R. F. D. Route..... State.....



Budding requires great skill and constant supervision

Kelly Trees are budded by men of years of experience, under the personal supervision of one of the Kelly Bros.

Orchard and Garden Trees, Small Fruits, Ornamentals

thousands of trees—all the standard varieties as well as a few tested novelties—offered you at very low prices. A reputation gained by 36 years of honest and accurate dealing backs every tree we sell.

Grown in the heart of a nursery district, our splendid specimens are well rooted and acclimated, sturdy and free from disease. As one of the five Kelly Brothers personally directs the work of a department we know the pedigree of every tree and its history from the seedling to the freight car.

Personal Service and Our Binding Guarantee has been the secret of the Kelly Brothers' success. From the time your order is received to the minute it is shipped—all through the digging, packing, and shipping—some member of the firm is always in close touch with your trees. That explains how we can guarantee our trees to be true to name and exactly as represented in our Catalogue.

Kelly Nurseries

are the last word on nursery efficiency. They are run on a scientific basis, and up-to-date tools and office and shipping equipment have enabled us to greatly lower the cost of producing our stock. Let us send you the only salesman we employ—our big, free, 1916 Catalog. It describes our stock and explains our prices. A postal now will bring it by return mail.

KELLY BROS. WHOLESALE NURSERIES
117 Main Street Dansville, N. Y.
You'll Never Regret Planting Kelly Trees



Strawberries—an Educational Aid

A YOUNG man writes me that he is thinking of setting an acre to strawberries in the spring as a means of helping out with a four-year college course which he has just taken up. His vacation begins May 25, and he wants to know if the plants may be set as late as that; and also what I think of the plan.

Yes, the plants may be set as late as the last of May, but, of course, not with the same results as if set the last of April or the first of May. More perfectly filled in rows of larger, stronger plants will be secured by setting early, which means increased yield and higher quality. It will not be possible in a case like this to do all the work one's self and it might be best to hire the fitting of the ground and setting done. However, setting plants right is very important, requiring painstaking thoroughness; hence, if skilled, competent help was not to be had, I should prefer to do the work in person later in the season, taking my chances with results.

Fertilizing Necessary in Growing Profitable Crop.

Assuming that the ground is only of average fertility, it will require a

recting. The young man in question has the advantage of being farm born and reared, and so is not unacquainted with problems pertaining to the proper working of the plan. Certain it is, I know of no other crop that offers so great returns from a given area one that may be worked in so advantageously to the purpose.

Emmet Co. N. M. EDGERTON.

BEFORE PLANTING THE ORCHARD.

Undoubtedly there are many readers of this paper who are planning to set out an orchard as soon as the soil is in condition to work, but have not given the matter of soil preparation a great amount of thought. The amount of care necessary to get the area in the desired condition will, of course, depend largely on the nature of the soil itself as well as upon the crops that have been grown previously but it is usually only in exceptional cases that the young trees can be set out on any piece of land without regard for its previous treatment and still get the best growth the very first season. On the ordinary farm where the us-



Intensive Methods in Strawberry Growing Insure Profit.

heavy application of fertilizer to make a highly profitable crop, something like 1,000 pounds of a high-grade article. This, together with thoroughness in preparation and maintenance, tillage, and the most efficient up-to-date methods of culture will insure reasonably gratifying returns.

The one undertaking a plan of this sort will find it highly profitable to subscribe for a live paper treating of agriculture, and then study its pages carefully; not so much for the knowledge to be acquired which is of course, very important, but to get in touch with the "live wire," so to speak. Live interest and enthusiasm are essential as knowledge. It requires no great effort or skill to grow an ordinary patch of strawberries. To grow a highly worth-while patch requires both knowledge and plenty of painstaking. This is where interest and enthusiasm gets in its work.

Increasing Productivity.

If this plan is to be made use of throughout the four-year period, it will be advantageous to make provision towards increasing the productivity of the plots to be used in consecutive settings. This may be done by plowing down soiling crops, such as vetch, or peas. Commercial fertilizer may be used with these crops both to increase their growth and to add to the chemical elements of fertility.

As to just how practical this plan may be it is not possible to foretell with exactness. So much depends upon the individuality of the person di-

ual grain and hay crops have been grown in rotation year after year, it is seldom that the soil has been plowed deep enough to justify the setting of young trees without first planting a hoed crop or perhaps sowing to some legume and subsequently plowing under. If necessary, spend two or three years in preparing for the orchard for it will certainly pay, considering the life of the trees. Should the fertility not be too low a crop of potatoes is an excellent one to precede the planting of the orchard, for in the cultivation that the crop demands the weeds are being eliminated to a certain extent and at the same time the soil structure is being favorably modified. Where the supply of organic matter is low a clover crop plowed under the fall before planting will prove quite a factor in enabling the trees to get a good start.

It is a more or less common belief that an orchard will grow on the poorest hillside on the farm and yield well even though other crops have failed to return a profit on the same area. It is true that the trees will usually grow but the question of whether it is a good plan to follow brings in other factors that need to be considered. No more care is required and usually not as much to bring the trees to bearing age on good land than on the poor clay hillsides and considering that greater returns per acre are received from fruit that is properly cared for than from other farm crops, would it

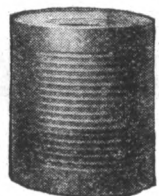
(Continued on page 162).

Don't Pay Freight on Water

Spray with Niagara Soluble Sulphur Compound

In Powder Form

This scientific Powdered Spray Material assumes clean, top-of-the-market fruit.



Standard 100 lb. Drum

Niagara Soluble Sulphur Compound. This 100 pounds of powder material is clean, high quality fruit and at the same time equivalent to 60 gallons of liquid. Leakage impossible.

Dissolves Instantly in Cold or Hot Water Consider This Comparison

This 100 Pound drum of Niagara Soluble Sulphur Compound is equivalent to a 600 pound barrel (50 gal) of lime and sulphur solution. No leakage—No crystallization—Keeps indefinitely anywhere.

Niagara Soluble Sulphur Compound, after 5 years of test, is declared by thousands of fruit growers to be superior to the old fashioned lime and sulphur solution.

More Economical—Efficient—Convenient—Practical

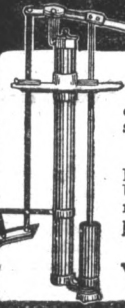
Write today for booklets telling how to grow fruit material is clean, high quality fruit and at the same time equivalent to 60 reduce your spray bills at least 25%.

NIAGARA SPRAYER COMPANY
96 Main St., Middleport, N. Y.



Standard 600 lb. Barrel

Write to the Men Who Know



There is a great difference in spray pumps and spraying apparatus. One kind is made by practical orchardists and has been improved through over 20 years of orchard success. Write a letter or postcard to Morrill & Morley Mfg. Co. Find out about

Eclipse Spray Pumps

In use in more successful orchards than all other makes. Used by U. S. Department of Agriculture. Find out what Eclipse offers in more profits for orchards, vineyards or potato fields. Address Morrill & Morley Mfg. Co., Box 6, Benton Harbor, Mich.

Send for Free Catalogue

We Have a Story for You

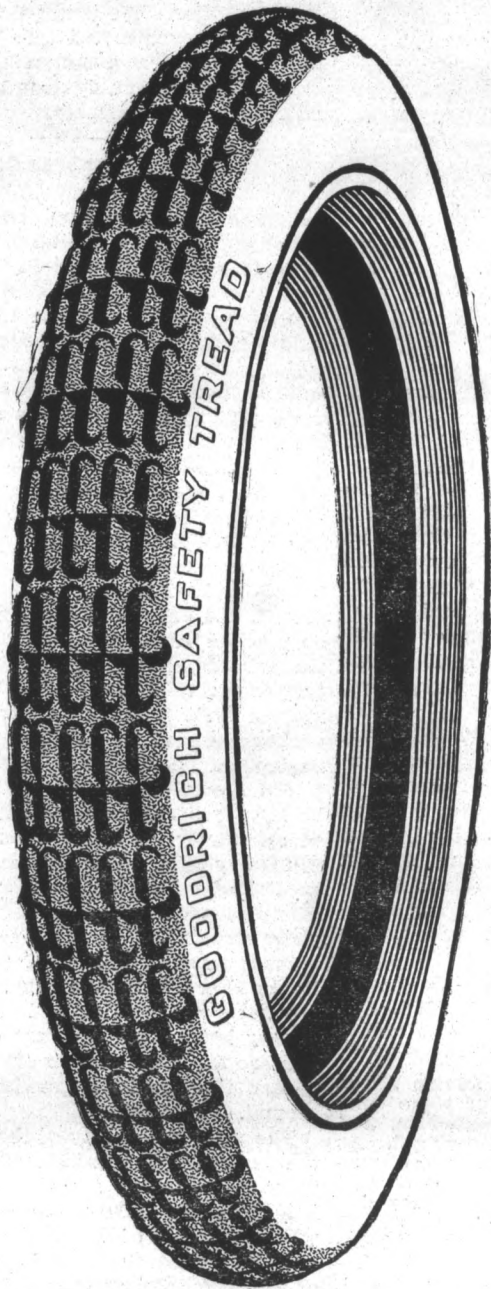
TREES FROM KALAMAZOO DIRECT TO YOU

At Wholesale Prices. Spring requirements should be considered now. Send today for Free Handsome Catalogue and Valuable Coupon entitling you to 12 Everbearing Raspberry Plants, 1 Delicious Apple Tree, 1 Famous Stearns Peach Tree without cost. Don't Delay.

CELERY CITY NURSERIES, Box 122, KALAMAZOO, MICHIGAN.

Mention the Michigan Farmer when writing to advertisers.

No Tires are "*larger*,"— taken Type for Type,—than —GOODRICH Black-Treads



No Tires are "*larger*,"—taken
Type for Type,—
—than GOODRICH—

**Black—
—Treads**

SIZE for Size, and Type for Type, *Goodrich* Tires are as large as the *largest* put out by *any* Maker, and **WILL BE SO MAINTAINED.**

This means *larger* than corresponding Sizes and Types of many other Tires for which even *higher* prices are asked.

It means, too, the *most generously made* FABRIC Tires on the Market, at *any* price.

Manufactured by the largest Rubber Factory in America, with a 47 year Experience in Rubber-working, and a Record for **DEPENDABILITY** which makes the above statements worthy of prompt acceptance.

Made from the new "*Barefoot Rubber*," which gives its maximum *Traction* with minimum *Friction*,—with resilience, liveliness and long-life to Tires.

PRICED on that "*Fair-List*" basis initiated Jan. 1st, 1915, by the B. F. Goodrich Co., which saved more than \$25,000,000 last year to Tire-Users, through its propaganda against Padded Price-Lists.

Priced so *reasonably* low that Competitors, whose products are not comparable, *claim* superiority on the mere strength of their *Higher Prices* (and the *Larger Profits* they demand from the Tire-User and Dealer).

Goodrich Prices are based on what it *costs the largest*, and *longest experienced*, Rubber Factory to *manufacture Tires*, as **ONE** of the 269 lines of Goodrich Rubber Goods for which it buys Crude Rubber, and over which its Overhead Expenses are divided.

Good Business Men should know, from *this*, why Goodrich "*Barefoot*" Tires *can* be (as they are) the *best* Tires on the Market **AT ANY PRICE**,—though quoted at the moderate "*Fair-List*" figures.

THE B. F. GOODRICH CO.
Akron, Ohio

GOODRICH— —"**BAREFOOT**" TIRES

FREE "Ask Pratt"

Here's a book of daily needs you should keep handy. It lists the best of every thing for the orchardist and truck grower. Standard spray materials, harrows, cultivators, graders, pickers, packing boxes, etc. If there's anything needed, "ask Pratt." You know him—he's the man who makes "Salecide—the tree saver." Everything else he sells is just as good.

Our Service Department
is under his direct supervision and he is always ready to advise, from his long experience, just what implement, spray material, etc., you need. Ask questions. But send for the book today.

B. G. PRATT COMPANY
Dept. 22 50 Church St., New York

SPRAY We Make Sprayers For Every Need

Bucket, Barrel, Knapsack, Potato Sprayers, High-Powered Gasoline Engine Orchard Rigs, etc. Tell us your wants. We will supply the sprayer suited to your work and give you accurate spraying information.

This Empire King
(Mounted Barrel Sprayer)
leads everything of its kind. Throws fine mist spray with strong force. No clogging. Strainers are brushed and kept clean and liquid stirred automatically. For catalog, spraying formula and directions address:

FIELD FORCE PUMP CO.
Dept. 1, Elmira, N. Y.

Green's Trees
AT HALF AGENTS' PRICES

Limited list of selected varieties of Apple, Peach, Plum, Pear, Quince, Cherry Trees, Currants, Grape Vines, Ornamental Trees, Roses, Plants, etc. Highest grade and true to name. Best New Fruits. Free catalog gives valuable advice. 30 Years with Fruits and Flowers' or C. A. Green's Book on Canning Fruit, free.

Green's Nursery Co.
29 Wall St., Rochester, N. Y.

RHODES DOUBLE OUT PRUNING SHEAR

Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

RHODES MFG. CO.
615 S. Division Ave. GRAND RAPIDS, MICH.

How to Grow Fruit Free

Tells what to plant in your locality, how to plant, trim and spray. Describes and pictures our immense stock of Apples, Cherries, Peaches, Pears, small fruits, etc. All "Wood Quality" stock. Also our big stock of ornamental trees, shrubs, and plants. We sell direct only—at about half agents' prices. We will send our book absolutely free. Not the biggest book, but one you can depend on. Write today—return mail brings it.

Woodlawn Nurseries,
Allen L. Wood, 575 Culver Road, Rochester, N. Y.

The "Berlin Quart"
That secures highest prices for your fruit. Write for 1916 catalog showing our complete line and secure your baskets and crates at WINTER DISCOUNTS.

The Berlin Fruit Box Co.
Berlin Heights, Ohio.

MALONEY TREES

Have been for years advertised in the Farm Papers which guarantee their advertising. If the trees had not made good this advertisement would not appear. We invite you to visit our Nursery of 400 acres, the largest in New York State, or send for our big free wholesale Catalogue illustrated in colors of Fruit, Nut, Ornamental Trees, A-1 Maloney Quality sold at a cost plus one profit only. Write today. Maloney Bros. & Wells Co., 99 Main St., Danville, N. Y., Danville's Pioneer Wholesale Nurseries.

Small Fruit Plants

Guaranteed in every way. Prices reasonable. Fine, large, healthy plants guaranteed to be true to name and to reach you in good growing condition. If you want to get our bargains write at once for catalog.

Keith Bros. Nursery, Box 103, Sawyer, Mich.

PEACH & APPLE TREES 2c & up

Pear, Plum, Cherry, Small Fruits, Strawberry Vines, Nuts, etc. GENUINE HALF BUDDED from Bearing J. H. HALE TREES, Genuine Delicious Apples. Cat. Free.

TENN. NURSERY CO. Box 44 Cleveland, Tenn.

BIG MONEY IN FRUIT

Replant your orchard. Plant your roadside. Hardy fruit trees, vines and shrubs at low **WHOLESALE PRICES NOW** Direct to you from our nurseries. Big 4-color, new, different, original fruit book and planting guide FREE.

GALLOWAY BROS. & CO.
Dept. 186 Waterloo, Iowa

for better fruit

DEMING SPRAYERS

From a User of this Pump
"It is the best little spray-pump I ever saw. I spray or whitewash my hen-houses in a few minutes. Mites and Lice cannot stay where you use a Deming. I also spray every limb of a good-sized orchard quickly. On fruit trees and chickens it saves its price twice a year."

Make 1916 show bigger profits.

If you have never sprayed, start spraying now. If you spray, be sure your equipment and methods are right.

Put your particular problem up to men who have studied spraying for over 15 years. Tell them the number and kind of trees you own—ask them to advise you just the right spray-pump. Ask them to tell you the other profitable use for sprayers.

32 Page Catalog Free

The coupon will bring this illustrated hand book of 28 spraying rigs. A letter will secure the advice you need.



THE DEMING CO.
174 Depot Street
Salem, OHIO

Please send New 1916 Catalog to
Name _____
Address _____
State _____ (174)

Don't Sow CLOVER

until you have received your copy of the latest book on Alfalfa and Clover prepared by four of the foremost Agricultural Authorities in America.

Here are a few chapters showing you the wealth of valuable information necessary to grow this money crop:

1. Clover, the foundation of permanent agriculture.
2. The proper time to sow it.
3. How to sow it and at what depth.
4. The value of sowing in rows 4 inches apart.

Results from hundreds of Michigan Farmer users over a period of five years have conclusively proven that seeds drilled at a regulated depth 4 inches apart with Excelsior Clover Drills produced excellent yields.

Seed this year is very costly. You can save many dollars by sowing your seed with an Excelsior Drill and save enough seed in 30 acres to have the drill free.

JOE WING said the Excelsior 4-inch will revolutionize agriculture in America.

A. B. LYMAN, Introducer of Grimm Alfalfa, says: "The Excelsior will more than pay for itself in one season in seed saved."

CHAS. METCALF, of San Angelo, Tex., got a better stand with 10 lbs. of seed with his 3 Excelsior Drills than when he broadcast 20 lbs. the old way.

Don't scatter your costly seed on top of the ground to birds, wind and rain. Profit by experience of other reliable farmers and use an Excelsior 4-inch Drill on your farm and get better results.

Reduce your seed bill one-half. Be sure of a stand of clover.

You will get these results by learning all about Clovers and Alfalfa, and what the results are when these seeds are drilled with an Excelsior.

Write for this book, which regularly sells for 50c. It will be mailed to you absolutely free by mentioning The Michigan Farmer.

EXCELSIOR DRILL COMPANY,
SPRINGFIELD, OHIO

(Continued from page 160).

not be better to give the trees an equal or even better chance? However, if they are to be placed on soil that is not as fertile as it should be, then by all means manure it rather heavily before planting, preferably with ordinary stable manure if obtainable, otherwise with commercial fertilizers as a supplement to a green manure crop.

It is not my aim to discourage the planting of an orchard this spring, for the present prices of good fruit seems to insure a profit from the business at least for several years to come, but I do want to emphasize the necessity of getting the soil in proper condition to allow a good growth the first year. A stunted tree can never catch up with the one that started a vigorous growth the first season regardless of how much care is given it. While it is possible to manure and cultivate after the orchard has been set and thus partially overcome bad conditions such a method is certainly not to be recommended unless the trees have already been set. Select a well drained slope somewhere near the house and then spend a year or more, if necessary, in an endeavor to make conditions as nearly ideal as possible. Then order the trees and begin the operations of planting.

F. E. ALLISON.

WELL-KNOWN FRUIT GROWER DIES.

Wm. King Munson, 72 years old, died January 22 at his home on Knapp Avenue, just outside of Grand Rapids. He leaves two daughters and a son, J. Pomeroy, former president of the Michigan State Horticultural Society.

Mr. Munson was born in Onondaga County, New York. His experience in the nurseries of that state, especially in grape growing, was extended before coming to Michigan in 1870 to take charge of a nursery at Lowell in this county. Since that time for many years with his son he has owned and operated a fruit farm and large vineyard near Grand Rapids. He planted one of the first commercial vineyards in this part of the state in 1878 and has been very successful. The King grape originated at Vincroft, the Munson farm. Mr. Munson was the first secretary of the Grand Rapids Fruit Growers' Association and he was widely known in fruit circles.

TROUBLE DEPARTMENT.

Mushroom Growing.

Please give me some advice about mushroom growing, as for some time I have been much interested in, and would like to start a bed for trial. As I have to build a house for that purpose I don't dare to run the risk and expense without knowing if they can be raised and sold with profit in the markets in large cities, if a local market can't be found.

J. A. J.

Mushroom growing, like all agricultural specialties, requires special knowledge and special markets to make it a success. It is one of the lines of which we hear of great profits being made, but in actual experience these profits often fail to materialize.

Mushrooms are best grown in a shady place. If grown indoors such places as barns, cellars, pits, green-houses and regular mushroom houses are the best. The usual practice in making a mushroom bed is to start preparing the manure in September. This preparation consists of heaping up fresh horse manure, wetting it thoroughly and allowing it to heat. When it begins to steam, the pile should be turned over and thoroughly mixed and then tramped down solid. When it begins to heat again the turning and tramping should be repeated, and if the manure gets at all dry, water should be added. This process should be repeated until the heat in the manure is not apt to rise above 130 degrees F. To lessen the tendency toward intense heating, at the second or third turning, about one-fourth of its bulk of loam may be added.

Ordinarily mushroom beds are made

about ten inches deep. In the bottom a layer of fresh, moist manure is trampled down until it consists of about half the depth of the bed, after which sufficient prepared manure should be put on and firmly packed to make the required depth. When the heat of the bed has fallen to about 90 degrees, the spawn should be put in. The temperature of the room in which the bed is, should be kept at from 55 to 60 degrees. For best results, loose straw, hay or some old matting should be placed over the beds to keep them moist. If the atmosphere in the room is dry, the floor and walls should be sprinkled, and the bed should also be sprinkled when it gets dry.

Mushrooms can be marketed in almost any large city. In Chicago they are quoted all the way from 15 to 40 cents per pound; the report is that the market is rather dull and it is hard to get rid of them. We doubt very much whether you would find this business profitable from a commercial standpoint unless you can develop a special market for your products.

GROWING MUSKMELONS.

Muskmelons should not be planted in the open ground until the weather is warm and the ground in favorable condition, as the seed is liable to rot in cold, wet earth. Plant in hills from six to eight feet apart, according to variety. Melons do best in a rather light warm, sandy soil which should be made very rich with well decayed manure, two or three spadefull worked into each hill being advisable.

A dozen or more seeds may be planted in each hill and all but three or four of the plants removed when the bugs have deserted them. As soon as the plants have made a foot or more of growth the ends of the shoots should be pinched back to induce the formation of side shoots and the early setting of fruit. Vines pinched back will mature fruit from one to two weeks earlier than when this precaution is neglected.

The ground about the vines should be kept free from weeds and cultivated constantly until the vines begin to run freely and in working among them care must be taken that they are not trampled upon. One ounce of seed will plant sixty hills.

Such small varieties of melons as Rocky Ford and the like, may be grown on wire netting and in this way occupy but a small amount of ground and are far more easy to cultivate and gather than melons growing on the ground.

The principal enemy of the melon is the squash bug which attacks the plant in its early stage and may be held in check by spraying the plants with arsenate of lead. Better still, would be a cover made from a circle of wire window screen, slashed nearly to the center on opposite sides and the slits folded over each other to produce a tent-shaped cover, these being placed over the hills and a little earth banked about their base to hold them in position. These may be flattened out and stored away when no longer needed and be serviceable for several years.

IDA D. BENNETT.

A MEETING FRUIT GROWERS SHOULD ATTEND.

The mid-winter meeting of the Michigan State Horticultural Society will be held at Pontiac, February 15-16, in conjunction with the Oakland County Horticultural Society. The meeting bids fair to be the best mid-winter meeting ever held, as the program contains speakers prominent in Michigan horticulture, and subjects which are of immediate interest to all fruit growers. The Oakland County Society, which was the host at the most successful summer meeting the state society ever held, is determined to have this meeting touch the high mark in mid-winter meetings and they are going to succeed. If you are at all interested in fruit you will miss something worth while if you do not attend. Remember the place and the time, Pontiac, February 15-16.

REO



This Is Reo Year

EVERYTHING POINTS to that—everything indicates not only that the coming year will be the greatest Reo has ever known, but that the Reo policy and product will exert a greater influence on the automobile industry than ever before.

ALREADY YOU'VE NOTICED the tendency to emulate Reo in many features of design and construction—the "Sheerline" body of the New Reo Six is the acknowledged fashion plate, while Reo cantilever springs, Reo control and countless other mechanical features are being imitated as nearly as may be.

BUT AS THE YEAR PASSES you'll see more evidence of Reo influence on the trade generally.

FOR EXAMPLE, there's a greater divergence of engineering ideas this year than ever before. There's more types of motors and of cars—and no one dominant type.

OUT OF THAT CONFUSION—that babel of tongues arguing about and disputing over countless new and radical ideas—will come the decision that most or all of them are only engineering fallacies.

REO HAS BEEN CRITICISED for what some term our ultra-conservatism.

WE DON'T MIND—that has been the chief factor in the splendid Reo success. We don't change easily or often so we make less mistakes than others.

WE DON'T EXPLOIT our friends—so we keep them. We hold as sacred the confidence of Reo buyers—and as a result, this industry knows nothing that quite equals the loyalty of the Reo clientele.

AND SO WE SAY that this year of radicalism; this year of wild experimenting; this year of confusion will prove to be the Reo Year—because it will vindicate as no other year ever has, the Reo policy.

IF YOU ARE of an inventive or an adventurous turn, this is a great year to gratify your propensity for experimenting.

BUT IF YOU ARE one of those more serious minded persons who want value for your every dollar; who buy an automobile for service, not for the stunts it will perform:—

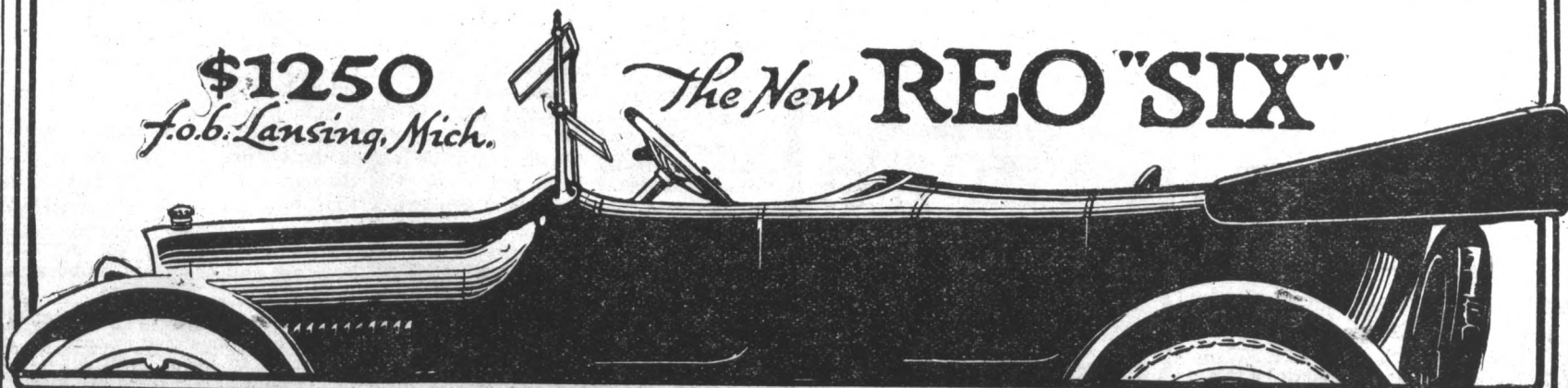
AND ABOVE ALL if you'd be certain when you draw your check that you are getting the best there is to be had in Simon pure automobile value and the lowest in maintenance cost—then come along with us—for this is Reo Year.

Reo Motor Car Company, Lansing, Michigan

117-(c)

\$1250
f.o.b. Lansing, Mich.

The New REO "SIX"



Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Caustery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
DIPHTHERIA,
SKIN DISEASES,
RINGBONE,
PINK EYE,
SWEENEY,
BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
PARASITES.

REMOVES

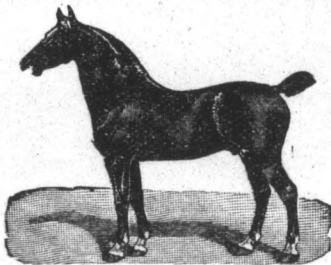
BUNCHES or
BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

**The Accepted Standard
VETERINARY REMEDY**

Always Reliable. Sure in Results.



None genuine without the signature of
The Lawrence-Williams Co.
Sole Importers & Proprietors for the
U.S. & CANADA. CLEVELAND, OH.

CAUSTIC BALSAM IS THE BEST

Your Gombault's Caustic Balsam is the best I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweeney horse with the Balsam.
—Louis Miller, Sharon, Wis.

GOMBAULT'S CAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturist about your Gombault's Caustic Balsam, I have tried some of it and think it excellent.—J. M. Woradowsky, Big Flats, Wis.

Sole Agents for the United States and Canada.

The Lawrence-Williams Co.

TORONTO, ONT.

CLEVELAND, OHIO.

The Care of Young Lambs

I WISH to give some of my experience in caring for young lambs which may be of interest and benefit to other farmers who have ewes that will lamb within the next few weeks. Some lambs are very weak when born, perhaps not able to stand, and must be helped to their first taste of the food nature has provided for them. To this class we must direct eternal vigilance. If good feed and good care have been generously supplied the ewes during the period of pregnancy little trouble will be experienced during the lambing period.

Before lambing begins I make a number of low hurdles about four feet long and two and a half feet high. I make them light and strong. I fasten to one end ordinary small door hooks and to the other end screw eyes or staples. Made in this way these can be hooked end to end and made into a square or, starting in the corner of the sheep shed two of them hooked together and using the sides of the shed for two sides will make a small pen. Two more fastened to these, using the barn again for one side, make another pen, and so on. These pens are almost indispensable for properly caring for ewes with weak lambs, ewes with disowned lambs, etc. I make enough of them so that one pen can be provided for one ewe out of every eight or ten.

When a ewe is about to lamb I make a square of four of these little hurdles and set it over the ewe, leaving it there until I see that everything is all right. The ewe is by herself with the lamb, they cannot lose each other and other motherly inclined old ewes cannot bother. It also prevents one of a pair of twins wandering away, which often results in a disowned lamb. The

ble. About the best plan is to wait until some ewe loses a lamb and then give her the hated twin. She will ordinarily grow fond of it if they are shut by themselves for a few days. After they are turned into the lot with the other sheep they must be watched closely, lest the ewe then desert the lamb and the work of inducing her to own it must be done over.

Some have advocated training the lamb to steal milk from other ewes while they are letting their own lambs nurse. This can be easily done, but I have seen these lambs become very bothersome. They became so bad, in fact, that they worked nervous ewes up to a point where they refused to own their own lambs. In the case of only one or two disowned lambs or orphans, it is not a bad plan to raise them on cow's milk fed from a nipple bottle. I know it is a good deal of trouble to thus raise them, but if there are no ewes in the flock that can be induced to take them it is certainly better to go to the trouble of raising them by hand than to lose them.

Illinois.

W. M. HARDY.

FEEDERS' PROBLEMS.

A Forage Crop to Sow with Oats.

What can I sow in my oats this spring so as to have a pasture for my cattle, horses and sheep, after my oats are cut, and to have a crop of green manure to turn under for corn in the spring of 1917? I would like something that does not bloat cattle and sheep and that would be valuable after pasturing this fall, as a green manure.

St. Joseph Co.

E. D.

We know of no better forage crop to sow with oats than dwarf Essex rape sown at the rate of about five



Members of a Branch County Co-operative Shippers' Association Delivering Live Stock to the Loading Station.

use of these little hurdles saves a lot of trouble and some lambs, too.

If a lamb happens to get chilled I lose no time in warming it up. I cover it with warm blankets, not too heavy, and put it by a fire. Putting it in warm bran and covering well is also a good method, or putting it in warm water, but the water must not be too hot. The newly born lamb cannot stand as much heat as the toughened hand of man. After warming the lamb I am very careful about exposing it suddenly to the cold air. I get a few feeds of its mother's milk inside it and then I am pretty sure that the lamb is all right for the time being.

If a lamb comes very weak, almost dead in fact, often it can be revived by cleaning out the nostrils and mouth and then gently blowing a little air into its lungs. Then put it on the ground with its back up and gently pat its sides just back of the fore-quarters. If the first treatment fails of the desired results try again.

Disowned lambs are difficult problems and a good deal depends on the judgment and patience of the flockmaster. Putting the ewe with her disliked offspring into one of the little pens I have described and putting them away from the other sheep for a few days will often remedy the trou-

pounds per acre. Under favorable weather conditions this will make a good growth after the oats are harvested, and will furnish an abundance of pasture, particularly for sheep and hogs. Young cattle may also be pastured on it to advantage, but it is not a suitable pasture for milch cows, as it gives the milk a strong taste.

Like any other succulent forage, it sometimes causes hoven or bloat, being about on a par with clover in that respect. With reasonable care, however, there is no need of trouble from this source. The writer has used rape in this way and as a summer pasture crop sown alone without any bad results from bloat for many years.

Sometimes the rape makes a sufficient growth so that it bothers a little in the oat bundles, making them a little more difficult to cure, but this is the exception rather than the rule.

The substantial profits owners of hogs are now securing has been one of the pleasant surprises of recent months, following the threatened big slump in values that caused so many stockmen to hurry their pigs to market prematurely. Hogs are now bringing much higher prices than in most former years at this season, and everything promises a continuance of high markets.

American Fence and Steel Fence Posts



Big, full gauge wires—full weight—full length rolls woven with a mechanically hinged joint. Superior quality galvanizing—proof against hot sun, sleet and snow.

American Steel Fence Posts, cheaper than wood and more durable. Last a lifetime. Hold fence secure against all conditions.

Sent Free

Write for booklet on how to set posts and erect fence. Every farmer should have it.

Dealers Everywhere

AMERICAN STEEL & WIRE COMPANY

Chicago New York Pittsburgh Cleveland Denver

Eureka Mulcher & Seeder

A mulcher, smoothing harrow, cultivator, weeder and seeder—all in one. Forms dust mulch—a blanket of loose soil—preventing soil hardening and moisture escaping. Increases yield of corn, potatoes, oats, wheat, etc. Kills weeds. Flat teeth, especially adapted to form mulch. Lever and pressure spring control depth of teeth. Sold with or without seeding boxes for grass seed, alfalfa, oats, etc. Teeth cover the seed to depth desired. Adapted for a large variety of work. In stock near you. Send for catalog.

EUREKA MOWER CO., Box 836, Utica, N. Y.

Four sizes,
3, 8, 10
and 12 ft.



MINERAL In use
HEAVE 50 years
COMPOUND
FOR HEAVES

Booklet Free

\$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases. MINERAL HEAVE REMEDY CO. 463 Fourth Ave., Pittsburgh, Pa.

STOP!

Look ahead—don't look backward after you build and wish that you had selected an All-Metal Silo—then it's too late.

Outlive their guarantee

ZYRO METAL SILOS

TRADE MARK
All we ask is that you investigate before you spend your money. The ZYRO is 25 years ahead—made of Pure-Galvanized-Iron—airtight—insures big saving in silage waste—no shrinking, cracking or collapsing—no tightening anchor-wires or hoops—safeguarded against storms, lightning and vermin—made of NO-CO-RO METAL—rust-proof—costs less to erect, guaranteed to last longer—ornament to any farm.

Free Book Get our Free ZYRO Book—full of facts. Write today—no obligation. Ask us about ZYRO Corn Cribs and Grain Bins. The Canton Culvert & Silo Co., Box 508, Canton, Ohio.



CO-OPERATIVE LIVE STOCK SHIPPERS' ASSOCIATION.

For the beginner in co-operative movements the live stock shippers' association offers the easiest opportunities of community service. Very little capital is required, nor is there expensive building or machinery purchases as is the case with more pretentious organizations. Since the great bulk of live stock is sold to the packers by the commission houses at the yards, no highly trained experts are required as is the case in some other lines. The unit of a transaction is the carload and many doubting individuals are willing to give the plan a tryout as non-members, with a small additional charge, and later to become members. There is less hazard of management than in many other forms of organization for each week's or carload transaction is cleaned up and there is little chance for mismanagement. It is this condition that makes the live stock shippers' organization the form of co-operation for beginners, to educate the community to work together and develop managers, leading up to the more complex problems that come to every section for solution.

The purchase of live stock by buyers in many places is upon a reasonable basis of service, and honesty prevails. Then the volume of business is cut into by other buyers until all are working below the point of efficiency and the cost of this surplussage of services must be paid from the business. Co-operation is rarely a protest against a middleman, but rather against the number of middlemen who intrude on business and compel payment for services not needed.

Co-operation in many cases has amounted to the selection of one man to do the business and the dismissal of the unnecessary ones. If the hired man was doing his proper work and at a satisfactory price, and several more men established themselves to do the work where only one was needed, and could compel payment therefor at the same rate established for the one, the case would be a parallel of many of the agencies of distribution which now are compelling support rather than rendering services.

There are approximately twenty live stock shippers' associations in Michigan, mainly in the southern counties, with one each in Tuscola and Genesee counties. The united organization of these bodies looks toward a systematic marketing plan. The shipping methods are very simple. The manager lists the stock by telephone and knows when to plan for additional shipping days, when necessary. Hogs and lambs are classified and weigher's receipts given. Cattle and sheep are individually marked, so that each shipper is paid for his stock equitably. In case of hogs being "stuffed" to secure more weights, these are marked and sent separately and paid for separately, thus preventing impositions. The manager is the main spoke in the wheel, is courteous and for his services in weighing and doing the work receives a small commission per hundred pounds. He becomes the expert market man and advises the farmers from day to day the conditions of the live stock market. It is the last word in market advice to hear, in Mr. Sheldon's office at the creamery, Litchfield, the manager of the shippers' association giving the market that has just been received by wire, over the telephone.

Under this plan the most remote farmer can know the live stock market, sell with intelligence and ship economically. Knowledge is not knowledge unless it can be known, nor is it effective unless used. The Co-operative Shipping Association informs its members and enables intelligent and economic marketing. This season everybody was conscious that a slump in pork prices would come, but no one knew the time. The buyers began to hedge on prices or stay out of the

John Deere Implements

John Deere Spreader
The Spreader with the
Beater on the Axle

ONLY hip high to the top, but has big drive wheels. Wheels out of the way when loading.

Beater drive works on the principle of a horse power. No clutches, no chains, no trouble.

Mounting the beater on the axle (a patented feature) does away with half the types of castings.

Three exclusive features of the John Deere Spreader: [1] Beater on the axle—simply revolutionary in spreader building. Nothing else like it. Doubles the value of the spreader by all practical tests. Makes the John Deere Spreader possible. [1]

[2] Revolving Rake—entirely new and original. Load moving back to beater revolves the rake. The teeth down in the load hold the manure while the beater pulverizes it. Draft actually less. Even spread—no bunching. [2]

[3] Ball Bearing Eccentric—apron driven without friction. This ball bearing apron drive requires no attention, not even oiling, but it performs wonders in the working of the Spreader. [3]

Write for John Deere Spreader booklet. Tells all about farm manures and fertilizers, how to store manure, its value, and how to spread it most economically. Also contains illustration in colors.



John Deere Two-Way Plow

Steel Frame—Patent Auto Foot Frame—Shift

HIGHLY practical and convenient for working soil all in one direction on hillsides or elsewhere. Also adapted for plowing irregular shaped pieces of land or any other kind of plowing.

Auto foot frame shift works with great exactness. Slight foot pressure swings frame and moves working plow the degree required. Patented.

Automatic horse lift—no work for operator. Each plow independent of other—each has own depth regulating lever and lifting device.

Write for booklet.



John Deere Corn Planter

The Accurate "Natural Drop" Planter

ACCURATE—because it has the "Natural-Selection" drop—an improvement over all other methods.

Kernels do not have to be tipped on edge to enter the cells. Surface of hopper bottom and openings to seed cells are oblique, or sloping. The kernels naturally move toward and fill the cells.

A full—variable drop planter. Plants two, three or four kernels as desired—all you do to change number in the hill is to move foot lever.

Drilling distances varied, and change from hilling to drilling or back to hilling made just as easily.

All corn plates for this planter have 16 cells. Therefore, the same drilling distances are obtained with one plate as can be secured on other planters that require 8, 12 and 16 cell plates.

The gears are always in mesh and can be shifted at any time (even when in operation) to change drop or drilling distances.

Investigate the John Deere tip-over hoppers, quick detachable furrow openers, underhung reel and disc marker without rope.

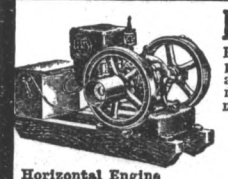
Write for free booklet, "More and Better Corn."

John Deere Dealers Everywhere

Better Farm Implements and How to Use Them

BOOK FREE—168 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. Describes and illustrates: Plows for Light Tractors; Steel and Chilled Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Lister Plows and Cultivators; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Teaming Gears; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders, Stackers, Sweep Rakes, Mowers, Self-Dump Sulky and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills and Seeders; Grain Binders; Corn Binders; Gasoline Engines. This book sent free to every one who states what special implements he is interested in and asks for Package No. X-5.

John Deere, Moline, Illinois



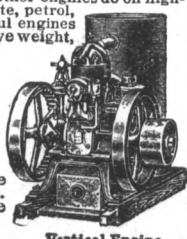
Horizontal Engine

Run on Kerosene—6c for 10 Hours

Ellis Engines develop more power on cheap lamp oil than other engines do on high-priced gasoline. Will also operate successfully on distillate, petrol, alcohol or gasoline. Strongest, simplest, most powerful engines made; only three working parts. No cranking, no excessive weight, no carbonizing, less vibration, easy to operate.

ELLIS ENGINE

Have patent throttle, giving three engines in one; force-feed oiler; automobile type muffler; ball-bearing governor adjustable while running and other exclusive features. Every engine sent on 30 days' approval with freight paid. 100% guarantee. Write for 1916 catalog, "Engine Facts," showing New Models with special prices. ELLIS ENGINE CO., 2839 East Grand Boulevard, Detroit, Mich.



Vertical Engine

FIELD SEEDS At Wholesale Prices

We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything sold Guaranteed Satisfactory or money refunded. Don't pay two profits on Grass Seed. Our seeds are sold subject to Government test. Have new re-cleaned Alfalfa, \$9.00 bu.; Timothy, \$3.00; Clover, \$9.30; Sweet Clover, \$5.40; Alsike and Timothy, \$5.00. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes, Artichokes, and all Farm and Garden Seeds. Write today for 100-page catalog. Free samples and special low prices on seeds you require. Will send Free 60-page book on Growing Alfalfa to those who wish it. Write at once, as we can save you money. A. A. BERRY SEED CO., BOX 231, CLARINDA, IOWA

CLOVER \$5.75 Per Bu.

AND TIMOTHY
DECIDED BARGAIN—INVESTIGATE and Save Money
Red Clover and Timothy mixed—the standard grasses, cannot be surpassed for hay or pasture. Contains 1-3 clover, just right to sow. Thoroughly cleaned and sold on approval, subject to government test. Ask for this mixed seed if you want our greatest bargain. Have Pure Clover, Sweet Clover, Timothy and all Field and Grass Seeds. Write today for free samples and 100-p. catalog. A. A. BERRY SEED CO., BOX 631, CLARINDA, IOWA

CLOVER Timothy and Grass Seed

Only Highest Quality—Lowest Prices

Sweet Clover or Alfalfa will not grow to perfection without inoculation. Don't take chances. We furnish with every order Natural Bacteria Free for inoculating the seed. Write today for 1916 Catalog of Sure Crop field and garden seeds—FREE

CONDON BROS., Seedsmen,
Back River Valley Seed Farm Box 574 - Rockford, Ill.

CLOVER: TIMOTHY \$5.00 Bu.

Greatest Grass Seed Value Known—Investigate. Alsike Clover and Timothy mixed—the finest grass grown for hay and pasture. Cheapest seeding you can make, grows everywhere. You will save 1-3 on your grass seed bill by writing for free sample, circular and big Co-operative Seed Guide. Write today. AMERICAN MUTUAL SEED CO., Dept. 531 43rd and Roby St., Chicago, Illinois.

STANDARD HOG REGULATOR WEEK Feb. 14th - 20th, 1916

See your Standard dealer for Big Special Offer to every buyer of Standard Hog Regulator during Hog Regulator Week, or write to us at once for FREE Special Offer Coupon.

STANDARD CHEMICAL MFG. CO.
Dept. 10 Omaha, Nebraska

AGRICULTURAL LIME The Strongest in Ohio

See Ohio Official Report.
The Scioto Lime & Stone Co.,
Delaware, Ohio.

FREE SAMPLES AND BOOKLET upon request.

FOR SALE CARBONATE OF LIME

Running 98% pure. This lime is in ideal condition for applying to the soil, either mechanically or by hand. Write for prices in car lots or in small quantities. E. I. du Pont de Nemours & Co., Bay City, Mich.

LIME—You should get the highest grade of limestone manufactured. Buy it upon the basis of analysis. We manufacture the highest grade pulverized limestone sold in Michigan. Let us prove it. Ask for sample and analysis. CAMPBELL STONE CO., Indian River, Mich.

LIME—Pulverized lime rock for "sour" soils. Write for LOW PRICES DIRECT TO YOU and we will send sample and full particulars. Write to office nearest you. LAKE SHORE STONE COMPANY, Muskegon, Mich., and Benton Harbor, Mich.

LIMESTONE

For general farm use. Finely pulverized, made from highest high calcium stone. Quick shipments in closed cars. Let us send sample and price. Northern Lime Co., Petoskey, Mich.

Farms and Farm Lands For Sale

85 Acres—\$2650

Good 7-rm. house, large barn, running spring water; owner called away; if taken immediately includes, pr. horses, 5 cows, hogs, hens, cream s. arator, wagons and tools, \$2650, takes all, part cash. Details with descriptions of other fertile farms in Ohio, New York, New England and Maryland in our illus. catalogue "Latest Farm Bargains", mailed free. E. A. Strout Farm Agency, Dept. 101, 47 W. 34 St., New York.

160 acres on Grand River Road, 34 miles from Detroit City Hall. Good building rich land and beautiful location. Private lake. First time offered for sale. Is stock and dairy farm and never rented. Owner at present feeding 39 head cattle. Price \$13,000 and easy terms. Lee Watling, Mgr. Farm Dept.

Watler C. Piper
400 Holden Bldg., Detroit, Mich.

Acres of Opportunities

An illustrated booklet FREE. Michigan has hundreds of thousands of acres of virgin land. \$5.00 an acre up. Healthful climate. Growing season for all crops. Ample rainfall. Write W. P. Hartman, A. & I. Agent, Room 285 Grand Rapids & Indiana Railway, Grand Rapids, Mich.

Farmers: You can get more value for your money in farm property in Southern Michigan than anywhere in the United States. If interested write for free catalogue. BYERS & BROWN, Coldwater, Michigan

BEAUTIFUL FARM ON RIVER BANK
50 acres 2 1/2 miles from Beaverton, Gladwin Co. Mich. New House and Barn just completed, flowing well, 20 acres cleared, best of land. \$2,250 half cash. 100 other farm bargains. U. G. REYNOLDS, Gladwin, Mich.

FLORIDA EAST COAST RY. LANDS
LOWEST PRICES—EASIEST TERMS
Colonist Rates—For Particulars Write
A. LONNQUIST, Land and Industrial Dept.
925 Chamber of Commerce Bldg., Detroit.

For Sale—200 acre dairy farm, 1 1/2 miles from a town of 8,000 inhabitants, on an improved road. 12 acres of alfalfa, 20 acres of wood, 2 silos, buildings in fair condition. Terms easy. J. A. WORTHINGTON, 515 Mich. Ave., Albion, Mich.

FOR SALE: 160 acres near Rochester, Mich. 145 A. under cultivation, 15 A. pasture with fine creek. Buildings and fences good. Price \$8500, terms. Owner GERKE, 233 Medbury Ave. Detroit. North 1092 W.

Southern Farms, Mississippi, Tennessee. Cheap land for corn, stock or general farming. Martin & Cole, 118 Madison Av., Memphis, Tenn.

130 Acres sandy and clay loam, clay sub-soil, near Pontiac, on R. R. Good buildings, 120 acres plow land, only \$9000. \$2500 down. GILMORE & CHAVENELLE, 412 Hammond Bldg. Detroit, Mich.

Central Michigan Farms—Best general farming country in world. Sold on easy terms. Write for list A. C. B. Benham, Hastings, Mich.

40 A. Potato Land, 3 1/2 miles to town, gravel road. Telephone. R. R. \$300 cash, \$500 10 yrs. 7%. C. E. GURLEY, White Cloud, Mich.

For Sale: 640 acres of good land in whole or in part; rare bargain if taken soon. Inquire of C. C. Whitney, 229 Shearer Bldg. Bay City, Mich.

Farm Wanted: 20 to 30 Acres of Detroit. ROSS LAND CO., L. Johns, Manager Farm Department, 1004 Penobscot Building, Detroit, 160 South Gratiot Ave., Mt. Clemens.

WANTED: Man and Wife experienced in farm work. Steady work, good house and pleasant surroundings. Box D 25, in care of Michigan Farmer.

WANTED—To hear from owner of good farm or unimproved land for sale. H. L. Downing, 104 Palace Bldg., Minneapolis, Minn.

MOLASSES. RICHEST FEED. Low est cost. TOLEDO MOLASSES CO., Dept. MF, 25 Huron St., Toledo, O.

WORMS! Hogs' Greatest Enemy

Worse even than hog cholera, because worms attack all hogs, cause indigestion and reduce their vitality and naturally make them susceptible to cholera. Get rid of worms and you'll have the best bunch of shoats and hogs you ever raised and be almost certain to escape cholera.

DR. DAVID ROBERTS' WORM POWDER is a sure riddance of stomach, intestinal and lung worms. It loosens and cleans the bowels and puts the digestive organs in condition. Hogs eat and digest and grow better. The hogs get the benefit of what they eat instead of the food going to sustain thousands of worms.

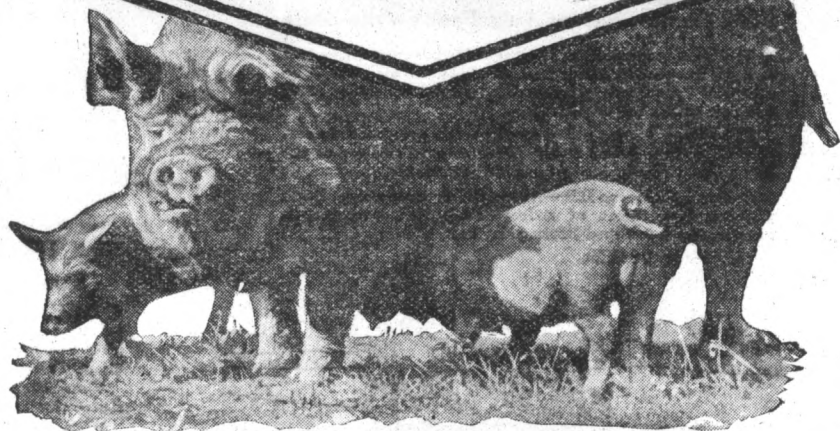
DR. ROBERTS' HOG TONIC AND DISINFECTANT mean healthy hogs. Hog Tonic tones and builds up the system. Disinfectant destroys most disease germs. Experiment is more costly than neglect. Do the right thing at the right time. Use this Roberts preparation and prevent hog losses.

Go to your druggist; buy Dr. Roberts' animal medicines and tonics. There is a Roberts' medicine for every common animal ailment. Over 3500 drug stores carry them. Take no other. If your druggist hasn't Roberts' goods, write us direct. Give us his name, we will see that you are promptly supplied. Look for and insist on getting the package that bears Dr. Roberts' picture.

Over 500,000 copies of his great book (184 pages), "Practical Home Veterinarian," are already in the hands of live-stock owners. If you do not have a copy of the "Practical Home Veterinarian," enclose 25c and copy will be sent postpaid, together with an 8-ounce sample of STOKVIGOR, enough to feed a hog one month.

DR. DAVID ROBERTS VETERINARY CO.

960 Wisconsin Ave.
Waukesha, Wis.



SUCCESS PLANS AHEAD!

WHIRLWIND
SIZE "G"

GET THESE
FREE BOOKS NOW

THESE LONG evenings afford the best possible opportunity for that careful thought which is ever the root of top-notch success.

Just as you plan ahead the spring crops, you should right now plan how to handle 'em most profitably—your machinery buys should not be made on the snap judgment necessitated by summer rush; that's costly.

North and South, East and West, you farmers and stockmen have proved the soundness of a Silo investment—but you shouldn't overlook the true economy that lies in the best Silo Filler.

Now is the time—become thoroughly posted on Silo Filler values—know what we offer, what the other fellow offers. Cool headed, unbiased comparison tells the story.

Write for our Free Books—Free Catalogue of Silo Fillers—Free Book on Silage.

Write for Catalogues of other Fillers—con'tem over point by point and let your decision be governed by what you know rather than by the unsupported song of some salesman.

WILDER-STRONG IMPLEMENT COMPANY, Monroe, Michigan, Box 13.

Silo Fillers Feed Cutters Land Rollers and Pulverizers Cattle Stanchions

INTERNATIONAL AGRICULTURAL CORPORATION

CINCINNATI WORKS

Manufacturers of the Popular

High Grade Buffalo Fertilizers

Dealers in

FERTILIZER MATERIALS

Satisfied Customers Everywhere. Ask your dealer for prices, or write direct to

International Agricultural Corporation

Cincinnati Works, Lockland, Ohio, or Mr. Fred D. Hubbell, Wentworth Hotel, Lansing, Mich., State Agent.

RELIABLE AGENTS WANTED.



FRUIT TREES and FRUIT PLANTS, ORNAMENTAL TREES and SHRUBS of all kinds. Send for Catalog.

T. B. WEST, MAPLE BEND NURSERY, Lock Box 108, PERRY, O.

MOVE TO MARYLAND

Delightful, healthy climate. Good Land, Reasonable prices. Close to big markets of large cities of the East. Send for free descriptive booklet and map.

STATE BUREAU OF IMMIGRATION,
65 A Hoffman Bldg., Baltimore, Md.

The State for Thrifty Farmers

The South—The Homeland

FOUR TO SIX TONS OF ALFALFA, 50 to 100 bushels of corn to the acre, \$100 to \$500 an acre from fruit or truck, opportunities for the stock raiser and dairyman, a climate which means two to four crops a year, pleasant home locations, attractive land prices, are things the South offers homeseekers. Our publications and special information on request.

M. V. RICHARDS
SOUTHERN Ind. and Agr. Com'r, Southern Ry. Mobile, Ala.
Room 78 Washington, D. C.

market. The co-operative associations were on the job and had two weeks' shipments ahead of the jolt that came to the hog market. In one instance of comparison the co-operators were getting 40 cents a hundred more for hogs based on home weights.

Another benefit is the listing of live stock for inter-sale with the co-operative manager, and when he is "on the line" he asks, "can you use a fresh cow?" or "Smith's long on feed and short on hogs. Have you any unfinished stuff you want to sell?"

In shipments of feeder cattle or lambs the association enables the small feeder or the beginner to buy and sell at the same advantage the carload man has, and this has been the beginning of increased community feeding operations. Poultry can be shipped in the same way and the general prices locally respond to these activities.

The initiative to organize shippers' associations often comes from existing units of organization, like the co-operative creamery at Litchfield, the Grange in West Calhoun county, the Farmers' Club in Tuscola county, and the Co-operative Merchandising and Supply organization at Tecumseh. The live stock shippers' organizations are, in turn, beginning to be the nucleus for other co-operative enterprises. There is at the present time perhaps no form of co-operation so much needed, nor is the opportunity for community initiative as inviting in any other field as in the organization of live stock shippers' associations.

Shiawassee Co. J. N. McBRIDE.

LIVE STOCK NEWS.

The awful war now devastating a large part of Europe is the cause of a wholly unprecedented export movement of army horses from the United States to Great Britain, France, Italy and other allied powers. Of late the French government has been the principal customer, paying in the Chicago stock yards around \$135 per head for cavalry horses and around \$165 for the heavier class of cavalry horses. The French purchases often foot up as many as 400 horses a day, and it is estimated on good authority that more than 2,000 horses on an average are purchased daily in this country for army purposes. These army horses are shipped by the French government from Jersey City and Portland, Maine, and in all probability this outlet will continue on a liberal scale as long as the war lasts. The French government has built at Crestline, 25 miles from Chicago, horse accommodations covering an area of nearly a mile square, and the horses bought on the Chicago market are forwarded there until a trainload is accumulated, the pens sometimes holding over 2,500 horses. Army agents estimate that there are in this country 7,000,000 horses that can be purchased for less than \$250 per head, and it is believed that there are enough horses in the United States to supply the European army requirements for at least five years without bringing about any scarcity.

The existing conditions governing the sheep and lamb trade are altogether favorable for owners, who should spare no pains or expense in making their flocks as prime as possible, quality commanding a liberal premium in the markets. Many former sheep feeders who held back last autumn, now see plainly their mistake, and of late there has been a good demand in the Missouri river markets for good feeding lambs at a range of from \$9 to \$9.25 per 100 lbs., while sales are reported of some lambs carrying a little flesh at \$9.50 to \$10.25. The sheep industry in this country has retrograded terribly, and small as was the last crop of spring lambs, the next one will be still smaller.

Several days ago an Illinois cattleman had a shipment of four carloads of fancy black polled steers in the Chicago market that averaged 1,353 lbs. and brought \$9.75. The cattle had been intended for the Christmas holiday trade, but had been tied up in McDonough county by the quarantine. At another time G. P. Cooper, of Marshall county, Iowa, marketed in Chicago two carloads of 1,390-lb. steers from his big feed lots and obtained \$9.15. This makes a total of 340 head of cattle he has marketed in six months, and he has several carloads left. Mr. Cooper is one of the most successful and largest cattle feeders in the Hawkeye state.

WINTERING HORSES.

Generally speaking, there are on the majority of farms three divisions of horses—namely, those that will be worked throughout the winter, idle horses and foals.

In regard to the first class there will not be much difficulty. Their feed will, of course, be governed by the amount of work that is required of them, and therefore will not differ materially from other seasons. Grooming and blanketing are important, not only because they improve the appearance, but are no small factors in keeping the horses in good condition and economizing in feed. By blanketing in the stable it is possible to have the animals comfortably warm without any sacrifice of ventilation. The trouble is that where horses are stabled in the basement of a barn, as the majority of our farm horses are, the stable is too warm and close when the doors and windows are closed, and when any of these are left open it becomes too cold. This is bound to cause discomfort to the animals and endangers their health. It will be seen, therefore, that "comfort" and "ventilation" are two inseparable points.

How to treat the idle horse, however, is a matter that is more open to discussion. There is no need to supply fat and flesh nor stimulate muscular energy. All that is necessary is a maintenance ration—that is, one containing sufficient nutrients to rebuild the tissues of the body broken down by the every-day activities of the vital organs. This can be done in most cases with no grain whatever, by feeding clean oat or wheat straw with a few pounds of roots in the form of turnips or carrots daily, to keep the bowels in good condition. As a luxury a small quantity of oats, say two quarts a day, may be given him, if desired, as may also a moderate allowance of clover hay be occasionally substituted for the straw.

As exercise is very essential to good health, it is a splendid practice, after the morning meal has been disposed of, to allow freedom in a large yard or field, where he may roam at will. Even on comparatively stormy days, when rain is not falling, a few hours in the open air will be profitable. When this course is impossible the horse should at least be provided with a roomy box-stall, and in this case he will voluntarily obtain enough exercise to safeguard his health.

In respect to the winter care of foals, it may be said that there is but little danger of them being too well cared for. The future of the mature horse very largely depends upon the well-doing of the foal during the first winter. As to the feed, he should be given all the nice, well-cured clover hay and finely chopped oats he will eat up clean, three times a day. It is a good plan, in feeding the chop to scald it by putting it in a pail and pouring boiling water over it, after which cover it with a blanket and allow it to stand for a few hours or over night before feeding. A mess of this feed morning and evening will be much relished and give good results. As they enjoy a variety, I do not consider it good policy to make a whole and continuous ration of hay and oats. A turnip or a carrot fed at the noon meal will always be acceptable. In addition to this, a feed of bran containing a small quantity of linseed should be given two or three times a week. Exercise is, of course, necessary, the barnyard or an adjoining paddock again answering for this purpose. It frequently happens that when such exercise is on straw, manure, or some such soft, yielding material, his feet require special attention. Under such conditions the growth is greatly in excess of the wear. It is therefore important that the feet be dressed to a natural shape with a blacksmith's foot knife and rasp.

Canada.

J. H. McKENNEY.

When Detroit, the city

that produces more than three-fourths of the cars manufactured in the United States, shows by official figures for the entire year of 1915 MORE Studebakers in use on Detroit streets than any other car selling at more than \$500

—what surer judgment can you follow in buying a car?

Think for a minute—think what that Studebaker Leadership in Detroit means to YOU. If a friend of yours has a car, you'd take his advice on buying a car in a minute—figure in your own mind that he ought to KNOW. Here's a whole city that KNOWS cars—and knows them better than any other city on the face of the earth. For Detroit's BIG industry is making cars. And so many people in Detroit are either directly engaged in the industry or else come into daily touch with others who are, that knowledge of cars is far more general and EXACT than in any other community.

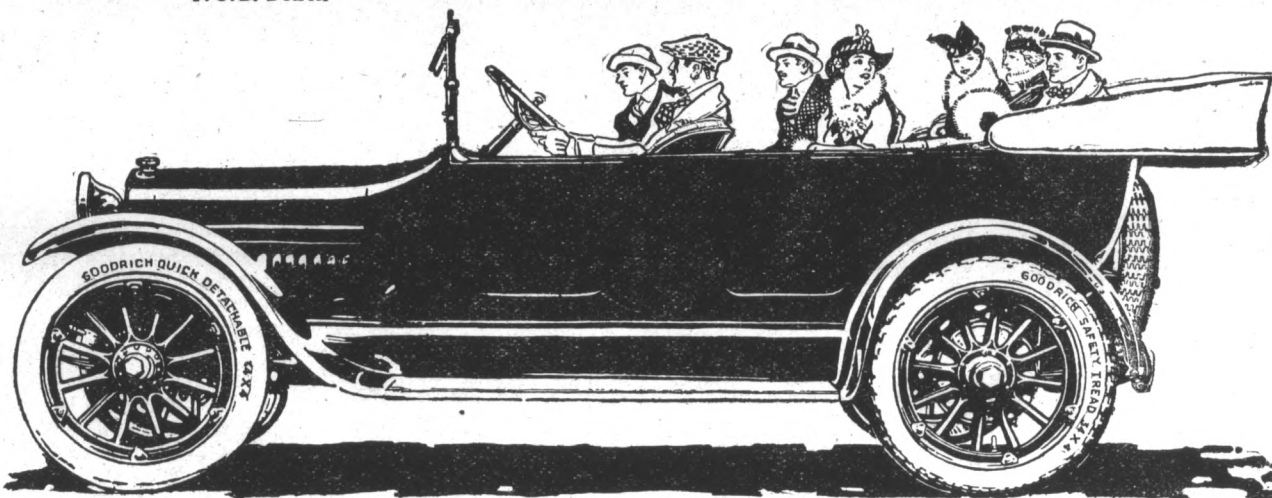
And so when Detroit makes Studebaker its own Preference in cars—no man can overlook that judgment, whether he's running a farm in Illinois, a ranch in Colorado or a fruit orchard in California. For it means that in the judgment of the city that knows cars BEST, Studebaker gives the top VALUE of the market.

See the Car that Detroit PREFERS. See this new FORTY Horse Power, SEVEN passenger, SERIES 17 Studebaker at \$845—the GREAT 4-cylinder Value of the year.

STUDEBAKER

South Bend, Ind. Detroit, Mich. Walkerville, Ont.
Address all correspondence to Detroit, Dept. F. 3

More than 214,000 Studebaker Cars now in use



It's Here! "Z" Engine

The new Z Engine

The one great convincing engine value. Fairbanks-Morse quality—service—dependability—at a popular price, tells the story.

"More Than Rated Power and a Wonder at the Price"

Simple—Light Weight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. Long, efficient, economical "power service."

See the "Z" and You'll Buy It

Go to your local dealer. See the "Z." Compare it on merit—by any standard—point by point. You'll sell yourself on this wonderful engine value.

FAIRBANKS, MORSE & CO., CHICAGO

All Fairbanks-Morse dealers sell "Z" engines on a zone carload low freight basis. If you don't know the local dealer write us.

1½ H.P. On Skids With BUILT-IN MAGNETO \$35

3 H.P. \$60 6 H.P. \$110 ALL F.O.B. FACTORY

Important Dealer Service

When you buy an engine from your dealer you deal with a local representative of the manufacturer. He shares their responsibility. He stands behind the engine he sells. He's responsible to you. He's at your service to see that you are satisfied. And he's as near you as your telephone any time you want him.

COOKER Costs Nothing

Because—within two or three months you'll have saved enough in feed bills to pay the first cost of a

"FARMERS' FAVORITE" FEED COOKER and BOILER

Then it will keep on for years putting money in your pocket. You'll use it most every day. Scores of uses on any farm—indoors and out. Easily moved. 5 sizes. Satisfaction guaranteed. 30 days free trial. Write today for free literature on cooking feed and special prices.

LEWIS MFG. CO.
64-78 Owego St., Cortland, N. Y.

BURNS Any Fuel No Brick Foundations

OVERLAND ALUMINUM SHOES

Sizes 7 to 13 Heights 6 to 17 in.

Save Money and Prevent Sickness

Water-Proof, Rust-Proof, Rot-Proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.

OVERLAND SHOE CO. Dept. 45 Racine, Wis.

Cheap Feed Dried Salvage Grain from injured. Price low—ask for sample.

BARTLETT CO., Mill H., Jackson, Michigan

When writing to advertisers please mention the Michigan Farmer.

Easy to Wash as a Cup



The smooth, rust-proof discs in the Sanitary Milwaukee cream separator are stamped out of one piece of pure aluminum. There is no soldering or any holes, pockets or perforations to catch and hold impurities. Every housewife knows that aluminum utensils are easier to wash because grease does not stick to them.

Not Numbered The Sanitary Milwaukee discs are interchangeable and do not have to be kept in numbered rotation. You do not have to take them off on a wire holder to keep them in any certain order. Each disc can be easily, quickly and *thoroughly washed*, not merely rinsed. Rinsing is not enough to keep any discs clean.

Half as many Discs Besides you have only about half as many discs to keep clean. The tapered design of the discs which provides greater separating space, and proportional feed slides, which feed equal quantities of milk between each set of discs, enable the Sanitary Milwaukee to skim closer with less discs than any other.

**SANITARY
Milwaukee
CREAM SEPARATOR**

Enables you to market absolutely high-grade untainted cream, which will net you the highest prices, because you can keep every part of the Sanitary Milwaukee absolutely sweet and clean.

Your Separator Tested When you buy your Sanitary Milwaukee, you get a certificate, sworn to by a notary public, showing the exact results of the test of your particular outfit with whole milk at the factory. You know then what the separator you buy will do, not what we think it will do. We couldn't afford to furnish this sworn certificate if we weren't sure that every separator we send out will skim close.

Write now for our new catalog of the Sanitary Milwaukee Cream Separator and the name of dealer nearest you who can show you one.

Milwaukee Separator Mfg. Co. 243 Madison Street, Milwaukee, Wis.



100 lbs. Milk Made With 34 Cents Worth of Feed

Zeeland, Mich., I am well pleased with Unicorn and lately made a test with one Holstein cow that produced 80 pounds of milk on 24 lbs. of oil meal, corn and oats. I tested the same cow on straight Unicorn and she made 80 lbs. of milk on 18 pounds of Unicorn. Yours Truly, HENRY PONSTEIN.

UNICORN DAIRY RATION

is equally profitable for tests or every day dairying. TRY IT.
FOR FACTS AND FIGURES WRITE,

CHAPIN & CO., Dept. M, Hammond, Ind.

Write for Book
Today



FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 35 Elm Street, Quincy, Ill.



MILNE STUMP PULLERS for trees or stumps. You can cut them down. New All-Steel machines. Stump-anchored or self-anchored. Unbreakable; rapid; powerful. Double, Triple and Quadruple Attachment, also Rotary Power for sawing, grinding, etc. Write for free catalog. MILNE MFG. CO., 875 Ninth St., Monmouth, Ill.

DEHORNING STOPS LOSS

Cattle with horns are dangerous and a constant menace to persons and to other cattle. Dehorn quickly and easily with a

KEYSTONE DEHORNER

All over in 2 minutes. No harsh method. A clear, clean cut. Cows give more milk; steers make better beef. Send for free booklet. M. T. Phillips, Box 126, Pomeroy, Pa.

BOWSER SWEEP MILLS

Different from all others. 4 or 2 horses. Grind corn with shucks and all small grains. (Also make 10 sizes of belt mills) FREE—Folder on "Feeds and Manures" D. N. P. Bowser Co., South Bend, Ind.

Market the Milk

Raise your calves and get the bigger money to which you are entitled. But do not feed the calf whole milk, with butter fat worth \$600 a ton.

You can sell all the mother cow's milk or butter and make your calf pay you a big profit on its feed, by raising it on

Blatchford's Calf Meal

The Recognized Milk Equal

You get 100 gallons of rich milk feed from 100 pounds of Blatchford's Calf Meal, and it costs you only one-fourth as much. It will make your calf grow fast and well. Blatchford's Calf Meal is composed of the elements the young calf needs in the most trying period of its life; it thoroughly steams cooked—prevents bowel troubles and other ills due to improper milk substitutes.

Blatchford's Pig Meal insures quick, sturdy growth of young pigs at weaning time, without setback or falling off.



RAISE YOUR CALVES

WITH
**BLATCHFORD'S
CALF MEAL**

Blatchford's Calf Meal

The Recognized Milk Equal

You get 100 gallons of rich milk feed from 100 pounds of Blatchford's Calf Meal, and it costs you only one-fourth as much. It will make your calf grow fast and well. Blatchford's Calf Meal is composed of the elements the young calf needs in the most trying period of its life; it thoroughly steams cooked—prevents bowel troubles and other ills due to improper milk substitutes.

Blatchford's Pig Meal insures quick, sturdy growth of young pigs at weaning time, without setback or falling off.

Write us for our Free Book on "How to Raise Calves Cheaply and Successfully Without Milk." Blatchford Calf Meal Factory Madison St., Waukegan, Ill.

Care of Pure Bred Dairy Cows

THE management of a herd of pure-bred dairy cattle is greatly simplified if one has an abundance of pasturage and pure water easily reached in summer, and properly lighted and well arranged sanitary barns, clean yards and sufficient silo capacity to provide an abundant supply of succulent food in winter. It is astonishing how many farmers will invest in registered dairy stock before they have the barns and conveniences necessary to make the undertaking a success. With poorly lighted, badly ventilated bank barns where the air is hot, moist and impure, and yards resembling hog wallows, one can not hope to avoid abortion, tuberculosis, foul feet, calf scours and other ailments that dissipate profits and undermine the health and constitution of the animals. Pure-bred dairy cattle are the result of years of systematic breeding, generous feeding and painstaking care and unless one is prepared to continue such a line of treatment he had better keep his money in the bank or invest it in some less exacting business.

The Care of the Sire.

In the management of the breeding herd too much importance can not be placed upon the care and feeding of the bull. On many farms the bull is so neglected that his care amounts to cruelty. Usually he is kept in a dark, foul-smelling stable, whereas the very opposite ought to be true, as he must be kept in the barn a large part of the time, and for this reason particularly, needs sunshine, light and cleanliness. Nothing contributes more to the bull's health and ability to produce vigorous calves than plenty of exercise. If outdoor exercise is impractical a tread power for separating the milk, pumping water and other odd jobs will solve the problem. The best powers have automatic governors that may be adjusted so as to control the motion whether the power is being utilized or not. In this way the bull's virility will be conserved and his life of usefulness lengthened. Feed him enough to keep him strong and vigorous all the time without loading him up with an excess of inside fat and outside tallow. Blood, muscle and bone are what is wanted in a breeding bull. After his maturity is reached he should be kept in about the same flesh condition throughout the year. This letting down and building up procedure is always disastrous. Any radical changes or feeding too much silage or cottonseed meal should be avoided. An ideal ration for a breeding bull consists of all the clover, or mixed hay, he will eat with an apparent relish, a few pounds of roots, and from four to six pounds of bran and ground oats. The bull should also have all of the clean water he will drink at least once a day.

The pregnant cow should always be the object of special care. She only drops a calf once a year on an average and the saving of a valuable calf often means a large item, especially if the cow is a heavy producer.

Care at Calving Time.

It requires clever management to keep the cows bred up and to save the calves. When the cow that is due to freshen has been on grass and forage and fed naturally, little need be done, the calves usually coming strong and healthy. The calves dropped in the pasture seldom get infected. If attention is given to see that the mother is properly milked for the first three or four days the calf may safely be left with the cow. It is surprising how little the calves will live on during the first three or four days, and how much damage can be done, both to the calf and the cow, by neglecting to properly look after the condition of her udder and permitting a feverish condition to develop from stale milk. In winter he care of the calf pens should receive

close attention. They should be kept clean and aired every day and the floors disinfected with a little slaked lime. It is always worth more than it costs in the field. Never neglect these things until the calves get the scours, coughing and running at the nose, then rush to the veterinary for dope and have a general barn cleaning and a lot of unthrifty calves. It is always prudent to keep everything sanitary about the calf barns.

The feeding of dry cows, especially those that are going to be put to test for official records, should be generous in order that they may take on flesh. Experienced feeders place great emphasis on the flesh condition of the cow, claiming that it tends to increase the percentage of butter-fat in the yield of milk. The fact that many cows lose flesh rapidly when they are making large records goes to show that body fat is converted into butter-fat very rapidly during the testing period. Old process linseed oil meal is highly valued by many dairymen who have fed cows that have made wonderful records. In the case of cows that are not being prepared for official records a ration made up of good silage, clover, or mixed hay, and from two to four pounds daily of bran and ground oats should prove adequate. The addition of a pound daily of linseed oil meal for a few days before freshening can do no harm and tends to keep the cow's digestive system in good condition. If plenty of silage is being fed there will be little danger of constipation as is so often the case when no form of succulence is included in the ration. After freshening the cows should be fed sparingly until she has resumed her normal condition. Then the ration may be increased gradually until she is brought up to her maximum production at the end of four or five weeks.

The Essentials of Calf Feeding.

Calf feeding requires painstaking care and attention. It is important that the calf receive the first milk, colostrum, which exerts a laxative effect and purges the system of impurities. But after two or three days it is desirable to get the calf accustomed to eating out of the pail. Teaching the calf to drink requires patience but it is not difficult if the fingers are placed in the calf's mouth and the calf's head held down so that the milk will be drawn down in the mouth as the calf sucks the fingers. Whole milk should be fed, three times a day for the first three or four weeks. Then the whole milk may be replaced gradually by skim-milk and some kind of grain substituted to take the place of the carbohydrates removed in the cream. Bran, oat meal and whole corn fed dry in boxes in the calf pens makes a good supplement to the skim-milk. Always keep choice bits of hay where the calves can nibble at it. But a word of caution about silage. Never allow a young calf to get frozen or musty silage. Many feeders feed a little blood meal with the skim-milk and find that it helps to keep the digestive organs in good condition. One teaspoonful at one feeding is sufficient for young calves; later the amount may be increased as the calf begins to gain in weight.

Calves should be kept inside for the first few months. Fall and winter calves that have been properly developed may safely be turned out to pasture nights as soon as the grass becomes sufficiently hardened to prevent digestive derangements, but they will thrive better if kept inside of a darkened stable and protected from the hot sun and flies during the day. Spring and summer calves should be kept inside for the first few months. Exercise is essential to healthy development, but too much exercise and exposure causes a vast amount of suffering and loss of condition. Extremes should be avoided. Calves that have

been allowed to rustle some and build up vigorous constitutions and healthy bodies will make better gains the next winter than those that have become accustomed to pampering and heavy rations of grain feed. The same rule applies to the feeding and management of the heifers. Vigor and constitution cannot be obtained if the heifers are forced into early breeding. By liberal feeding of plenty of bulky and organic food the heifers will develop large capacity, and if not bred before they reach a fair maturity will develop into strong, vigorous cows and make better records than they would if fed too much grain and bred before reaching such a maturity. Young bulls, too, when fed moderately and allowed to run in the pasture and develop traits of character and stamina will show greater powers of prepotency than those raised under close confinement.

The Time for Freshening.

On most dairy farms where pure-bred cattle are kept it is desirable to have the cows freshen at various times during the year. This affords a more even distribution of labor and provides a regular income during the year. In the pure-bred herd, where the cows are maintained in good condition at all times of the year, there is no noticeable difference in the quantity of milk produced by cows that freshen in the fall or spring. The work of handling the calves is simplified when several come at about the same time, but when one has the facilities for handling them at all seasons of the year it is a matter of less importance than is the case when a dairyman depends on hired hands to help in the fields during the busy season of the year.

It is a mistake for a breeder of registered dairy cattle to lose sight of the milk-producing end of the business. Many farmers invest in registered animals thinking that the sale of surplus stock will put the business on a money-making basis, but they soon discover their mistake. It requires years to build up a choice herd of dairy cattle and the sale of breeding animals is sure to be slow until a few of the cows in the herd have demonstrated an ability to produce. Then, too, one must retain the best of the females to replace the older cows in the herd. Bull calves, from untested cows, do not find ready buyers at remunerative prices. The tendency on the part of breeders to test out their heifers before offering them for sale means several years of waiting for cash returns from that source so that the milk-producing end of the business must be depended upon to meet operating expenses for the first few years. The man who begins in a moderate way and builds up a profitable milk-producing herd and depends on the cows to finance his breeding operations is on safer ground than the man who invests his money in breeding cattle thinking that the sale of his surplus breeding stock is going to put his business on a money-making foundation. Some of the most successful breeders of dairy cattle in the country feel that they are making satisfactory progress when the sales of breeding stock equal the sale of milk and butter.

New York. W. MILTON KELLY.

DAIRY PROBLEMS.

Is a Pit Silo Practical?

Is it practicable to dig a pit silo? My soil is a sandy loam with plenty of drainage. Have a basement barn on side of hill. How arrange ladder, bottom drainage, and means for one man to get ensilage out?

Mason Co.

D. A. H.

I would say without any hesitation that a pit silo is not practical. It will cost nearly or quite as much as a silo above ground. It will cost about the same to fill, and it will cost a great deal more to get the silage out when you come to feed it. You can elevate the silage when filling by steam or gasoline power, but when it comes to

feeding it, it must be elevated by human power. Put the silo above the ground. The silo was out of date long years ago.

How to Test Milk.

Inform me how to test milk. Kind of acid to use and how much.
Eaton Co. W. A. P.

This question can be answered only briefly in this department. It is quite a long process though not a very difficult one. Take a sample of 17.6 c. c. of milk with a pipet and put it in a milk-test bottle. Then put in an equal amount of sulphuric acid; mix thoroughly. Now place in a Babcock testing machine and whirl for five minutes. Then add enough hot water to bring the fat into the graduated neck of the bottle, where it can be read. With a little practice any careful person can soon become quite expert in testing.

Balancing a Ration with Buckwheat Middlings.

Please balance a ration for my cows out of the following feeds: Mixed hay, bean pods, and corn fodder for roughage. Buckwheat bran with middlings at \$18 per ton; wheat bran \$25; oats \$45; corn \$75; oil meal or cottonseed \$40 per ton.
Shiawassee Co. E. T. E.

Much depends on the quality of the bean pods. If they are good and the cows eat them readily, it will lessen the amount of protein to be supplied in the grain ration. But if they were out in bad weather and got wet, or if too ripe when pulled, you cannot get much good out of them.

The mixed hay and corn fodder are deficient in protein, and a grain food must be used that contains protein to balance.

Give the cows all the hay, corn fodder and bean pods they will eat, but don't compel them to eat poor stuff up clean, as it doesn't pay.

Buckwheat middlings are rich in protein, containing 22 per cent, but with the bran—hulls—it would not be worth nearly as much. I would suggest mixing wheat bran and this buckwheat by-product equal parts and feeding no other grain. If cottonseed meal was not so high I would use a little of that, say two pounds, and then add a little corn meal, but cottonseed is too high.

Cottonseed Meal Not Necessary.

What is the best balanced ration for a mixed bunch of dairy cows, both grain and roughage considered, for the production of milk? I am selling my milk to a cheese factory, and they do not test the milk. What would produce the most milk only. I have ten cows, all fresh, but three which are coming in soon. I have a silo. I am feeding ground oats and bran equally mixed, and cottonseed meal, with clover hay and silage. What proportions would you feed these, and what other feeds would there be to improve the ration, if any?

Ingham Co.

R. C. F.

If you feed the proper amount of grain and all the clover hay the cows will eat, I do not think it necessary to feed any cottonseed meal at all, and as the product is very high this year, this will cheapen the ration.

Oats are fairly rich in protein and so is bran, while clover hay is a balanced ration in itself so far as food nutrients are concerned.

I can simply suggest that you feed all the ensilage and clover hay the cows will eat, and then feed ground oats and bran as many pounds per day to each cow as she produces pounds of butter-fat in a week, or as you do not test for butter-fat, feed one pound of grain for every three and a half pounds of milk produced.

COLON C. LILLIE.

Fourteen cows at the California Station, fed barley in addition to alfalfa produced 16.2 per cent more milk and 13.2 per cent more milk fat than when fed alfalfa hay alone, and they also gained 12 pounds more per head in body weight. The feeding of silage in addition to alfalfa to cows was followed by a gain of 22 per cent in milk, 10.8 per cent in milk fat, and 12.3 per cent in milk solids over a roughage feed composed of alfalfa alone.

Pay Nothing In Advance

First Small Payment In Three Months

375
500
750
and
1,000
Pounds
Capacity

No
Money
Down

Your
Credit
Is Good



This is the most sensational bargain offer ever made on a Cream Separator of absolutely guaranteed high quality. The House of Hartman with its 60 years business record and \$10,000,000 resources is behind this remarkable Separator, which is offered direct-to-you on the famous Hartman Special Farm Credit Plan—the most liberal credit terms ever devised.

PAY NOTHING IN ADVANCE. Not a penny down, no deposit, no "red tape" of any kind, no security, no interest. Just let Hartman ship you a Majestic Cream Separator for free trial, so that you can prove for yourself what it will do. Test it with warm and cold milk. See how easily it runs—how simple and satisfactory—how it skims right down to the last drop—how much quicker it does the work.

Just use the "Majestic" as your own for 30 days and if you are not perfectly satisfied that it is the best Separator bargain ever heard of, return it at our expense. If you decide to keep it, make your first small payment in 3 months, and balance in 3, 6 and 9 months thereafter, giving you

A YEAR TO PAY Without Interest

This is the famous Hartman Farm Credit Plan on which you can buy not only Cream Separators, but also Engines, Incubators, Pumps, Roofing, Furniture, Carpets, Rugs, etc., etc. Hartman trusts Farm Folks because he believes in them. Your credit is good. If you prefer, you may pay all cash, but the Separator will be no cheaper in price. It costs you nothing extra if you take a whole year to pay. If you are thinking of buying a Cream Separator, don't do it until you let Hartman ship you for free trial the wonderful

Majestic Cream Separator

375, 500, 750 and 1,000 Pounds Capacity

A masterpiece of mechanical skill—a Separator so ingenious in design, so perfect in construction, so simple and easy to operate—that it will measure up in all round efficiency with Cream Separators that sell for practically twice the Hartman low direct-to-you bargain price. The "Majestic" has all the very latest improvements, including a remarkable inside oiling device that keeps the gearing perfectly lubricated and prevents any trace of oil coming in contact with the cream. The Majestic Separable Disc Bowl is the simplest, most accessible and easiest to clean of any Separator Bowl made.

Wonderful Offer

Send for This Free Book

We want you to learn all about the wonderful Majestic and compare our low price with prices of cheaply constructed, inferior makes. The Majestic on our year-to-pay easy credit terms costs less than others ask all cash for. Get the proof. It's in this book. Write your name and address in coupon and mail today. Ask for Cream Separator Catalog No. S-256

HARTMAN CO.,
4043-45 LaSalle St., CHICAGO, ILL.

Mail This FREE Coupon NOW!

Name.....

Address.....

HARTMAN COMPANY,
4043-45 LaSalle St., Chicago

Send me free copy of your Cream Separator Catalog No. S-256 explaining liberal no-money-in-advance, year-to-pay, without-interest credit terms. This does not obligate me in any way.

Only \$2 DOWN and One Year To Pay

For any Size—Direct from Factory

You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

\$24 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

30 DAYS' FREE TRIAL GUARANTEED A LIFETIME

You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it along-side of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

Albaugh-Dover Co., 2165 Marshall Blvd., Chicago, Ill.

\$15 95 UPWARD ON TRIAL Fully Guaranteed

American CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$15.95 Skims warm or cold milk making heavy or light cream. Bowl is a sanitary marvel, easily cleaned. **ABSOLUTELY ON APPROVAL** Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from western points. Whether dairy is large or small write for handsome free catalog. Address: **AMERICAN SEPARATOR CO.,** Box 3061 Bainbridge, N. Y.



The ROSS SILO

Keeps ensilage fresh and sweet. Many exclusive features. Doors on hinges; triple, bevel refrigerator type door and frame; oval door frame to fit exact circumference of silo; extra heavy hoops and lugs bent to fit silo; continuous door frame.

Thoroughly Manufactured Our 66 yrs. of manufacturing experience is valuable to you. Write for instructive Silo Book. We also make Enamelled Metal Silos. Agents wanted **THE E. W. ROSS CO.,** Box 14 Springfield, O.

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. **F. S. Burch & Co., 189 W. Huron St. Chicago**

A New Method of Subsoiling

**More Efficient Than Subsoiling Attachments to Plow—Increases Crop Yields—
Bull Wheel of Tractor Does the Work, without Attention, While you Plow.**

R. C. BREWSAUGH

WHEN you continue to plow to a depth of four to five inches year after year, you soon have a "hard-pan." This hard subsoil becomes more or less impervious to moisture—your land does not have sufficient moisture storage capacity for your crops.

Another thing—the roots of grain when growing cannot penetrate this "hard-pan," but creep along the top of it. Then they have to depend for their sustenance upon the moisture that is retained in the four or five inches of cultivated or top soil. When the grain is heading out, the entire crop is acting as a million pumps, working continually every minute of the day, drawing moisture from the roots to sustain and develop the head. Remember, also, that the sun is constantly at work during the day, evaporating moisture from this top soil. This evaporation, combined with the absorption of the grain itself, soon exhausts what little supply of moisture can be retained in the top soil. The result is: Unless it rains frequently enough, your crop is retarded in growth or ruined entirely.

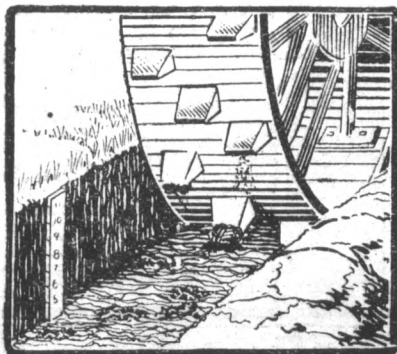
How can you remedy this condition? How can you avoid this kind of disaster? The only answer is—plow deep—plow 6 to 8 inches deep, at least, and then cultivate the subsoil, besides, to an additional depth of 3 to 5 inches. This method will do at least two things for the good of your crops. First, it will permit the grain roots to grow straight down into the subsoil and thus tap a much greater moisture supply than can be retained in the top soil alone.

Secondly, this method of cultivation increases the moisture-holding capacity of your land—makes the subsoil a reservoir that holds the moisture just where it is most needed—around the roots of the grain. This is a demonstrated fact, proven beyond a question by every agricultural college and experimental station in the United States. These institutions have experimented on this until they can now determine, in bushels per acre, the advantage of such cultivation over the ordinary shallow plowing in every kind of soil in the United States.

The increase of moisture supply by subsoiling is as much as 50% or more. The hazard of damage to the grain from drouth is therefore reduced 50% from what it is under the shallow plowing. Think what this means in a dry territory or in an unusually dry season. It has been the experience of many experiment stations and thousands of farmers that deep tilling has actually increased their crop yields from 20% to 50%.

How the New Subsoiling Method Was Discovered.

One of the first and most noteworthy features perfected in the Bull Tractor was the single bull wheel running in the furrow. The designers planned it this way for several good and sufficient reasons. For one thing, the bottom of the furrow furnishes a perfect track and a splendid footing for the traction wheel. Then with the steering wheel also running in the furrow in line with the bull wheel,



the machine was made automatically self-steering—more successfully and positively self-steering than any other tractor.

The Bull Tractor designers put cleats

on the bull wheel to make the traction positive and avoid loss of power through slippage of the bull wheel.

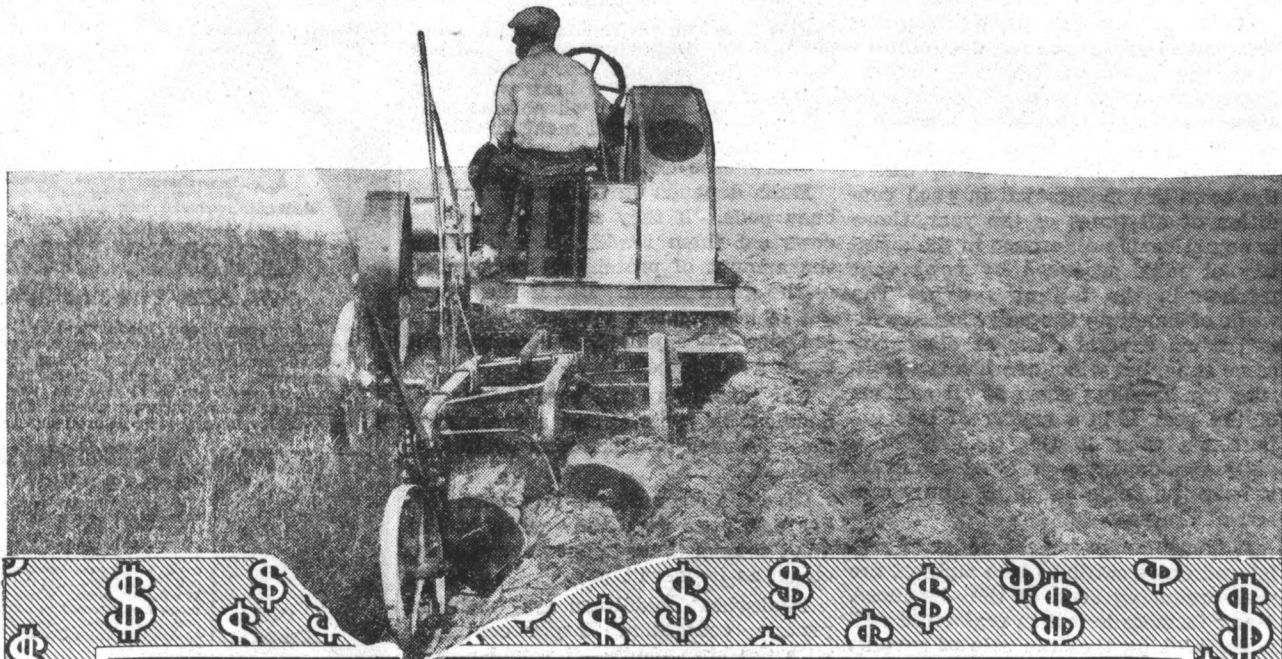
Here it was, quite accidentally, that they gave to American farmers a new and more efficient subsoiling device. They noted the subsoiling tendencies of the cleats on the bull wheel running in the furrow in their preliminary tests and demonstrations, but they did

How This Method Works.

Then the designers got busy and perfected three sets of detachable lugs that were even more effective in subsoiling than the kind that were used on the first model of the Bull Tractor. These new lugs are wedge-shaped—each of the three sets are 3½, 4½ and 5 inches long respectively. They are made detachable and of dif-

Experience of Mr. Hylden.

The following letter from Mr. O. A. Hylden, of St. Anegar, Ia., is typical of many received by the Bull Tractor Co.: "The scheme of the bull wheel in the furrow has permitted us to abandon the old type of subsoiling attachments for plows, as it does better work of this kind at less cost and does it more effectively than the plow



**It's Not the Number of Plows You Pull
But the Acres You Plow That Counts.**

THE BIG BULL plows more acres per day than other small tractors pulling more plows, because it travels faster and **keeps going.**

"I have plowed 15 acres in 19 hours at an average cost for oil and gasoline of 25c per acre. I have not had one moment's trouble nor paid one cent for repairs." Theodore Sharp, Saginaw, Mich.

Our Guaranty and Bull Tractor Service insure you continued efficiency and low upkeep. Price f. o. b. Minneapolis. **\$645**

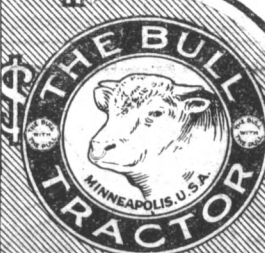
C. L. Roeser, Saginaw, Mich., Distributor for Michigan.

Orders for Big Bulls were received during December, 1915 at the rate of **one every 12 minutes** of each working day. Over 8,000 have been sold during the last 20 months. What greater proof can be asked of its reputation for efficiency, staunchness and economy of operation? Act quick if you want a "Big Bull" Tractor this Spring.

Write for full details of its many remarkable features and our free Monthly Tractor Bulletin.

Bull Tractor Company

2642 University Ave. S. E. Minneapolis, Minn.



THE BULL WITH THE PULL



not then fully appreciate the value and importance of this feature. There were so many other features of the Bull Tractor that were revolutionary in the field of tractor designing, that their time was taken up with perfecting them. But many of the farmers who bought Bull Tractors appreciated the subsoiling feature and mentioned it in their letters to the Bull Tractor Company and talked about it at tractor demonstrations and shows.

ferent lengths so as to fit the needs of different conditions of soil, the longest ones being used in very soft soil.

These "spade" lugs are placed in either 2 or 3 rows on the bull wheel, in such a way as to affect the largest amount of surface in the furrow. As this bull wheel rolls along the bottom of the furrow under the load of the plows, these "spade" lugs dig into the subsoil as they enter and tear it loose as they leave the ground.

attachment. I plow 7 inches or possibly 8 inches deep, and the long lugs or spikes in my wheel penetrate the soil in the bottom of my 8-inch furrow to a further depth of 4 inches or 5 inches, giving me a foot or more in depth of plowing. I would not trade my Bull Tractor for any two-wheel drive in my neighborhood, and there are several of that general construction."—Advertisement.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

I THINK you had better go over to the sugar camp, this afternoon," said Mr. Landon to his son Howard, one morning in early March. "The season will be soon coming on, and we ought to be getting ready."

"I'll go if you wish me to, sir," returned his sixteen-year-old son. I'm just anxious for the kind of a run it will give me. If I start right after twelve I can be back by dark and still spend a couple of hours doing a little fixing up around the camp."

"It will need it. We haven't been over the hill for a long time now. You won't be able to do much in the time you have, but you can see what needs to be done and later we can run over in the sleigh."

A Battle In a Sugar Camp

By EARL R. RICE.

"I shall take the rifle along," said Howard. "I saw wolf tracks the other day out near the edge of the clearing. It would be a fine thing if I could get a good wolf-skin yet this winter."

He did get a good wolf-skin, and this story is to tell how he got it—a story in which the pluck and stamina of a settler's son is matched against the hunger-edged cunning of wild prowlers of the woods.

The Landons had lived scarcely a year in the Cedar valley, so named from the river that wound its way be-

tween the wooded slopes in one of Michigan's up-state counties. The spring before, Mr. Landon had bought two tracts of land in that section. One of these, an eighty acres, was partially cleared, and on it were the house and barns of the settler. It sloped back to the wooded hills, a series of hog-backs, owned by a lumber company, and worthless for farming or fruit growing. Beyond these hills and a good three and a half miles from the Landon house was the other forty. It was covered by a heavy growth of hard-

wood, in which the sugar-maple predominated.

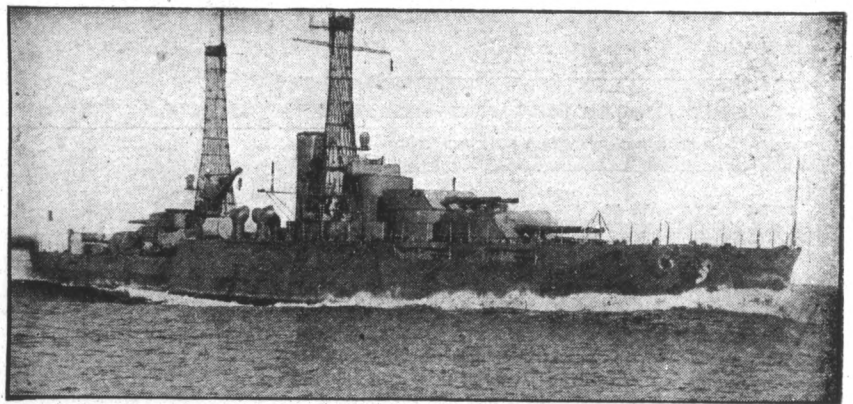
Here, in a convenient place a sugar camp had been located by the former owner, and the Landons, though coming too late to profit to any extent the first year, looked forward to a later regular source of revenue. In the meantime, a few traps were stored there, together with such other things as one would expect. A rough lumber road ran back from the eighty, across the hills and down the Cedar toward the forty.

Howard was delayed a little in getting started on the afternoon of our story. His course lay along the general direction of this old road, but it, at best, served only as a guide. He did

WORLD EVENTS IN PICTURES



King Peter, of Serbia, whose Country is now Over-run by Teutons, is Escaping in a Cart Drawn by Oxen.



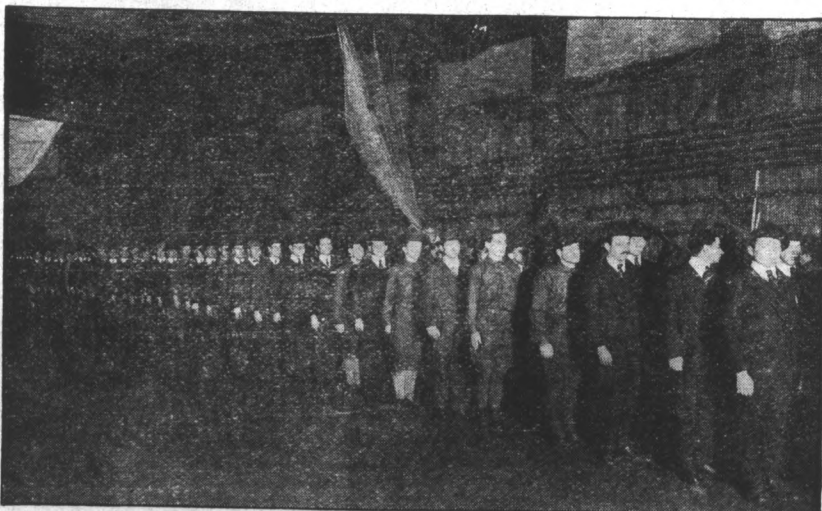
New U. S. Dreadnaught Oklahoma Attained High Speed of 21.47 Knots per Hour in Her Test Runs.



Happy Youngsters Missing the Cold Winds of the North, but Enjoying a Dip at Palm Beach.



Miss Stanton, of Massachusetts, Enjoying a Spin on her Ice Boat.



Students at Harvard University Lined up to Enroll for Military Training.

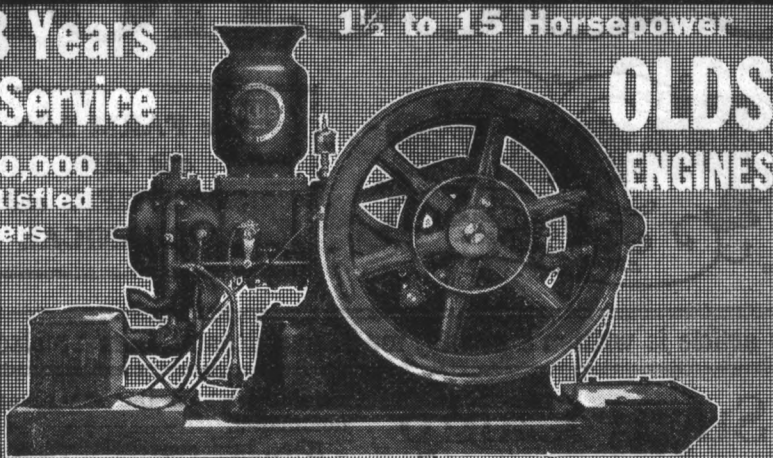


Bergen, Norway, an Important Fishing Center Recently Swept by Fire, Rendering 2,000 People Homeless.

Copyright by Underwood, & Underwood N. Y.

**38 Years
of Service**

**150,000
Satisfied
Users**



Take It Easy, Let The 'OLDS' Do It

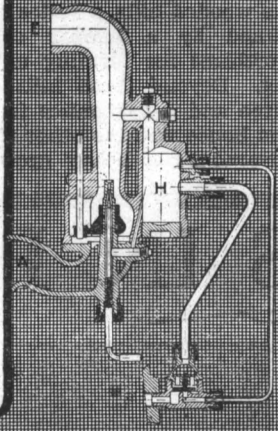
"No Friend Like an 'OLDS' Friend"

SATISFACTION is the thing you think you are buying in an engine and it's the thing you really get when you buy an OLDS.

BECAUSE the best material and the best workmanship are put into the engine; it is easy to start in all kinds of weather; it saves you gasoline and repair bills; its special features are designed for the greater convenience, economy and service to the owner. Note the Mixer illustrated here: no moving parts to wear out, no pump to re-pack, no plunger to get out of order. This is one of the exclusive, patented features of the OLDS engine. Get our prices and guarantee—more attractive and liberal than ever.

BE AN OLDS OWNER

Reliance Engineering Co.,
No 956 Chestnut St., Lansing, Michigan.



These Manufacturers Back Your Judgment

When you screw A C Spark Plugs into the engine of your car you are doing what fifty-two leading motor car manufacturers have done. Because of their many superior features A C Plugs have been adopted as standard equipment by the following famous makes:

Apperson	Federal	Oldsmobile
Brockway	Glide	Paige
Truck	G. M. C.	Packard
Buick	Haynes	Paterson
Cadillac	Hudson	Peerless
Case Tractors	Hupmobile	Pierce-Arrow
Chalmers	Jackson	Pilot
Chandler	Kissel Kar	Reo
Chase Truck	Knox	Saxon
Chevrolet	Lambert	Scripps-Booth
Cole	Lexington-Howard	Simplex
Daniels	Marmon	Singer
Davis	Maxwell	Stearns-Knight
Dodge	McFarlan	Stutz
Brothers	Monroe	United Truck
Dort	National	Vellie
Empire	Oakland	Westcott
Enger		Wilcox Trux

AC Spark Plugs

Guaranteed Gas-Tight

There are a few makers, however, who do not use our plugs, such as Ford, Overland and Studebaker, but there is an AC Plug suitable for each. These plugs make your motor more efficient and give you a better running car.

Champion Ignition Co., Flint, Mich.



*This plug is
designed
especially for
Ford cars*

WANTED

Ten or more persons in each town or township to try our pure tested seeds. To every one who answers this ad and orders from our new, different and original seed book, we will include some free seed, some of our new novelties. We want 100,000 more new customers this year. These ten or more new customers will multiply next year. That's the way our pure tested seed business grows, and you too will become an enthusiastic booster for the "Live Seed House."

We also have a full line of fruit trees, vines, shrubs, etc. Drop us a postal sure today.

Galloway Bros. & Co., Dept. 181, Waterloo, Iowa

Farmers

Spend your spare time this winter taking orders in your neighborhood for our high grade nursery stock. Highest commissions paid. Outfit free. Write today.

Dansville Fruit Tree Co., 163 Main St., Dansville, N. Y.

Grape Vines 500—2 yr. for \$9.00. 100 currants 2 yr. for \$2.00. Strawberry plants. Catalogue free. Woodbine Nurseries, Geneva, O.

You Decided to Use Rock Phosphate

Since that time thousands of other good farmers who believe in the Permanent Fertility System have put it to a profitable test. The story of their methods, and their profits will help you to find "The Permanent and Economical Source of Phosphorus." The Foundation of Lasting Fertility. Let us tell you how they do it.

FEDERAL CHEMICAL CO.

Ground Rock Department
12 Clark Street
Columbia, Tenn.

not follow all of its windings, but, cutting across in many places, saved both time and energy. The snow of early spring lay heavy on all the hillsides, and in the cross valleys was almost untouched by the mounting sun.

He carried a rifle of modern make, and had been careful to fill his cartridge belt. He kept a sharp lookout for game, and once or twice caught a partridge "budding" in the bare branches of young trees. Fox tracks crossed and recrossed the way and now and then the heavy, claw-marked foot-prints of a wolf. On the side of a hill he saw the mute evidence of a bob-cat's surprise of a rabbit. But he had tramped the woods too often in vain search for these animals to expect to take any of them off guard.

After a vigorous tramp of an hour and a half he came in sight of the camp among the trees. It was in a sheltered place and near it, toward the river, a tangled thicket of underbrush extended away in almost impenetrable cover. Tracks of wild animals in the crusted snow, some of them months old, were to be seen everywhere.

The camp was unpretentious and as Howard drew near he noted that its two buildings seemed to sit lower on the ground than formerly. In front was a roofed-over space with open sides and ends, fifteen feet long. The arch and bed for the evaporator occupied most of this protected space. Howard glanced up at the roof. There the evaporator swung just beneath the rafters on strong wires where it had been left the year before. One corner of the great pan, however, was sagging, and Howard spent a half hour in putting it back in position.

It was a little late, therefore, when the boy turned his attention to the other building, a substantial log structure, twenty feet long by fifteen wide, and with low drooping eaves. A wide door, strongly padlocked, in front, and four small square windows on the different sides, were its only openings.

The windows had been boarded up for the winter and the snow had drifted in a considerable pile before the door. But at one side of the drift Howard's attention was drawn to a pile of fresh dirt, and as he stepped forward he saw new-made tracks in the snow, and running under the sill of the door was a burrow through which a large dog might easily make his way.

Howard quickly swung a brass key from his pocket and snapped open the pad-lock on the door. He pried off the hinge clasp with a piece of broken board and pushed open the door.

In the half darkness beyond the lad made out the dim forms of objects, and for a moment he tried to remember the place as he had last seen it. Gradually the rough table in the middle of the room took shape and then the benches by the sides. The stove, too, a patched up box, stood in place in the corner, on a brick platform raised a little above the hard packed dirt floor. All this was familiar, but a queer smell filled the place and assailed the nose of the young settler with an unpleasant sensation.

Howard paused on the threshold and listened, but there was no sound from within, and, reassured, he stepped to the side of the table. With full assurance, a moment later, he groped to the side of the room and felt along the wall for the kerosene lamp he knew to be there. He found it as expected, and striking a match attempted to light it. But either the oil was all gone or the wick too dry from disuse. It sputtered a moment and went out.

There was another lamp on the other side of the room and he stepped around to it. As he did so he laid his rifle down upon one of the benches, that his hands might be freer to act.

He was in the very act of lighting the wick when something, a faint, scratchy foot-fall, it seemed, caused him to turn his head. His heart almost leaped out of his breast in his surprise—for, standing between him

and the doorway and ranged alongside the bench on which his rifle lay, was a gaunt timber wolf, his red tongue licking his snarling jaws! And as he looked, a half dozen others glided like spectres into the room and ranged themselves a pace behind the leader of the pack.

There was no time to plan a way of escape, none to put up a defense against such numbers. He could not reach his rifle. To attempt it would be folly.

The quick witted boy took in that phase of the situation, in an instant. Without a moment's hesitation he threw the tin reflector in his hand straight into the mouth of the foremost wolf, and at the same time leaped to the top of the table. He grasped the overlays above and swung his body up to a place of safety.

He was not a second too soon. The wolf leader sprang at him, and only that the impact of his weight overturned the table and tumbled it toward the corner of the room, the hungry brute would have caught in his snapping teeth, the leg of the boy. As it was, he made a fang-gash that ran from the toe to the heel of the lad's heavy winter boot.

The whole pack, with sharp, angry yelps, sprang again and again toward the crouching figure above, and ceased only when convinced that he was beyond their reach. Then, ranging around inside the dimly lighted room they cast hungry eyes at the quarry and filled the air with the animal smell of their sweating bodies.

Safe for the moment, at least, Howard moved from one to another of the overlays until he reached a half dozen boards near one corner of the open loft. Here he stretched out his aching legs and rested, the while he considered a way out of his predicament. He bitterly regretted that he had put his gun out of reach. He had no other weapon save a small knife and that would be of no avail against such foes.

Nor did he find anything within reach that could be of help. There was a scantling of two on the overlays but they were too long to be of service as he presently learned. He took one of them and from over the edge of his little platform poked fiercely at one of the wolves. He succeeded in merely rousing the whole bunch of forest dogs and in setting them leaping and snapping again.

Then he tried another ruse. Creeping along until he reached the side of the room directly over the wall lamp, he reached quickly down and wrenched it from its place. He lighted it with trembling hands and piecing out a string from strips of his coat he made a sort of basket into which he placed the lighted lamp. This he lowered cautiously toward one after another of the wolves, hoping to drive them out of the room. They sniffed at it and snarled, and at first retreated. But each circled out of reach, and none of them was sufficiently scared to bolt. Growing bold the leader charged the lamp and only by his quickness did Howard save it from being smashed.

Almost in despair the lad stretched out on the narrow platform and waited. The lamp sputtered by his side and sent its feeble rays into the dim corners of the room below and lighted up the loft. Tired of watching the waiting wolves, that had apparently entered upon a regular siege, he turned his gaze upward and let it run along the rough rafters over his head. But no way of escape could he see and no new weapon of offense.

He was just turning to watch the floor below, and deciding that the only thing he could do would be to wait until help should arrive, when an inspiration came. He saw dangling from stout nails at the farther end of the room a dozen or more steel traps. These he remembered to have used the autumn before and on taking them up had stored them in the camp. To each was attached a chain a yard long with a ring at the end.

"I think I could do it," he thought. "I'll try anyhow."

He did try, and after several journeys to the farther end of the room, he had all the traps beside him on the boards.

He unsnapped the chains from each and joined them end to end until he had two longer chains, each of a dozen feet. One of them he fastened securely about the lamp, and left the other free for other use, but leaving a ring and staple at the end. Next he shoved board after board along until he had moved his platform to a place directly over where his rifle lay ten feet below upon the floor.

His every move was followed by the wolves. Nor did they cease to make attempts to reach him. Once his foot slipped and the length of his leg hung down. Only by the greatest dexterity did he save it from the gleaming teeth.

"All right, old fellows," he gritted after this close call. "Keep at it. It's going to be my turn soon."

He lowered the lamp carefully over the edge of the platform and brought it to a stop just out of the wolves' reach. It cast a broad shadow on the floor and in the half darkness of this shadow he slipped the dangling end of the other chain downward toward his gun, where it lay on its side in plain view. His aim was to slip the ring through the trigger-guard.

Carefully he measured the distance, and at last the metal ring struck against the metal of the gun. Once, twice, many times, he tried in vain to slip the ring through the guard. At last he succeeded, but when he tried

to raise the weapon the ring slipped out and he had it all to do over again. But with patience and pluck he tried once more and this time the ring held. He pulled softly—could he raise it?

Gradually he felt the weight of the gun's eight pounds on the other end of the chain. He tested the hold and it held. Swiftly he pulled and the gun leaped up to his grasp.

Howard threw open the breech of the rifle and took out the shell and fitted another in its place. He wanted to make no mistake when he opened fire.

Gun in hand he waited a moment to steady himself. And then he laid down the weapon.

"Why not get them all?" he thought.

He had been careful before that the door be kept open in order that the wolves might go out. Now he was as careful to close it that they might stay in. He poked the door shut and dropped one of his boards on the floor before it. The wolves sniffed and scratched at it as if sensing their danger.

With as careful aim as the flickering light of the fast dying lamp would permit the plucky boy picked out his targets one by one. He only waited between shots till the smoke lifted and the commotion subsided. Three of the wolves lay dead upon the floor before the others bolted for the hole beneath the door. He got another as they crowded into it and blood marked the tracks of the two that fled for cover outside.

"I wonder what father will say," was the boy's thought as he stood a victor in the middle of the smoke-filled room.

Land O' Nod Stories.

By HOWARD T. KNAPP

The Wedding Flight.

JUST as the Queen of the Ants finished showing her guests through the dairy where herds of Aphids or Ant Cows, were feeding on the roots of the rosebushes that grew above, changing the sap into milk, a number of workers came rushing up, all out of breath from running so fast. "Oh, your Majesty, the marriage flight has begun," cried one of the heralds, making a low bow.

"The marriage flight? What is that?" demanded Billy Be By Bo Bum, catching the excitement of the new arrivals.

"It is the annual faring forth of the young Princesses and their mates to found new cities of their own," replied the Queen. "Ever since the day they were born, the baby queens and males have led a life of ease. From morning until night they have done nothing but play—and eat, and oh, how they do eat. They have not even had to forage for their food, as the workers have tended and fed them. But now the time has arrived when they must shift for themselves. I am glad their wedding day has arrived, for there are so many of them that the city has been dreadfully overcrowded this last month or two."

When the Queen saw the preparations being made for the departure of her royal children, she became as excited as the most giddy young princess and would have joined the busy throng if it had not been for her bodyguard. These constant attendants formed a circle around her and started hustling her down a side passage that led to her own apartments at the very bottom of the city.

"Goodbye, Billy Be By Bo Bum," she called. "You see, my bodyguard is afraid I will run away with my children, so they are going to lock me up until the marriage flight is over. Don't forget to come and see me again when all this excitement blows over," and she disappeared down the passage for all the world like a prisoner being led away to jail. She did not struggle or try to escape, for long experience had taught her it was useless to dispute

their orders, and Billy could not help feeling sorry for the poor Queen Mother who did not have half the liberty enjoyed by the most humble worker.

The passage was now so crowded with ants that Billy and Tinker Teedle Tee had hard work making any headway, but by dint of pushing and shoving, their guides managed to force an opening through the throng.

At last Billy and his friends reached the gate of the city, and here they found a whole company of worker ants busily engaged in digging new entrances to the city, for the main gate was far too small to let pass the vast throng of young princesses and males struggling to get out.

When Billy and Tinker finally managed to wriggle through the gate, they found the plain surrounding the ant hill was literally alive with winged males and females. Five wide doors had now been opened in the side of the ant hill through which streams of excited insects were pouring. Every minute the crowd on the plain became more dense, until Billy couldn't help thinking that all the ants in the world were passing in review before him.

Groups of excited workers hung around the gates, but they were not hindering the exit but helping it by urging the pilgrims to make haste and join their comrades on the plain below, and the outgoers seemed as eager for the chance. As they emerged from the city they mounted the trees of the grass forest. For a moment the queenlings and their mates poised themselves on their perch. Then they spread their wings, swayed back and forth once or twice as though half afraid to trust themselves in the air, and then launched forth on their first flight. They did not soar very high, for flying was a new experience and they had not yet full confidence in their wings. The thick foliage of the surrounding trees hindered their flight, so that soon the leaves were alive with the winged throng. And next week I'll tell you more about the ants' wedding journey.

DODGE BROTHERS MOTOR CAR

A year ago this month Dodge Brothers Car had just begun to be produced.

You knew little or nothing about it then.

Do you know anything about it, now, that is not good? Have you heard anything that was not in its praise?

It has been a wonderful year in point of production.

\$33,000,000 worth of Dodge Brothers Motor Cars have been built and delivered since last February.

But that is not half as wonderful as the good opinion that has been built up around them.

The car has not merely made good, but it has won golden opinions, everywhere.

This is largely due to the fact that all through these twelve months the Dodge Brothers have given it their own personal supervision.

All that they learned in building the parts for more than half a million cars, before they began to build their own car, is actively applied to each day's production.

They have built one car and one car only; and concen-

trated upon it their own personal efforts.

For every part and every process that enters into the car, they have personally established a standard.

The work done and the materials used must conform to that standard.

Their factories are very large, but there is not a man nor a foreman in any part of them who does not know that he is constantly under the oversight and supervision of one or the other or both of the Dodge Brothers.

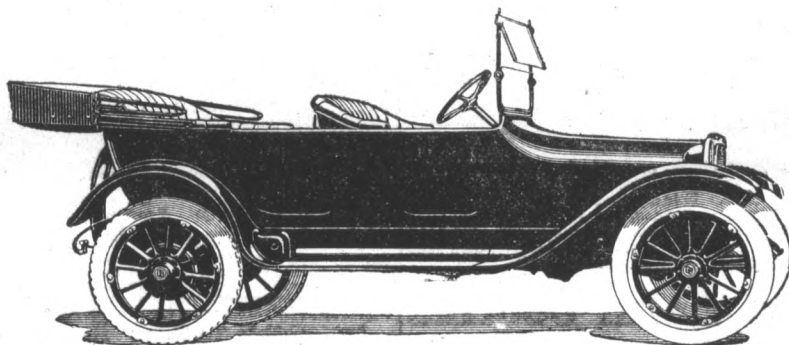
The result has been a very unusual achievement, a first year free from serious complaints—a car that has not developed a single fault worth talking about.

You will find the best evidence of its very unusual performance in your own neighborhood.

Everybody, everywhere, says practically the same things about it.

Before you buy a car, we hope you will talk to your friends and neighbors about the Dodge Brothers Motor Car.

The tire mileage is unusually high.
The price of the Touring Car or Roadster, complete,
is \$785 (f. o. b. Detroit)
Canadian price \$1100 (add freight from Detroit)



DODGE BROTHERS, DETROIT

Get Full Value From Your Land.

This year promises to break records for prices of farm products. Judicious use and economy of fertilizers will return big profits. No potash can be had. Acid phosphate, nitrate of soda, tankage, bone, etc., must do the work.

Feed The Land Well

Nitrate of soda supplies nitrogen, and will release soil potash. Phosphorus is needed in all soils. Get these materials at first hand, waste no money on buying and paying freight on fillers or paying for the mixing. Mix them yourselves, and give the land just what it needs. All agricultural schools endorse this method.

Acid Phosphate, Nitrate of Soda, Bone, Tankage, Etc., will increase your crops. We can ship promptly from principal points. FREE book on Home Mixing, with Fertilizer Formulas. Get our prices now. The Market may advance. Also guaranteed inoculating bacteria for all legumes.

Nitrate Agencies Company
452 Central Bank Bldg. Columbus, Ohio

SCOTT'S RED CLOVER

Look out for Buckhorn and other weeds in clover this year. Very little pure seed to be had. Ours is practically free from weed seeds and waste. Much the cheapest to sow. All other varieties of field seeds. Samples and instructions "How to Know Good Seed" Free. Write today. O. M. SCOTT & SONS CO., 139 Main St., Marysville, O.



Free for Testing

A pair of mated EVERBEARING STRAWBERRY PLANTS FREE if you will report as to your success with them. Will bear loads of big, red, berries from June to November. We have counted 480 berries, blossoms and buds on a single plant. A postal will bring the plants, also enough seed of the new CEREAL, FETERITA to plant a rod square of ground. Also a pkt. of perennial ORIENTAL POPPY seed. Send 10 cts for mailing expense or not, as you please. Write today and get acquainted with THE GARDNER NURSERY COMPANY Box 745, Osgood, Iowa.

Strawberry Plants

Guaranteed as good as grows at \$1.00 per 1000 and up. Catalogue FREE.

ALLEN BROTHERS, R. 9, Paw Paw Mich.

Strawberry Plants

\$1.50 per 1000, etc. Best Michigan Stock. 100 varieties including Everbearers, also Grapes, Raspberries and other small fruits. Send today for FREE Catalog.

ALLEGAN NURSERY, BOX 20 ALLEGAN, MICH.

Strawberry Plants, \$1.50 per 1000. True composed and valuable illustrated catalog free. Mayer's Plant Nursery, Merrill, Mich. Bohemian Nurseryman

SEEDS THAT GROW. More for your money than others give. Catalogue Free. Allen's Seed House, Geneva, Ohio

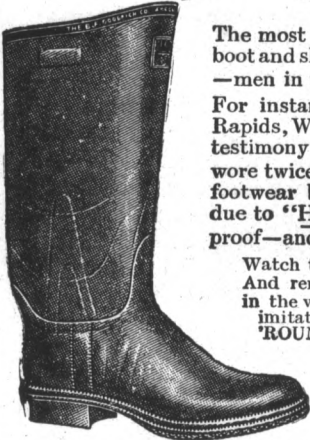
We want you to read these letters!

If you wear rubber boots you'll be interested. They give some remarkable opinions on

Goodrich "HIPRESS"

THE ORIGINAL

Brown and White Rubber Footwear
"With the Red-Line 'round the top'"



The most convincing testimony in the world—just what boot and shoe wearers like yourself think of "HIPRESS"—men in the United States, Canada and Alaska.

For instance—Wm. F. Gleue, of Gleue Bros., Grand Rapids, Wis., who KNOWS Footwear, told us they had testimony given under oath showing where "HIPRESS" wore twice as long as other boots and shoes. Said their footwear business last year increased actually 25%—due to "HIPRESS." You can't get away from such proof—and we're going to give you more.

Watch this space for further word from "HIPRESS" users. And remember—"HIPRESS" is the only Rubber Footwear in the world MOLDED INTO ONE SOLID PIECE! Avoid imitations—the genuine always has the RED LINE "ROUND THE TOP."

The B.F. Goodrich Company

AKRON, OHIO

Makers of the Celebrated Goodrich Automobile Tires
"Best in the Long Run"

When you buy Rubbers insist on the genuine Goodrich-made

"STRAIGHT-LINE"

for best fit—longest wear.



There is no politics in the Farm Journal, but we hate whiskey like we hate all other poisons.

In any fight where one side is for decency and morality, you will find the Farm Journal squarely for that side. It is against whiskey and war and get-rich-quick schemes, and letting Mother split the kindlings. It costs \$1 for 5 years. Or send today for free sample of Farm Journal and free copy of Poor Richard Almanac for 1916.

The Farm Journal

182 Washington Square, Philadelphia

MEN WANTED

LEARN TO DRIVE AND REPAIR AUTOMOBILES AND TRACTORS
Big demand for trained men. Earn from \$75 to \$150 per month. Learn in 6 weeks by the

SWEENEY SYSTEM
of practical experience. You do the real work in machine shop, factory and on the road. No books used. Tools free. Big 64 page catalogue with views of men at work in largest and best equipped auto school in world. Send name today. Address

SWEENEY AUTO SCHOOL
1203 East 15th Street, Kansas City, Missouri.

Beacon FREE Burner
FITS YOUR OLD LAMP.
100 Candle Power Incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS. We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.
HOME SUPPLY CO., 28 Home Bldg., Kansas City, Mo.

Buy Your **COFFEE** WHOLESALE IN 10-LB LOTS. Get the BEST and SAVE 10c per pound. WE PAY POST, EXPRESS or FREIGHT IF YOU LOVE GOOD COFFEE SEND FOR PRICE LIST.
JEVNE COFFEE CO. (Est. 1881) Coffee Specialists
Dept. 7, 2855-57 W. Madison St., CHICAGO.

TRAVELING MAIL BOX

Stop walking after your mail. Have it delivered by **THE OAKWOOD MAIL CARRIER**. Easily placed on telephone poles or 2x4's to fence posts. All metal. Ball bearing pulleys. 30 days' trial. Special offer to first one on every R.F.D. Write for book "Getting the Mail." Oakwood Mfg. Co., 63 Stanton Ave., Springfield, O.

Rock Bottom on the Very Best Steel Roofing Ever Made

This is positively the greatest roofing proposition ever made. Before you invest in new roof covering, siding or ceiling, first learn about the one best—by far the best from every viewpoint, and cheapest. Take no chances. Get Edwards' Freight Prepaid offers and note the big saving.

EDWARDS Reo Steel Cluster Shingles
Tightcote Reo Steel Shingles
actually cost less—outlast three ordinary roofs—no painting or repairs. Rot-proof, fire-proof, rust-proof, and guaranteed lightning-proof. Any one can lay it, right over old shingles if you like.

Impossible To Rust Edges and Nail Holes.
Every sheet of Edwards' Galvanized Steel Shingles, Roofing, Siding, Ceiling or finish is extra heavy galvanized, piece at a time, by our exclusive TIGHTCOTE patented process after sheet has been stamped and resquared. Side and edges are as heavily galvanized as body of sheet. Means no weak spots to rust or corrode. By means of Edwards' Patent Interlocking Device (see illustration) all nails are driven through underlayer of metal only—no exposure—no leaks.

Garage \$69.50 Up
Wide variety, many styles, all sizes of Portable, Fireproof Metal Garages, \$69.50 and up. Lowest prices ever made. Postal brings FREE 64-page Garage Catalog.

FREE Roofing Book
Edwards' Reo Steel Cluster Shingles, V-Crimped, Corrugated, Standing Seam, Painted or Galvanized Roofing direct to you at "rock bottom" factory prices. Write today for FREIGHT PREPAID OFFER on the lowest prices ever made for World's Best Roofing. Free Samples and Roofing Book No. 267.

THE EDWARDS MFG. CO.,
217-267 Pike St., Cincinnati, Ohio

Note construction of Patent Interlocking Device, protecting nail heads from weather—making roof absolutely watertight.

WORLD'S GREATEST ROOFING BOOK
SPECIAL OFFER COUPON
THE EDWARDS MFG. CO.,
217-267 Pike St., Cincinnati
Please send FREE Samples, Freight-Paid prices and World's Greatest Roofing Book No. 267.
Name.....
Address.....
Largest Makers of Sheet Metal Products in the World

Light of Western Stars

By ZANE GREY

CHAPTER XII.

Five months brought all that Stillwell had dreamed of, and so many more changes and improvements and innovations that it was as if a magic touch had transformed the old ranch. Madeline, Alfred, and Florence had talked over a fitting name and had decided on one chosen by Madeline; but in this one respect her wishes were not complied with. The cowboys named the new ranch "Her Majesty's Rancho." Stillwell said the names cowboys were bestowed were felicitous and as unchangeable as the everlasting hills; Florence went over to the enemy; and Alfred, laughing at his sister's protest, declared that the cowboys had elected her queen of the ranges, and that there was no help for it. So the name stood as Her Majesty's Rancho.

The April sun shone down upon a green knoll that nestled in the lee of the foothills, and seemed to center bright rays upon the long ranch-house, which gleamed snow-white from the level summit of the knoll. The grounds around the house bore no semblance to eastern lawns or parks; there had been no landscape gardening; Stillwell had just brought water and grass and flowers to the knoll-top, and there had left them, as it were, to follow nature.

His idea may have been crude, but the result was beautiful. Under that hot sun, with cool water daily soaking into the rich soil, a green covering sprang into life, and everywhere upon it, as if by magic, many-colored flowers rose in the sweet air. Lavender daisies, fragile bluebells, white four-petaled lilies, and golden poppies—deep sunset gold, the color of the west—bloomed in happy confusion. California roses, crimson as blood, nodded heavy heads and trembled with the weight of bees. Low down in bare places, isolated, open to the full power of the sun, blazed the vermillion and magenta blossoms of cactus-plants.

Green slopes led all the way down to where new adobe barns and sheds had been erected, and wide corrals stretched high-barred fences down to great squares of alfalfa, gently inclining to the gray of the valley. The bottom of a dammed-up hollow shone brightly with its slowly increasing acreage of water, upon which thousands of migratory wild-fowl whirled and splashed and squawked, as if reluctant to leave this cool surprise, so new in the long desert journey to the northland.

Quarters for the cowboys—comfortable, roomy adobe houses which not even the laziest cowboy dared designate as crampy bunks—stood in a row upon a long bench of ground above the lake. And down to the edge of the valley the cluster of Mexican habitations and the little church showed the touch of the same renewing hand.

All that had been left of the old Spanish house, which had been Stillwell's home for so long, was the bare, massive structure, and some of this had been cut away for new doors and windows. Every modern convenience, even to hot and cold running water, and acetylene light, had been installed; and the whole interior painted and carpentered and furnished.

No slight task was it to oversee the many business details of Her Majesty's Rancho, and to keep a record of them. Madeline found the course of business training upon which her father had insisted to be invaluable to her now. It helped her to assimilate and arrange the practical details of cattle-raising as put forth by the blunt Stillwell.

She split up the great stock of cattle into different herds; and when any of these were out running upon the open range she had them closely watched. Part of the time each herd was kept

in an enclosed range, fed and watered and carefully handled by a big force of cowboys. She employed three scouts whose duty was to ride the ranges searching for stray, sick, or crippled cattle, or motherless calves, and to bring these in to be treated and nursed. There were two cowboys whose business was to master a pack of Russian staghounds, and to hunt down the coyotes, wolves, and lions that preyed upon the herds.

The better and tamer milch cows were separated from the ranging herds, and kept in a pasture adjoining the dairy. All branding was done in corrals, and calves were weaned from mother cows at the proper time to benefit both. The old rough-and-ready method of branding and classing, which had so shocked Madeline, had been abandoned; and one had been inaugurated whereby cattle, cowboys, and horses were spared brutality and injury.

Madeline established an extensive vegetable farm, and planted orchards. The climate was superior to that of California, and, with abundant water, trees and plants flourished and bloomed in a way wonderful to behold. It was with ever-increasing pleasure that Madeline walked through acres of ground, once bare, now green and bright and fragrant. There were poultry-yards and pig-pens and marshy quarters for ducks and geese.

Here, in the farming section of the ranch, Madeline found employment for the little colony of Mexicans. Their lives had been as hard and barren as the dry valley where they had lived; but as the valley had been transformed by the soft, rich touch of water, so their lives had been transformed by help and sympathy and work.

Here, Madeline felt, was her home. She meant to go back to New York for a time, and to visit her old friends once or twice every year thereafter; but she shrank from making her first departure from the ranch. In New York she would have to make explanations, and they would not be understood. Her father's business had been such that he could not leave it for the time required for a western trip; otherwise, he wrote, he would have come to take Madeline back with him. Mrs. Hammond could not have been driven to cross the Hudson River; her idea of the wilderness westward was that Indians still chased buffalo on the outskirts of Chicago.

Madeline's sister Helen professed herself eager to come out to the ranch—as much from curiosity, Madeline suspected, as from sisterly regard. She invited Helen to visit her during the summer, and bring as many people as she liked. Madeline thought that this would be the best way to let her relatives and her eastern friends realize and understand her determination to break old ties.

One April morning Madeline sat in her office wrestling with a problem. She had problems to solve every day. Most of these were concerned with the management of twenty-seven incomprehensible cowboys. This particular problem involved Ambrose Mills, who had eloped with her French maid, Christine.

Stillwell faced Madeline with a smile almost as huge as his bulk.

"Wal, Miss Majesty, we ketched them, but not before Padre Marcos had married them. All thet speedin' in the automobile was jest a scarin' of me to death fer nothin'. I tell you, link Stevens is crazy about runnin' thet car. Link never hed no sense even with a hoss. If my hair hedn't been white, it's be white now. No more rides in thet thing fer me! Wal, we ketched Ambrose an' the girl too late; but we fetched them back, an' they're out there now—spoonin', sure

oblivious to their shameless conduct!"

"Stillwell, what shall I say to Ambrose? How shall I punish him? He has done wrong to deceive me. I never was so surprised in my life. Christine did not seem to care any more for Ambrose than for any of the other cowboys. What does my authority amount to? I must do something. Stillwell, you must help me."

Whenever Madeline fell into a quandary she had to call upon the old cattleman. No man ever held a position with greater pride than Stillwell, but he had been put to tests that steeped him in humility. Here he scratched his head in great perplexity.

"Dog-gone the luck! What's this elopin' bizness to do with cattle-raisin'? I don't know nothing but cattle. Miss Majesty, it's amazin' strange what these cowboys hev come to. I don't know them any more. They dress swell an' read books, an' some of them hev actooly stopped cussin' an' drinkin'. I ain't sayin' all this is against them. Why, they're jest the finest bunch of cow-punchers I ever seen or dreamed of; but managin' them is beyond me. When cowboys begin to play that game of gol-fof an' run off with French maids, I reckon Bill Stillwell has go to resign!"

"Stillwell! Oh, you will not leave me? What in the world should I do?" exclaimed Madeline in great anxiety.

"Wal, I sure won't leave you, Miss Majesty. No, I never will do that. I'll run the cattle bizness fer you, an' see after the hosses an' other stock; but I've got to hev a foreman who can handle this amazin' strange bunch of cowboys."

"You've tried half a dozen foremen. Try more, until you find the right man," said Madeline. "Never mind that now. Tell me how to impress Ambrose—to make him an example, so to speak. I must have another maid; and I do not want the next one carried off in this summary manner."

"Wal, if you fetch pretty maids out hyar you can't expect nothin' else. Why, that black-eyed little French girl, with her white skin an' pretty airs an' smiles' an' shrugs—she hed the cowboys crazy. It'll only be wuss with the next one."

"Oh, dear!" sighed Madeline.

"An' as fer impressin' Ambrose, I reckon I can tell you how to do that. Jest give it to him good an' say you're goin' to fire him. Thet'll fix Ambrose an' mebbe scare the other boys fer a spell."

"Very well, Stillwell. Bring Ambrose in to see me, and tell Christine to wait in my room."

It was a handsome debonair, bright-eyed cowboy that came tramping into Madeline's presence. His accustomed shyness and awkwardness had disappeared as if he expected her to wish him joy; and Madeline actually found that expression trembling to her lips. She held it back, and tried to be severe; but she feared that she would fail. Something warm and sweet, like a fragrance, had entered the room with Ambrose.

"Ambrose, what have you done?" she asked.

"Miss Hammond, I've been and gone and got married," replied Ambrose, his words tumbling over one another. His eyes snapped, and there was a kind of glow upon his clean-shaven brown cheek. "I've stole a march on the other boys. There was Frank Slade pushin' me close, and I was hevin' some runnin' to keep Jim Bell back in my dust."

"Even old man Nels made eyes at Christine; so I wasn't goin' to take any chances. I just packed her off to El Cajon and married her."

"Oh! So I heard," said Madeline slowly, as she watched him. "Ambrose, do you—love her?"

He reddened under her clear gaze, dropped his head and fumbled with his new sombrero, and there was a catch in his breath. Madeline saw his

powerful brown hand tremble. It affected her strangely that this stalwart cowboy, who could rope and throw and tie a wild steer in less than one minute, should tremble at a mere question. Suddenly he raised his head, and at the beautiful blaze of his eyes Madeline turned her own away.

"Yes, Miss Hammond, I love her," he said. "I think I love her in the way you're askin' about. I know the first time I saw her I thought how wonderful it'd be to have a girl like that for my wife. It's all been so strange—her comin', an' how she made me feel. My—it—well, I guess I have a little understandin' now of Padre Marco's blessin'."

"Ambrose, have you anything else to say to me?" asked Madeline.

"I'm sure sorry I didn't have time to tell you; but I was in some hurry."

"What did you intend to do? Where were you going—when Stillwell found you?"

"We'd just been married. I hadn't thought of anything after that. Suppose I'd have rustled back to my job. I'll sure have to work now, and save my money."

"Well, Ambrose, I'm glad you realize your responsibilities. Do you earn enough—is your pay sufficient to keep a wife?"

"Sure it is! Why, Miss Hammond, I never befor earned half the salary I'm gettin' now. It's some fine to work for you. I'm goin' to fire the boys out of my bunk-house and fix it up for Christine and me. Say, won't they be jealous?"

"Ambrose, I—I congratulate you—I wish you joy," said Madeline. "I shall make Christine a little wedding-present. I want to talk to her for a few moments. You may go now."

It would have been impossible for Madeline to say one severe word to that happy cowboy. She called to Christine.

"Mrs. Ambrose Mills, please come in!"

No sound came from the other room. "I should like very much to see the bride," went on Madeline.

Still there was no stir or reply.

"Christine!" called Madeline.

Then it was as if a little whirlwind of flying feet and entreating hands and beseeching eyes blew in upon Madeline. Christine was small, graceful, plump, with very white skin and very dark hair. She had been Madeline's favorite maid for years, and there was sincere affection between the two. Whatever had been the blissful ignorance of Ambrose, it was manifestly certain that Christine knew how she had transgressed. Her fear and remorse and appeal for forgiveness were poured out in an incoherent storm.

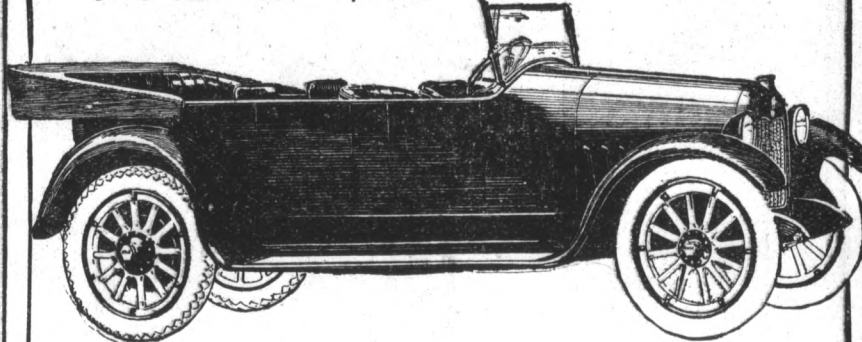
Plain it was that the little French maid had been overwhelmed. It was only after Madeline had taken the emotional girl in her arms, and had forgiven and soothed her, that her part in the elopement became clear. Christine was in a maze, but gradually, as she saw that she was forgiven, calmness came in some degree and with it a story which amused yet shocked Madeline. If ever a cave-man had taken unto himself a wife, if ever a barbarian had carried off a Sabine woman, then Ambrose Mills had acted with the violence of such ancient forebears.

"He say he love me," repeated the girl, in a kind of rapt awe. "He ask me to marry him—he kees me—he hug me—he lift me on ze horse—he ride with me all night—he marry me!"

And she exhibited a ring on the third finger of her left hand. Madeline saw that whatever had been the state of Christine's feeling for Ambrose before this marriage, she loved him now. She had been taken forcibly, but she was won.

After Christine had gone, comforted and betraying her shy eagerness to get back to Ambrose, Madeline was haunted by the look in the girl's eyes, and by her words. Assuredly the spell of romance was on this sunny land!

New Case "40"—\$1090



"Jay-Eye-See"

Many years ago there was a famous race horse, known from ocean to ocean. Its name was "Jay-Eye-See"—which were the initials of J. I. Case, the founder of the J. I. Case T. M. Company.

The owner of this famous horse was known as a man who loved thoroughbreds—a man who admired perfection. He was recognized as a master-builder of machinery. He established his factory in 1842, and around it gathered a world-known community of able workmen.

A Thoroughbred

Like the noted "Jay-Eye-See"—known to you surely by reputation—the new Case "40" is a thing of rare beauty. Its long, sweeping lines are distinctive. All corners have disappeared. This unmistakable beauty makes men spot this car and admire it. You will enjoy driving such a "different" car—one that stands out from others.

Tomorrow's Car Today

Your first mile in this car will delight you with its unusual comfort. This is gained, not alone by the use of the cantilever springs, but by the Case way of suspend-

ing these springs from the rear axle so that they do only spring duty.

The divided front seats—the upholstery in real grain leather, which, by the way is removable as a unit for cleaning—together with the unusual room, both in the front compartment and in the tonneau, will excite further praise.

Tests of Value

Then when you come to test those parts beneath the hood, in a hard pull or up a steep incline, or on the car's 100,000th mile, you will find the Case motor well deserving of the characterization—"the motor that makes extra cylinders unnecessary."

Here Are More Details

The fact that all wiring is housed in waterproof, rustless, flexible conduits, illustrates the care in planning of details. The junction box between the body and the chassis, also indicate the attention which you will find as you go through the car with a microscope. Study every part. These are but a few of the many things which make this car a rare value. Of course Westinghouse ignition, lighting and starting equipment needs no further comment.



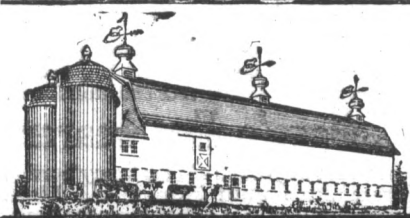
The Sign of Mechanical Excellence the World Over

(366)

New Car—New Price

We offer you this car at the price of \$1090, f.o.b. Racine, with the statement that it contains all of the merit of our earlier "40," which sold for \$2300. You know what Case means by value. Let us send you our fine new catalog, which shows you the car in colors and pictures its many superiorities.

J. I. CASE T. M. COMPANY, Inc.
Founded 1842 536 Liberty St., Racine, Wis.



For New Or Remodeled Barns

JAMES Barn Plan Service and JAMES Sanitary Barn Equipment have proved their value wherever barns are built for profit. The dairyman realizes that the first essential to making money is a good barn. Even the best herd will lose its efficiency if poorly housed. JAMES service fully described in our new book, "The JAMESWAY," same book tells all about the great JAMES line of Stalls, Stanchions, Pens, Carriers, Ventilators, Trucks, Watering Buckets, etc., designed and built by W. D. James and his associates, originators of sanitary barn equipment ideas.

To get a copy of this book, tell us how many cows you own, when you expect to build or remodel a barn, and what equipment you are most interested in. Write today. JAMES MFG. CO. CA31Cane St., FT. ATKINSON, WIS.

James Barn Plan Service Sanitary Equipment

THE GENUINE SMITH STUMP PULLERS
W. SMITH GRUBBER CO.
CATALOG FREE—DEPT. 42 LA CRESCENT, MINN.

A MONEY-MAKING JOB FOR YOU!

WANTED NOW FARMER OR FARMER'S SON

With rig or auto to call on regular trade with the big Shores Line of Family Medicines, Spices, Extracts, Toilet Articles, Veterinary Remedies, Oils, Etc. Our new, successful plan for increasing business assures you of over \$150.00 per month profits. Ask about it. No experience necessary. Don't worry about capital, but write quick. Shores-Mueller Co., Dept. 44, Cedar Rapids, Ia.

FACTORY to RIDER

Saves you big money. Buy direct and save \$10 to \$20 on a bicycle. RANGER BICYCLES in 24 styles, colors and sizes. Greatly improved; prices reduced. Other reliable models, \$11.95 up. WE DELIVER FREE to you on approval and 30 days trial and riding test. Our big FREE catalog shows everything new in bicycles and sundries. A cyclopedia of information which every person should have. Write for it. TIRES, lamps, wheels, parts and supplies at half usual prices. A few good second hand bicycles taken in trade \$3 to \$8 to clear. Do not buy a bicycle, tires or sundries until you write and learn our wonderful new offers, low prices and liberal terms. A postal brings everything. Write now. MEAD CYCLE CO. DEPT. S-77, CHICAGO

MEN WANTED

We positively teach you at home by mail to earn \$25 to \$50 weekly as Chauffeur or Repairman. Students assisted to positions. Best system, low price. MOTOR SCHOOL, 1700 E. 1st Ave., New York

Practical Auto School, 68-G Beaver St., New York

Mention Michigan Farmer when writing to advertisers

CHAPTER XIII.

Stillwell's interest in the revolution across the Mexican line had manifestly increased with the news that Gene Stewart had achieved distinction with the rebel forces. Thereafter the old cattleman sent for El Paso and Douglas newspapers, wrote to ranchmen he knew on the big bend of the Rio Grande, and would talk indefinitely to anyone who would listen to him. There was no possibility of Stillwell's friends at the ranch forgetting his favorite cowboy, though he always prefaced his eulogy with an apologetic statement that Stewart had gone to the bad.

Madeline had to listen to him though she was not always sure how much of the news was authentic. There appeared to be no doubt, however, that the cowboy had performed some daring feats. Madeline found his name mentioned in several of the border newspapers. When the rebels under Madero captured the city of Juarez, Stewart did fighting that won him the name of El Capitan. This battle apparently ended the revolution. The capitulation of President Diaz followed, and there was a feeling of relief among ranchers on the border.

Nothing more was heard of Gene Stewart until April, when a report reached Stillwell that the cowboy had arrived at El Cajon, evidently hunting trouble. The old cattleman saddled a horse and started post-haste for town. In two days he returned, depressed in spirit. Madeline happened to be present when he told Alfred what he had learned.

"I got there too late, Al," said the cattleman. "Gene was gone. An' what do you think of this? Danny Mains hed jest left with a couple of burros packed. I couldn't find what way he went, but I'm bettin' he hit the Pelonillo trail."

"Danny will show up some day," replied Alfred. "What did you learn about Stewart? Maybe he left with Danny."

"Not much," said Stillwell shortly. "Gene's off again. None of these mountains fer him."

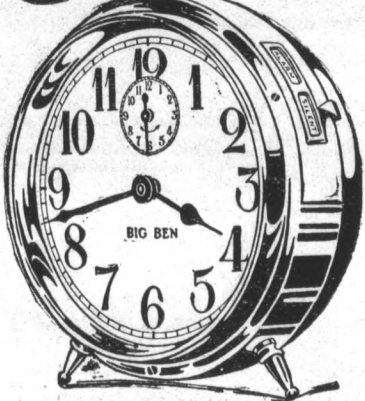
"Well, tell us about him."

Stillwell wiped his brow and squared himself to talk.

"Wal, it's sure amazin' strange about Gene. It's got me locoed. He came to El Cajon a week or so ago. He was trained down like as if he'd been ridin' the range all winter. He hed plenty of money—Mex, they said. All the greasers was crazy about him, an' called him El Capitan. They got drunk an' went roarin' round fer Pat Hawe. You remember that greaser that was plugged last October—the night Miss Majesty arrived? Wal, he's daid, an' people says that Pat is a goin' to lay that killin' onto Gene. I reckon that's jest talk, though Pat is mean enough to do it, if he hed the nerve. Anyway, if he was in El Cajon, he kept mighty much to hisself. Gene walked up an' down, up an' down, all day an' night lookin' fer Pat; but he didn't find him. An' of course he kept gettin' drunk. He made lots of trouble, but there was no gun-play. Mebbe that made him sore, so he went an' licked Flo's brother-in-law. That wasn't so bad. Jack sure needed a good lickin'. Wal, then Gene met Danny an' tried to get Danny drunk; but he couldn't! What do you think of that? Danny wouldn't touch a drop. I'm sure glad of that, but it's amazin' strange. Why, Danny was a fish fer red liquor. I guess he an' Gene hed some pretty hard words, though I'm not sure about that. Anyway, Gene went down to the railroad, got on an engine, an' was in the engine when it pulled out. I hope he doesn't hold up the train. If he gets gay over in Arizona, he'll go to the pen at Yuma, an' thet pen is a graveyard fer cowboys. I wired to agents along the railroad to look out fer him an' to wire back to me if he's located."

"Suppose you do find him, Stillwell—what can you do?" inquired Alfred.

Big Ben



—took first

prize in the alarm clock class at the San Francisco fair.

Big Ben was shown every day of the fair, almost ten months. He was judged on appearance, performance, pedigree. He carried off the Medal of Honor, the highest award on alarm clocks.

Big Ben is shown by all good jewelers. Ask to have him put through his paces. In the United States \$2.50. In Canada \$3.00.

Western Clock Co.

La Salle, Illinois Makers of Westclox

OFFICIAL
AWARD
RIBBON



PANAMA PACIFIC
INTERNATIONAL
EXPOSITION
SAN FRANCISCO
1915

Charles H. Moore
PRESIDENT

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

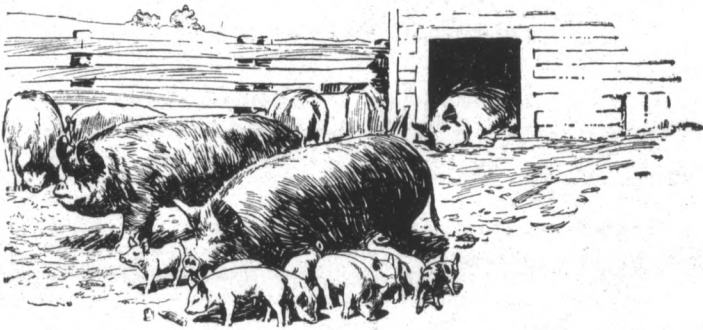
John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS

John C. Baker
DIRECTOR OF EXHIBITS



In every nook and corner of the farm, inside and outside of every building, in every field and at every turn of the lane there's a picture that should form a part of your

KODAK RECORD

Such pictures add interest and value to your written record. The making of Kodak pictures is very simple, and is less expensive than you think.

Catalogue free at your dealer's, or by mail.

EASTMAN KODAK CO., 389 State Street, ROCHESTER, N. Y.

HOOSIER STOVES & RANGES FREE

To try in your own home 30 days free, no matter where you live. Show your friends. Send it back at our expense if you do not want to keep it. Hundreds of thousands in daily use. Perfect bakers, efficient heaters, made of high grade material, beautifully finished, smooth design, guaranteed for years by our Two Million Dollar Bond.

Ask your dealer to show you Hoosier Stoves. Write for our big free book showing photographs, describing large assortment of sizes and designs to select from, explaining our free trial. Send postal today. Write your name and address plainly. No obligations.

HOOSIER STOVE CO.
131 State St., Marion, Ind.

GOOD SEEDS

GOOD AS CAN BE GROWN
Prices Below All Others

I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

Big Catalog FREE

Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

R. H. SHUMWAY, Rockford, Ill.

SCOTT'S FIELD SEEDS

Wet weather damaged nearly all seeds. Most are full of blasted grains and weeds. Buckhorn, Thistle, and Dock. Ours are not, and are far the cheapest to sow. Scarcity of good seed makes early buying advisable. Samples and instructions "How to Know Good Seed" Free. Write today. O. M. SCOTT & SONS CO., 36 Main St., Marysville, O.

STRAWBERRIES

Give the Quickest, Biggest and Surest Profits of Anything You Can Grow

The work is so easy and simple that even beginners make big profits from the start. Our free book tells how.

Kellogg's Everbearers

produce big crops of big, fancy berries from June until November. Light freezing does not affect their fruiting. The berries are in great demand. Price ranges from 30 to 45 cents per quart. Three months after plants are set, your profits begin. Our free book tells the rest.

A Kellogg Strawberry Garden

will add beauty, pleasure and profit to your home. Get our free book and learn how to supply your entire family with delicious strawberries the year round without cost.

Great Crops of Strawberries and How to Grow Them, the best and most complete strawberry book ever written. Fully explains the Kellogg Way. 64 pages of common sense, actual experience, strawberry facts, pictures galore.

Kellogg's free book, Kellogg's free service and Kellogg Pedigree Plants insure your success. Our book is worth its weight in gold—costs you nothing. Send for copy today. A postal will do.

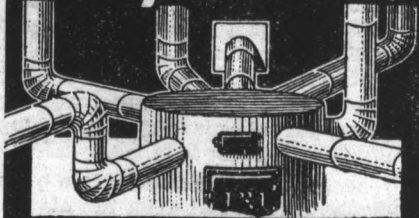
R. M. KELLOGG CO.
Box 575

Three Rivers, Michigan



FREE BOOK

Why Clutter



Your House

With pipes and flues? They cost money for labor and material, mar your house and waste fuel. Heating pipes are needless. The Caloric Pipeless Furnace heats the entire house with just one register. You get the greatest amount of heat with the least fuel consumption and the heat is uniform throughout the house. The

PIPELESS CALORIC FURNACE

can be easily installed in any house, new or old, because you don't have to cut holes for pipes. It burns coal, coke or wood and is guaranteed to save 35% of your fuel. You can easily and economically have this city comfort in your farm home. Avoid the labor of building fires, of carrying fuel and ashes up and downstairs. The Caloric lessens fire danger. Will not spoil produce in cellar.

Guarantee

The most unusual ever written. If the Caloric is not entirely satisfactory we'll make it so any time within one year. You take absolutely no risk. Write for

Free Catalog

Investigate now. If there is no dealer get our illustrated descriptive catalog free. The Monitor Stove & Range Co. 207 Gest St., Cincinnati, O.

THE COLEMAN AIR-O-LITE

Gives 300 candle power of good, strong, steady light. Can't blow out, or jar out. Made of heavily nickled brass. Burns 50 hours from one gal. of gasoline.

Fill It Only Once A Week

Clean it only once a year. No chimneys. No smoke. No soot. No smell. No danger even if tipped over. Can't spill. Can't explode. Guaranteed for five years. If not on sale in your town yet, write us for catalog of 20 different kinds of Coleman Gasoline Table Lamps, Lanterns, etc. Dealers or Agents wanted in every locality.

THE COLEMAN LAMP CO.
208 No. St. Francis, Wichita, Kas. 1008 Summit St., Toledo, O.
E. Sixth, St. Paul, Minn. 402 Akard, Dallas, Texas.
40 South Clinton Ave., Chicago, Ill.

PEAS OF QUALITY

You know how unsatisfactory your Garden Peas have been the past few years. Why Not Try SOME NEW SEED

grown in a virgin district—full of vitality—making strong, productive plants, bearing large pods filled with big, juicy peas, such as you used to grow. These and hundreds of other high-grade Garden and Farm Seeds described in our Illustrated Catalog, mailed Free if you will only ask for it.

It also contains the Most Generous Combination Offers ever made, affording a chance to try seeds from some of the world's most famous growers at a nominal cost. Plant DEPUY'S SEEDS as FIRST AID to GOOD CROPS.

The C. E. DePuy Co., Pontiac, Mich.

Only \$1.00

After Trial

Yes, you may keep this new Edison—and your choice of records too, for only a single dollar. Pay the balance at rate of only a few cents a day.

Free Trial Try the new Edison in your own home before you decide to buy. Have all the newest entertainments. Entertain your friends. We will send it to you without a penny down. Write Today For Our New Edison Book. Send your name and address for our new book and pictures of new Edison phonographs. No obligation. F. K. BABSON, Edison Phonograph Distributors 4932 Edison Block, Chicago, Illinois



Make Your Waste Acres Produce

Clear that idle land. Remove the stumps and boulders. Straighten the crooked creeks. Improve your soil. Increase your crops and the value of your farm. Remove the handicaps that hinder your work and profits.



Red Cross Farm Powder

will help you clear land quickly, easily and cheaply. Get those unproductive acres in working order now and crop them early this spring. Thousands of farmers everywhere have found Red Cross Farm Powder a wonderful help.

Big Book Free

contains 188 pages of interesting facts. Explains the use of Red Cross Farm Powder for land clearing, subsoiling, ditching, tree planting and many other things, and tells how this modern farm help has solved for other farmers the very problems that perhaps now bother you. Write today for

Hand Book of Explosives No. 100F
E. I. Du Pont De Nemours & Co.
Wilmington Delaware



NEW OIL LIGHT

Beats Electric or Gasoline

Write FREE BOOK for telling all about the wonderful new Aladdin Mantle Lamp that burns 50 hours on a gallon kerosene (coal oil). No odor, smoke or noise. Tests by Government and 33 leading universities show it gives twice as much light as best round-pure, white, steady light that saves the eyes. Won Gold Medal at the Panama Exposition. Guaranteed.

10 Days Free—Send No Money

When we send you the Free Book, we will tell you how you can try the Aladdin 10 nights in your own home without risking a cent—we even prepay charges. Be the first to write from your locality and get our special introductory offer. Write our nearest office today for Free Book and particulars of free trial.

MANTLE LAMP CO., 1253 Aladdin Bldg., Chicago
—Largest Coal Oil Mantle Lamp House in the World—
Also offices at New York City, Portland, Montreal, Winnipeg

YOU CAN MAKE BIG MONEY

delivering the Aladdin among neighbors. Sample Free to responsible men who show us they mean business. Give full information how long you have lived in community, whether have rig or auto to work in country, what territory you prefer, etc. We furnish capital—no investment necessary. Write quickly before territory is taken.

Edison

"Safety First" on the Farm
Electric light has no flame. Safest for barns and outbuildings as well as the home. The

Edison Storage Battery Co.
237 Lakeside Ave. Orange, N. J.
Distributors Everywhere

Storage Battery
Government Farmers Wanted. \$80 to \$125 monthly. Write, OZMENT, 17 F. St. Louis.

The old man nodded gloomily. "I straightened him up once; mebbe I can do it again." Then, brightening somewhat, he turned to Madeline. "I jest had an idea, Miss Majesty. If I can get him, Gene Stewart is the cowboy I want fer my foreman. He can manage this bunch of cow-punchers that are drivin' me dotty; an' since he's fought fer the rebels, an' got the name El Capitan, all the greasers in the country will kneel to him. Now, Miss Majesty, we hev'n't got rid of Don Carlos an' his vaqueros yet. To be sure, he sold you his house an' ranch an' stock; but you remember nothin' was put in black an' white about when he should get out, an' he ain't gettin' out. I don't like the looks of things a little bit. I'll tell you now that Don Carlos knows somethin' about the cattle I lost an' that you've been losin' right along. That greaser is hand an' glove with the rebels. I'm willin' to gamble that when he does get out, he an' his vaqueros will make another one of the bands of guerillas that are harrassin' the border. Wal, I need Gene Stewart. I need him bad. Will you let me hire him, Miss Majesty, if I can get him straightened up?" The old cattleman ended huskily.

"Stillwell, by all means find Stewart and do not wait to straighten him up. Bring him to the ranch."

Thanking her, Stillwell led his horse away.

"Strange how he loves that cowboy!" murmured Madeline.

"Not so strange, Majesty," replied her brother; "not when you know. Stewart has been with Stillwell on some hard trips into the desert alone. There's no middle course of feeling between men facing death in the desert. Either they hate each other or love each other. I don't know, but I imagine Stewart did something for Stillwell—saved his life, perhaps. Besides, Stewart's a likable chap when he's going straight. I hope Stillwell brings him back. It's true that we are worried about Don Carlos. Some of his vaqueros came into my yard the other day when I had left Flo alone. She had a bad scare. The vaqueros have been different since Don Carlos sold the ranch. I never would have trusted a white woman alone with them; but they are bolder now. They have got assurance. They know they can ride off any night and cross the border."

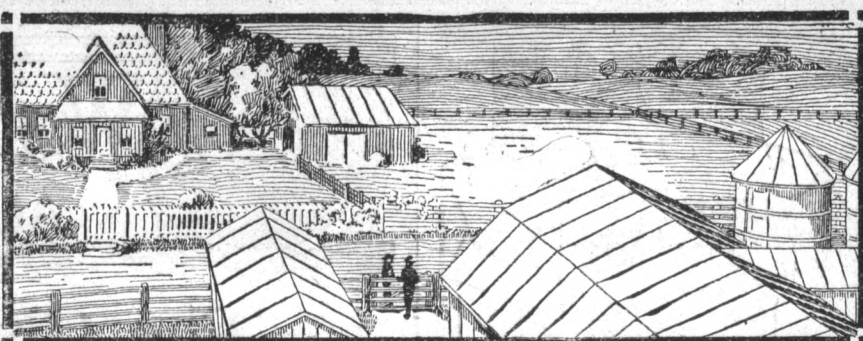
During the succeeding week Madeline discovered that a good deal of her sympathy for Stillwell in his hunt for the reckless Stewart had insensibly grown to be sympathy for the cowboy. It was rather a paradox, she thought, that opposed to the continual reports of Stewart's wildness as he caroused from town to town were the continual expressions of good-will and faith and hope universally given out by those near her at the ranch. Stillwell loved the cowboy; Florence was fond of him; Alfred liked, admired, and pitied him; the cowboys swore their regard for him the more he disgraced himself.

Stillwell was so earnest and zealous in his search that one not familiar with the situation would have believed he was trying to find and reclaim his own son. He made several trips to little stations in the valley, from which he returned with a gloomy face. Madeline got the details from Alfred. Stewart was going from bad to worse—drunk—disorderly—savage—sure to land in the penitentiary.

Then came a report that hurried Stillwell off to Rodero. He returned on the third day, a crushed man. He had been so bitterly hurt that no one, not even Madeline, could get out of him what had happened. He admitted finding Stewart and failing to influence him; but when the old cattleman go so far he turned purple in the face and talked to himself, as if dazed.

"But Gene was drunk. He was drunk, or he couldn't hev treated old Bill like that!"

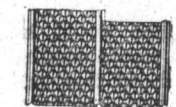
(Continued next week.)



This Roof Lasts Longer



"You'll remember this brand"



Globe Inter-locking Metal Cluster Shingles



Globe Inter-locking Metal Roofing



Any building that is not covered with good metal roofing is an impractical and expensive investment.

Where wood is used, there is always danger from wind, lightning and fire.

Wood lasts only a few years and leaks may develop over night which will ruin your stored crops—the result of the season's labor.

There are thousands of farmers who will not chance such a risk.

They know that it is more sensible and businesslike—that it is cheaper to use

Globe
METAL PRODUCTS

Roofings, Sidings, Cluster Shingles, Silos, Garages, Culverts, Rat-proof Corn Cribbs, and for other interior and exterior uses.

Large users of metal building materials know from experience that "Globe Brand" sheet metal products are the best—not because they cost more but because they last longer.

And we build lasting and rust-resisting quality into "Globe Brand" sheet metal products in our own Steel Plant, Rolling Mills, Galvanizing Works, and Roofing Factories.

Before buying building materials of any kind either for repair work or for putting up new structures, send for our 1916 Catalogue and find out the many uses and great economy of "Globe Brand" sheet metal products. This catalogue has saved thousands of dollars for other men—why not you?

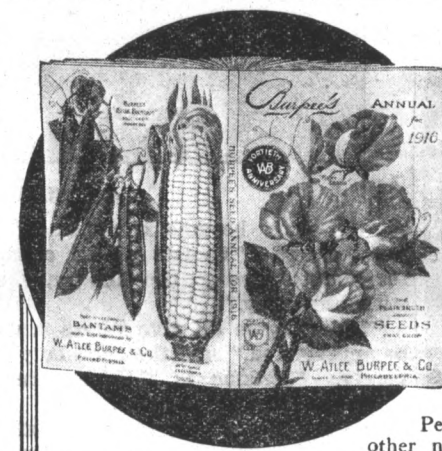
Mail this coupon or write a postal or letter

THE GLOBE IRON ROOFING AND CORRUGATING CO.
204 Newport St. Cincinnati, Ohio

Send me your big 1916 Catalogue and Farmer's Handy Book Free, Postpaid.

Name..... Town.....

State..... R. F. D.....



Burpee's Seeds Grow

The Fortieth Anniversary Edition of Burpee's Annual, The Leading American Seed Catalog for 1916, is brighter and better than ever before. It

offers the greatest novelty in Sweet Peas, the unique "Fiery Cross", and

other novelties in Rare Flowers and Choice

Vegetables, some of which cannot be had elsewhere. This book of 182 pages

tells all about proved and tested Seeds. It is mailed free. A post card will

bring it. Write today and please mention this publication.

W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia

Buy Your Seeds Direct From Grower

This Book For Michigan Growers Tells You How
Isbell's 1916 Seed Annual—the most complete seed catalog and book of cultural instruction ever published—now ready. Send for it. Isbell seeds are Michigan grown—produce abundant yields—especially adapted for Michigan soil. Buy from home growers. Isbell's book shows you how to get bigger yields. Write for copy today.

Isbell's Earlibell Tomato—Quickest Grower Known
This variety puts ripe tomatoes on your table 5 days before the Sparks Earliana. Merely one of our great variety of high-yielding seeds, perfected by 37 years of scientific breeding and selection. A postal will bring this book to you. It's time to prepare for a better garden now. Write today.

S. M. Isbell & Company, 804 Pearl St., Jackson, Mich.

SWEET CLOVER SWEET CLOVER

White Blossoms; the greatest money-making crop of today. Wonderful opportunities for the farmer who starts growing it. Builds up worn land rapidly and produces heavy, money-making crops while doing it. Excellent pasture and hay; inoculates your land for alfalfa. Easy to start; grows on all soils. Our seed all best scarified, hulled, high-germinating and tested. Quality guaranteed. Write today for our big, Profit-Sharing Seed Guide, circular and free samples. **AMERICAN MUTUAL SEED CO., Dept. 931 43d and Roby St., Chicago, Illinois.**

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE
The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. Easy to start, grows everywhere, on all soils. Don't delay writing for our Big 100-page free catalog and circular giving full particulars. We can save you money on best tested, guaranteed, scarified seed. Sample Free. Write today. **A. A. BERRY SEED CO., BOX 981 CLARINDA, IOWA**



**Spend pennies
get back Dollars!**

ONCE get a reputation for making the best butter, and you'll never have trouble getting fancy prices for all you can produce.

This year, just go a step beyond good stock, careful feeding and careful churning. Use Worcester Salt—the salt that dissolves freely without grit or mottles. Top-notch butter makers bring out their prize-winning flavor with clean, sweet tasting Worcester Salt.

Try Worcester Salt in your next churning. Taste the result. See if it won't pay you to use it regularly.

WORCESTER SALT

The Salt with the Savor

Packed in strong Irish linen bags, 28 and 56 lbs. Smaller sizes in muslin. At your grocer's.

Send for our interesting booklet, "Butter Making on the Farm." It's free.

WORCESTER SALT COMPANY
Largest Producers of High-grade
Salt in the World
NEW YORK



Cash or Credit—Unbeatable Quality

We pay freight and ship within 24 hrs.

Write for Wholesale Price

on this beautiful Kalamazoo Mission Range—and 500 other styles and sizes of stoves and ranges shown in our new catalog—latest improvements—the best of quality—at low factory-to-you price. 30 days' trial—80 days' approval test. We also make Malleable Steel Ranges. Ask for catalog No. 113.

KALAMAZOO STOVE CO., MFRS.
Kalamazoo, Mich.

"A Kalamazoo Direct to You"

Sunshine Lamp 300 Candle Power FREE

To Try in Your Own Home

Turns night into day. Gives better light than gas, electricity or ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.

SUNSHINE SAFETY LAMP CO.
640 Factory Bldg., Kansas City, Mo.

To get rid of rats get

RID-OF-RATS

Non-Poisonous. Guaranteed to destroy the rat and mouse pest from corner bins, poultry houses, stables, etc. No results, no pay. Box 10c; Doz. boxes \$1 east of Miss.; \$1.20 west of Miss. If your dealer can't supply you order direct. Write for catalog, it tells the story.

Berg & Board Mfg. Co. 61 Fleet Pl., B'klyn., N. Y.

Mention The Michigan Farmer When Writing Advertisers



Woman and Her Needs At Home and Elsewhere

The Giving Habit

IF I had money, I'd do good with it," remarked a woman the other day. "I'd never heard it the way some folks do. I'd see that some young man or young woman got an education, or I'd take care of some orphan child or some old man or old woman whose relatives had turned against them. I never can see how wealthy folks can be so selfish and stingy. I'm sure I'd not be that way if I had money."

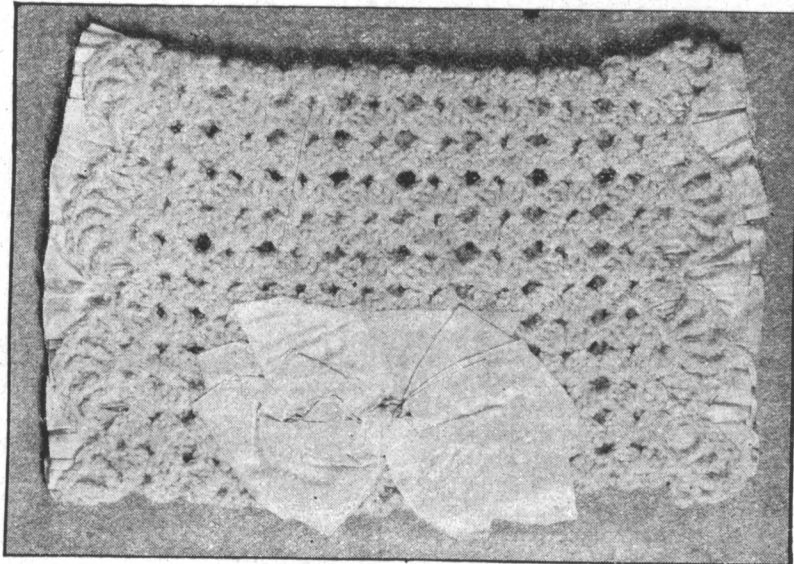
"Jenkins's folks would have been delighted with those apples you let rot in your orchard last fall," I suggested warily. "They had a hard year, and Mrs. Jenkins never got a bit of fruit of any sort for winter."

"Humph!" sniffed the generous lady indignantly. "Do you think I'm going to get that worthless pack in the habit of running here for everything? They would eat me out of house and home."

"But they're poor, and you need not

of some orphan or old man or woman whose relatives had turned against them." In such a case there would be a chance for public praise, but with Aunt Martha no one would praise her at all; they would be more apt to think she had only done her duty.

It's the way a large number of us are constructed. We do a lot of dreaming about what we would do if we were differently situated or had the millions of Rockefeller. But as a matter of fact, we would do about as we are doing now. If we give with our present income, we would keep on giving with an increased one. If we fail to see the little chances for service and generosity about us now, we would never see them with enlarged opportunity and fatter pocketbooks. The man who is generous by nature will see chances to give if he has but \$10 a week, while he who is miserly will never do anything for others if he has



A Muff Mother Can Make.

give if they became a nuisance," I pointed out. "There's a fine chance for you to give to the hungry, even without money."

"When I give I'll give where it will be appreciated," said the good lady severely. "Jenkins is shiftless, that's what ails them."

And so, because the poor were right at her door and there was no glamour about them, she let the family suffer because she considered the father as shiftless. In her cellar were three or four hundred cans of fruit and vegetables, some left over for two and three years back, and dozens of glasses of jelly, and a half-dozen families in the neighborhood would not taste fruit all winter. Much that she had would remain over and be added to next summer, but she could not give because she was not "wealthy," and because these "poor she had always with her." They were the unromantic Smiths and Browns and Jones of her own neighborhood, not some person in a far off city of whom she read in her paper.

In the next township lived her own mother's only sister, widowed and childless, a charge on the town. But our good friend saw no reason why she should provide for her. She was only old Aunt Martha, half blind, dowdy, helpless and penniless. Surely no one could expect my neighbor to take the old woman into her home and kill herself taking care of her when there wouldn't be a penny coming to her after the old aunt died. Yet, "if she only had money she would take care

\$1,000 a week. It is not at all a question of money but of spirit.

It's a fine habit to get into the habit of giving, and it is an easy one to acquire. All of us have something we can give. It may not be money or canned fruit or the surplus of apples and vegetables. Perhaps we can give nothing but time, but a half hour a day given to the service of your neighbor might do her more good than much gold. And if we can't give anything else we can all give cheeriness. That would not be easy for some of us chronic grouches. But by a tremendous effort we might change our mental outlook and be ready to give a smile instead of a groan or a scowl.

Whatever it is you have to give, know if you do not give now you never will.

DEBORAH.

A CROCHETED MUFF FOR LITTLE DAUGHTER.

BY GRACIA SHULL.

Make a chain (ch), of 52 stitches, turn.

First Row.—Treble crochet 1 in eighth stitch from hook. * ch 2, skip 2, treble crochet (tr c), 1 in next. Repeat * to end of row. Ch 3, turn.

Second Row.—*Double crochet (dc), 3 in first space. Repeat from * to end of row. Ch 6, turn.

Third Row.—Same as first.

Fourth Row.—Same as second.

Fifth, 7th, 9th, 11th, 13th Rows.—Same as first.

Sixth, 8th, 10th, 12th Rows.—Same as second.

Fourteenth Row.—Chain 3, dc 2 in first space, ch 3, dc 3 in same place, single crochet (sc), in next space, * dc in next space, ch 3, dc 3 in same place, sc 1 in next. Repeat from * to end of row. Ch 2, turn.

Fifteenth Row.—Shell in shell to end of row.

Sixteenth, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th Rows.—Same as 15th.

This completes front and back. Slip ends together with hook and yarn.

Ends of Muff.—The thread need not be broken to begin on the first end.

* Chain 2, double treble (dt) 1 in first space. Repeat from * until there are 5 dt in the same space, ch 2, sc 1 over center of next space. * Repeat from first * around end of muff. Repeat in same way for other end. Trim ends with a full frill of narrow pink ribbon under scallops. Line with outing, wool, eiderdown or any desired material. Finish with a wide ribbon bow at center top of muff in front. The muff may be made larger by adding more stitches to the foundation chain and by adding more rows. White yarn is used in this design—any desired color may be used, however.

FOR THE ST. PATRICK'S DAY PARTY.

BY GRACE M. TAYLOR.

Probably some who are going to give a St. Patrick's day party will be wanting games or other amusements which are appropriate for the occasion. Here is a "Pat" love story which will help fill out the evening. Small prizes might be given, a pretty St. Patrick's day booklet with verses for the one having the nearest correct list of answers, and a bow of green ribbon, an Irish potato or a toy harp for the one having the least number of correct answers. Here are the questions:

1. A common name for an Irish lad?
2. To what country in South America did he intend to go?
3. What girl did he meet who persuaded him not to go?
4. On what condition did he say he would remain at home?
5. What serious fall did she take?
6. When were they married?
7. What did he say his wife was to other women?
8. What kind of a face did she have?
9. What did she call him?
10. What did she bake for his supper?
11. How did she keep him?
12. What did he wear after he was married?
13. What did he become after they moved to the city?
14. What did he succeed in doing with his invention?
15. How did she show that she was pleased about it?
16. What did they then do at the bank?
17. What came to gladden their hearts?

Here are the answers expected. The hostess should, of course, explain at the beginning that "pat," used either as a full word or as a part of a word must be used in the answer to each question.

1. Patrick.
2. Patagonia.
3. Patricia.
4. If she would love Patrick.
5. She fell in love with Patrick.
6. St. Patrick's day in the morning.
7. A pattern to them.
8. A patrician face.

9. Just "Pat."
10. Patty cakes.
11. "Right down pat."
12. Patches.
13. A patrolman.
14. Getting it patented.
15. By giving him a loving pat.
16. They patronized it.
17. A little Pat.

DIRECTIONS FOR CORNING BEEF.

Use the cheaper cuts of meat from the lower part of the body. Cut into convenient chunks of about equal thickness. Pack the meat first in salt, using eight pounds of salt for each 100 pounds of meat. After the meat has remained eight to 12 hours in the salt pack, add a brine composed of four pounds of sugar, two ounces of baking soda, four ounces of saltpetre, dissolved in four gallons of water. This should be enough to cover the meat, but if not, add more water. Put a weight on the meat to keep it beneath the brine, as any exposed parts will spoil.

Keep the vessel in a cool place, and leave the meat in the brine until you are ready to use it. If the brine appears rosy or thick, pour it off, wash the meat and repack it in new brine. The brine on corned beef must be watched closely, as the slightest tainting of the brine results in soured meat, beef spoiling much more readily than pork.—Colorado Agricultural College.

CANDIED CRANBERRIES.

Candied cranberries make a delicious and inexpensive confection, much resembling candied cherries but having a distinct flavor. This is a suggestion to housewives from the home economics experts of the U. S. Department of Agriculture. They have developed a method which if followed closely gives a bright, firm, plump, semi-transparent candied fruit which can be eaten as a sweetmeat or used to give a touch of color to frosted cakes, whipped cream, or custards, or which can be used like citron in cakes or puddings or chopped up and added to "tutti-frutti" ice cream.

The secret of candying cranberries lies in handling the fruit so that it will become saturated with sugar. This calls for slow cooking on the installment plan and the use of a dish large enough to permit all the berries to float at the top of the syrup during cooking. The skins are so tough that they must be pierced before cooking to let the syrup into the interior. To do this, three little slits, each one-eighth of an inch long, should be made in each berry with the point of a pen-knife. Use selected large, firm cranberries. The direction for cooking are as follows:

For one and a half cups of berries, make a thin syrup by boiling together until clear two cups of sugar and two and a half cups of water. When the syrup is cool, add the berries and bring very slowly to the boiling point. If the berries are heated too quickly, the skins will burst before the syrup soaks into the pulp. As soon as the syrup boils, take the dish off the stove and let it stand over night. Next day, drain the syrup from the berries and boil it until it is reduced to about half its original volume. Put the berries into this medium-thick syrup and heat slowly; boil gently for three or four minutes, then allow to stand for two hours or more. Then boil gently a third time for five minutes. A smaller dish probably will be needed for the third and last boiling. When thoroughly cold, or better still, on the following day, drain off the syrup and spread the berries out on a lightly buttered plate or a sheet of clean, waxed or lightly buttered paper until the surface of the berries dries. The berries, if directions have been followed, will candy separately and not into a sticky mass.

To make a delicious ice cream, add half to three-fourths of a cup of chop-

ped berries to each quart of the cream mixture. They also can be combined with bits of candied orange or lemon peel, or other glace fruits to make "tutti-frutti" ice cream. The syrup left over after the berries are candied has a pleasant sweet-acid flavor and fine color and is excellent in pudding sauce, or even when diluted with water, for use on pancakes, waffles, etc.

HOME QUERIES.

Household Editor:—I always enjoy looking over the "Home Queries," but have never written before. Someone asks what is the matter with her cucumber pickles? Take one gallon of pure cider vinegar, one cup of sugar, one cup of mustard, one cup of salt, one tablespoon of celery seed and one tablespoon of turmeric if you like. Put all together and boil for five minutes. Pack cucumbers in cans and when vinegar is cold fill cans and seal. I sometimes take large cucumbers, pare them and cut into rings for a change.

Another recipe that I have used for years is: Wash cucumbers, pack into cans, put in two tablespoons of salt and one tablespoon of mustard. Or you can just use the salt and cover with pure cider vinegar and seal. Either way will keep the year round.

Someone asks for recipe for pickling or canning hearts and tongues. Boil hearts and tongues in water, salted to taste, until tender, slice, pack in cans, cover with pure cider vinegar and seal. These will keep all summer.

A beet pickle recipe that I think is very good is as follows: One and one-half quarts vinegar, one and one-half cups sugar, one-fourth cup salt. This will cover three quarts of beets that have been boiled and sliced into cans. Seal.—Mrs. R. H. P., Williamston.

MICHIGAN FARMER PATTERNS.

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



No. 1380—Ladies' Apron. Cut in 3 sizes, small, medium and large. It requires 6 1/4 yards of 36-inch material for a medium size. Price 10c.

No. 1576—Junior Dress. Cut in 3 sizes, 6, 8, 10 and 12 years. It requires 2 1/2 yards for the guimpe, and 3 3/4 yards of 36-inch material for skirt and bretelle for a 14-year size. Price 10c.

No. 1452—Girls' Dress. Cut in 4 sizes, 6, 8, 10 and 12 years. It requires 3 yards of 40-inch material for a six-year size. Price 10c.

No. 1295—Girls' Drawers, Petticoat and Under Waist. Cut in 6 sizes, 2, 4, 6, 8, 10 and 12 years. The drawers require 1 1/2 yards of 36-inch material, the petticoat requires 2 yards, and the underwaist 1 1/2 yards for a 10-year size. Price 10c.



"How's That for a Minute's Work?"

You who live on a farm or in a small town can serve the same delicious desserts (like the one above) that have lately become so popular in the best city homes, for Jell-O, from which these desserts are made, is now sold by grocers and general store-keepers everywhere. You can get it where you trade.

JELL-O

doesn't have to be cooked, and only boiling water is added to the powder from the 10-cent package of Jell-O to make a perfect Jell-O dessert. Both time and money are saved, and the dessert is delicious and beautiful as a gem.

Jell-O is made in these seven different pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Cherry, Peach, Chocolate. Each 10 cents at any grocer's or any general store.

In every package there is a little folder with pictures and recipes and full instructions for making up Jell-O in the popular forms that are all the fashion now.

A beautiful new Jell-O Book telling of a young bride's housekeeping experiences has just been issued. It has splendid pictures in colors and will interest every woman. It will be sent to you free if you will send us your name and address.

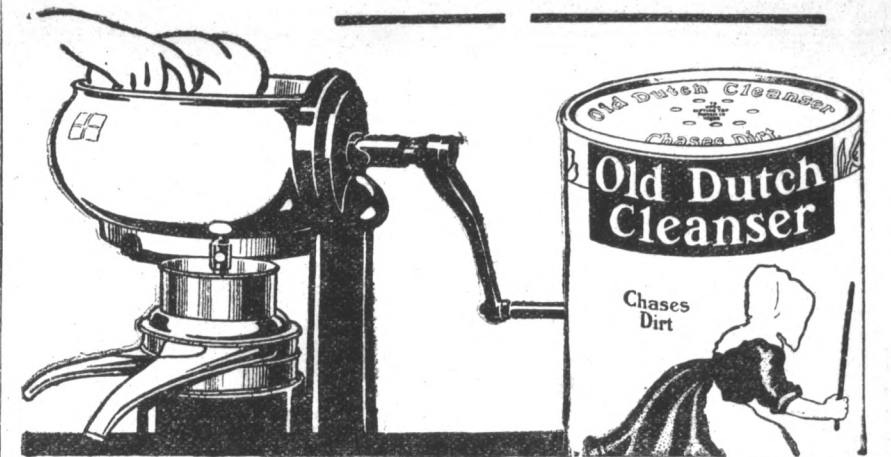
10¢
a package

THE GENESEE PURE FOOD CO.,
LeRoy, N. Y., and Bridgeburg, Ont.
The name Jell-O is on every package in big red letters. If it isn't there it isn't Jell-O.



For your separator you want a Cleaner that cleans hygienically without leaving a greasy film — use

Old Dutch



HEALTH COMFORT

Do away with the dangerous, unsightly, unsanitary outhouse. Enjoy the city comfort and convenience of a warm, odorless, sanitary indoor toilet. Protect your health. The

WOLVERINE Sanitary Closet

is a comfortable, permanent scientific substitute for the disease-breeding, water-polluting, foul outdoor privy. No water, sewer or plumbing. Endorsed by health officials. A cent a day operates it. Send for literature today.

Dall Steel Products Co.
605 Main St., Lansing, Mich.

Money Back Guarantee

STRAWBERRIES All Varieties Catalog Free

Rokely's famous Michigan plants. Only hardy well rooted stock. All varieties—Strawberry & Raspberry, Blackberry, Currant, etc., including the EVERBEARING STRAWBERRY. Write today sure for free catalog. BOX 86, BRIDGMAN, MICH.

20 Packets Seeds—10c.

We want every reader to test "HARRIS SEEDS THAT HUSTLE." Send 10c. now—before you forget for this mammoth collection. We send you 20 separate packets finest varieties—one each of Beets, Carrot, Cabbage, Celery, Cucumber, Lettuce, Cress, Muskmelon, Watermelon, Onion, Parsley, Parsnip, Radish, Salsify, Spinach, Tomato, Mixed Poppies, Giant Cosmos, Double Jap Calendula and Children's Botanical Garden, a curiosity collection of flower seeds. With this collection we send rebate check for 10c. and big catalog of world's finest seeds.

HARRIS BROS. SEED CO., 350 Main St., Mt. Pleasant, Mich.

STRAWBERRY AND SMALL FRUIT PLANTS

Reliable Northern Grown Plants, Ornamental, Shrubs and Gladioli. We grow, sell direct, guarantee to please. Write for free illustrated Plant Book. Address R. J. Stahelin, the St. Joseph Nursery, Box 461, St. Joseph, Michigan

NEW STRAWBERRIES CATALOG

Reliable, interesting and instructive—All about the New Everbearers and other important varieties. Address C. N. FLANSBURGH & SON, JACKSON, MICH.

WHOLESALE PRICES

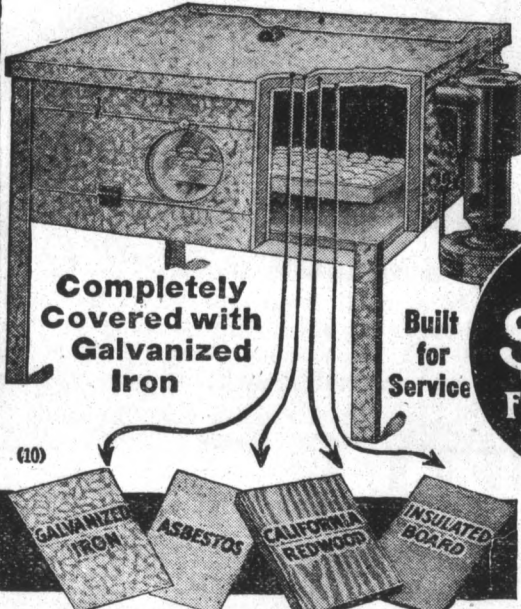
on Strawberry Plants. Many other varieties and garden roots at reasonable prices. Catalogue FREE. Write today to A. L. WESTON & COMPANY, BRIDGMAN, MICHIGAN

Ironclad

TRADE MARK

Wins in the Two BIGGEST HATCHING Contests Ever Held

Why take chances with untried machines when for only \$10 we guarantee to deliver safely, all freight charges paid (East of the Rockies) BOTH of these big prize winning machines fully equipped, set up ready for use? Why not own an Ironclad—the Incubator that has for two years in succession won in the GREATEST HATCHING CONTESTS EVER HELD? In the last contests conducted by the Missouri Valley Farmer and Nebraska Farm Journal, 2,000 Machines were entered, including practically every make, style and price. With 140 Egg Ironclad—the same machine we offer with Brooder, freight paid, for only \$10, Mrs. C. F. Merrick, Lockney, Texas, hatched 148 chicks from 148 eggs in last contest.



We Give 30 Days Trial — Ten Years Guarantee

You have nothing to risk. We will send machines—let you use them 30 days—urge you to compare them in quality of material, hatching ability, workmanship and price—and if you don't find them satisfactory, send them back—we'll pay the freight charges and return your money. You are absolutely safe. We have to do as we advertise. If we didn't the publishers of this paper would not carry our advertising.

Both for
\$10
Freight Paid
East of Rockies



This Book
Sent FREE

It tells how Ironclads are made and why they win in the Big Hatching Contests.

140 EGG INCUBATOR CHICK BROODER

When an incubator is constructed of material of this kind it gives you the strongest and most durable incubator that can be made—a machine that will not warp or shrink, or open up at the seams, as every joint is lapped over with our galvanized iron covering—giving you a machine that will last a life time. Don't class this big, all-metal-covered dependable hatcher with cheaply constructed machines. Ironclads are not covered with tin or other thin metal and painted, like some do to cover up poor quality of material. Ironclads are shipped in their natural color—you can see exactly what you are getting. Don't buy any incubator until you know what it is made of. Note these Ironclad Specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Galvanized iron legs, large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boilers, self regulator, Tyco's Thermometer, glass in door, complete book of directions, and many other special features fully explained in free catalog. Write for it today or order direct from this advertisement and save time.

IRONCLAD INCUBATOR CO., Box 117 Racine, Wis.

Successful Hatching Essentials

At this time of the year many farmers are contemplating the purchase of an incubator and after five years' experience with one, I do not hesitate to say that no one need be afraid to attempt the running of an incubator, if she is willing to tend it regularly twice each day. The directions given by the manufacturers are so clear, that they enable anyone who can read to run one with good success, providing she uses good common sense in the selection and care of eggs before they are put in the machine.

As to the strength of incubator chicks, I wish to say that after a five-year trial of both hen-hatched and incubator chicks, raised side by side, I very much prefer the incubator chicks, if the machine has been run at the right temperature throughout the entire hatch. If this has been done you are assured of nice healthy chicks and the greatest satisfaction I find in them is the fact that they are never troubled with lice of any kind. If kept by themselves in nice clean quarters you never need to worry about lice.

Use Eggs from Healthy Fowls Only.

The first step toward success is to hatch eggs from healthy fowls only, having them as near the same age as possible, and as fresh as can be had. When saving eggs to hatch I wrap them in paper, pack tight in shallow boxes and turn the boxes over each day.

Never handle the eggs with soiled hands, turn the eggs first, tending to the lamp while they cool, and be very sure to cleanse the hands before returning the tray to the machine, as kerosene or grease will spoil the eggs.

When turning the eggs I lay the first two rows out on a cloth, putting the center ones on the outside and vice versa, as much as possible, turning the tray around each time it is put in the machine. This is so that the eggs will all get about the same amount of heat all through the hatch. In some machines, the eggs in the center do not get as much heat as the ones on the outside, and if changed every time you will get a better hatch than you would if they were not changed.

When the eggs are first put in the tray make a cross on the upper side of each with a pencil and when they are turned be sure the marks are either all up, or all down, and you are sure that each egg has been completely turned over. Be sure that the large end of the egg is a little the highest, for the head should form in this end and I think this in a measure prevents cripples as I usually have very few.

A Convenient Method of Testing Eggs.

A flash-light beats anything in the tester line that I have ever tried. Pull one-half of the tray at a time off the table, holding the light under the tray, and every bad egg shows up as soon as the light is under it, and obviates the tedious handling where the eggs are tested one at a time, although I have had some very good hatches, when the eggs were not tested at all.

One rule I never break and that is, I never open the incubator door after the eighteenth day, until the twenty-second day. I learned this by opening the door so visitors could see the "dear little things," and having the greater part of a large hatch die in the shell. They were dear, indeed. Opening the door to set up the thermometer when it was kicked over by the chicks first hatched, has prevented many a good hatch. The air dries the membrane where the chick has opened the shell, and toughens it so the chick cannot get out. This is responsible for most of the chicks that break through the shell and yet are unable to get out.

Most of the machines have a device for hanging up the thermometer but anyone can easily do this if they have a couple of screw-eyes and a bit of

Make Farm Poultry-Raising Profitable

THIS is the finest, cheapest, most efficient hatcher I have been able to produce after thirty years. Thousands have proven it perfect in heat, moisture and ventilation. Round like a nest, just the right size, 66 eggs, for economy, convenience and results. Fitted with famous Sheer Automatic Features, and guaranteed to hatch every hatchable egg. The 1916 delivered, for \$6.60, is the only practical, all-metal, fire-proof, overlying hatcher ever produced. Hot water or hot air heat, at the same price. It's the REAL FARM INCUBATOR. Send for big book, FREE—or better yet, send your order today at this special price. No freight to pay. Pacific Coast price, \$7.00. **H. M. SHEER COMPANY,** 205 Hampshire St., Quincy, Illinois. GLOBE GRAIN & MILLING CO., Pacific Coast Distributors, Los Angeles, Cal.

"LAWN PARK" COOP

Saves Your Chicks
The Wire Park, which pulls out like a drawer, gives hen and chicks fresh grass, air and sunshine during the day; closes at night and in storms. This coop meets every demand; portable, with removable floor for easy cleaning; roomy, light, durable, sanitary.

IT TELESCOPES! **PROOF Against Hawks, Rats, Weasels, etc.**
Made of galvanized metal; repels vermin. Size, open, 18 in. x 24 in. x 48 in. Pays for itself in chicks and labor saved. Write today for free circulars, special prepaid offer and how to turn work into pleasure and profit. **CYCLONE MFG. CO., DEPT. L, URBANA, IND.**

DETROIT CUTS THE COST

Here is the low priced famous Detroit Incubator—a wizard egg hatching machine, simple and reliable. Big hatches a sure thing. Large production makes my price low. Send Post Card now for my free book and a startling price offer. **HOMER L. SMITH, Pres.** (1) Detroit Incubator Co., 438 Campbell Ave., Detroit, Mich.

PERFECTION SANITARY CIRCULAR METAL BROOD COOP

made entirely of galvanized iron which will last a life time. They are properly ventilated, and are Rat, Mink, Weasel and Skunk proof. Just the coop you are looking for. Write for circular & special introductory prices. **Perfection Metal Brood Coop Co., Box 47-V, Warsaw, Ill.**

Crown Bone Cutter

EASIEST, Fastest, Feed fresh cut bone and get more bone, higher fertility. Also dry Bone, Grain, Fertilizer and Shell Mills. All Sizes. Hand and Power. Write to-day for Free Illus. Catalog. **WILSON BROS., Dept. 30 Easton, Pa.** \$2.50 for 25 to 50 CHICK HOVER
Made of Galvanized Steel. Can be used in any box. Safe and durable. Hot water heat. All complete. Incubator book free. We make 73 different articles. **WENDELL INCUBATOR CO., Holly, Mich.**

Get This Cyphers Poultry Guide FREE

Superior Hot-Water Incubator Two Sizes

Columbia Hot-Air Incubator Two Sizes

Standard Cyphers Incubator Four Sizes

Make Big Profits with Cyphers Co. Helps Send for this big, illustrated year-book, "The Profits in Poultry Keeping," 172 pages—a complete birds'-eye view of poultry raising. Shows you how to make more money with chickens—raise more of them with less work—get more eggs. Write today—now is the time to get started. Make big hatches in

Cyphers-Built Incubators Sold at Low Prices

Used by the big leaders in the poultry business. Quality unequalled. The biggest poultry successes of the past 20 years have been made with Cyphers machines—would not have been made without them. Dependable in any weather—self-regulating—self-ventilating. Hatch out maximum number of strong, healthy chicks that live and grow.

Write Today Start hatches early—with Cyphers certainty of results. Get this big book and make your poultry foods, etc. Also tells about "Cyphers Service," books and bulletins that we send free.

CYPHERS INCUBATOR CO. Dept. 35 BUFFALO, N. Y.
New York Boston Chicago Kansas City Dallas Oakland

Cash For Prime Table Fowls

JOIN the profit makers. Develop top notchers for the market in the shortest time—by scientific feeding. You can feed Red Comb, the great flesh-making and egg-making feed, cheaper than you can mix the materials. Least grit, percentage guaranteed on each bag; no grit if preferred. Ask your dealer. Write for free book "Feeding Poultry for Profit."

Edwards & Loomis Co., 344-GN. Elizabeth St., Chicago
Mfrs. of the Famous Line of Red Horn Dairy Feeds



Red Comb MEANS HEALTH

wire, being sure to hang so it will touch the eggs.

I find the cellar the best place to run the machine, but it must be remembered that good ventilation is necessary and that decaying vegetables must be ousted, if you wish success. Avoid jarring the machine and be sure it sets level. A carelessly banged door may cause any number of dead chicks.

These are the points I find in the favor of the incubator. The hens can keep on working, no lice to contend with, no broken eggs, and if well fed will never leave the nest, stay off too long, bite, nor will it trample or eat up the chicks.

Kalamazoo Co. M. KENNEDY.

DOES TRAP NESTING PAY?

The farmer is a busy man and can scarcely afford to keep careful records of the farm flock by means of the trap nest. However, on the large poultry farms which are successful they seem to be making more money and breeding better birds because of the trap nest. On the Roycroft Farm in northern Michigan they have had great success in the producing of fine Jersey cattle and when the owner, Mr. Prickett, went into the poultry business he decided to try "dairy cow-testing methods" on the hen.

Mr. Prickett states: "The results that were obtained from yearly tests of the Jerseys, in the way of eliminating the unprofitable individuals and developing the efficient ones, led up to applying similar methods to the poultry on Roycroft Farm and trap nesting was begun in 1914. For the five preceding years the average egg production was 98.8 eggs per hen per year, and while it is too early to give definite figures we are far enough along to know that we will get a flock average of over 130 eggs per hen for the first year, and with a number of individual records of over 250 eggs. No bird that has ever shown anything but perfect health, laid under 50 eggs before January 1, or 250 eggs for the year, is eligible to the breeding pens. The male birds used for breeders are large and vigorous—the pick of all raised on the farm and from hens with records of not less than 250 eggs in one year. Working along these lines we expect to get a flock average of over 175 eggs per hen per year, and at practically the same yearly feed cost as previous to 1914."

Trap nesting takes quite a little time and it is said that the average farm hen lays around sixty eggs per year. Surely with the high cost of feed if there is no other way of selecting layers, it will pay to use the trap nest, or at least buy male birds from the breeders who are able to trap-nest the hens which produce these male birds.

It the present time plans for making trap nests may be procured from any experiment station and the market is flooded with many trap nest inventions which are practical and not expensive. Some farmers will find that trap nesting pays and the commercial breeder can hardly afford to neglect this method of improving his flock. Mr. Prickett has increased his flock average from 98.8 to 130 eggs per hen by trap-nesting. The increase of 31.2 eggs per hen did not take any more poultry food and doubtlessly the 31.2 eggs per hen per year will much more than pay for the cost of trap nesting and record keeping. The small farm flock may not pay for the work of trap nesting but the method has proved its worth and males from trap-nested stock should be present on every farm. That is the cheapest way of increasing the average egg production of the flock.

Ingham Co. R. G. KIRBY.

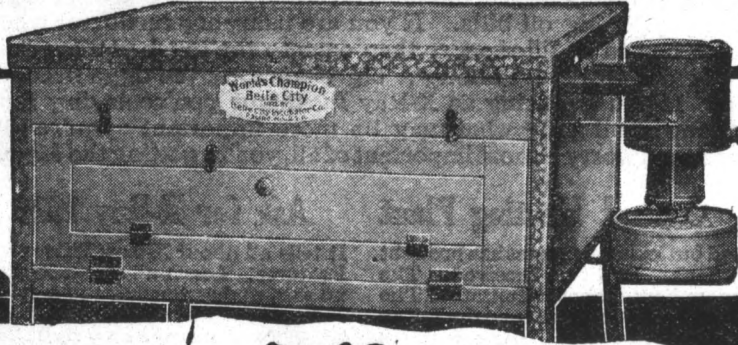
WINTER LAYING.

Our flock of pullets, fifty hatched the first of May and fifty three weeks later, gave us the first egg the last days of October. This seemed, at the

My FREE Book Tells How Thousands Make Big Hatches-Big Profits

You Can Do the Same

I Ship Quick from
Kansas City
Buffalo
Minneapolis
Racine



25 Times

World's Champion



Jim Rohan, President

"In 25 world's greatest matches
Belle City won with perfect hatches"

Learn how World's Championship Prize Winners make their big hatching increases and big cash profits. You can do the same as easily as they do. They tell you how in my big Free Book, "Hatching Facts"—their own experience in their own words—with 100 actual photographs of prize-winning hatches. Users of my Belle City win championships every year in competition with users of all makes—many never used an incubator before.

But better than the 25 World's Championships is the big hatching successes and profit-paying success of hundreds of thousands of users of my Belle City in all parts of the country. 402,000 in use. In my big Free Book, "Hatching Facts," I publish, for your information, many letters from users in every community telling their experience—the most profitable record of poultry success you can have. Write for book. Besides the valuable pointers which winners give you, the book contains full description—all facts—proofs—particulars about

Belle City Incubators and Brooders

"An outfit made for hatching that there's no such thing as matching"

See what the 25 Times World's Champion Belle City Hatching Outfit is like

The book shows that my Belle City has everything worth having in and on an incubator—copper tank—

Get My \$1300.00 Gold Offers

With the Free Book comes my \$1300.00 Gold Offers for the season now beginning. Conditions so easy anyone may receive biggest pay.

Learn how I paid one Belle City user \$156.25—another \$50.00—two others each \$45.00—many others from \$33.00 down.

Get the book. With it comes my ten-year personal money-back guaranty—my low price—same as last year—freight prepaid—1, 2, 3 months' home test—everything

Learn how thousands have made big hatches and cash profits with my 25 Times World's Champion Belle City Incubator—how my World Famous Belle City Brooder saves the chicks and raises the highest percentage—how you can make the most money out of chickens this year whether you go into it on a large or small scale.

"Simply beats the dickens
How it hatches out the chickens"
Don't let this big opportunity slip. Write me today

double disc self-regulator, safety lamp, double walls and double door and dead air space all over, with roomy nursery and strong egg tray. "Tycos" thermometer, egg tester, sun hinge burner, funnel—everything you need, including valuable instruction book on operating, hatching and care of chicks. Book tells you all about my World Famous double walled top heat Belle City Brooder, guaranteed to raise largest percentage of chicks every time—a fitting companion to my World's Champion Belle City Incubator.

This is the kind of hatching outfit that has made all these wonderful Belle City records, the very same kind of hatching outfit that I will send you if you decide to own a Belle City and join the profit makers. But first of all see my Free Book. It costs you nothing but a postal. Write me today for book, "Hatching Facts." Jim Rohan, Pres.

Belle City Incubator Co.
Box F14 Racine, Wis.

Get My Free Book "Hatching Facts"

Greatest book of practical hatching information ever published

Great, big colored pictures give you an exact idea of this wonderful hatching outfit—402,000 in use—the kind used by all the Belle City World's Championship Winners; the kind used by the U. S. Government, Department of the Interior, the kind used by Agricultural Colleges; "it incubates in all the states," the kind that won the gold-lined silver Tycos' cup; the kind that will give you hatches that you will be proud of; the kind that will win big success and cash profits for you; the kind that will put you into the Championship Class from the start; will make you cackle with joy.

Write Me TODAY.



New Mankato Incubator



Comes Set Up Ready for Use

LET us send you the story of the greatest incubator and brooder offer ever made. Get prices and description of Mankato machines. Genuine California redwood. Triple walls with heavy asbestos lining. Heavy pure copper hot-water heating system. Thousands in use. Metal safety lamp. Tested egg tray. High nursery. Tested thermometer. Egg tester and everything you need.

\$7.25 Starts You Right Quick Delivery

Get the new catalog of the biggest incubator factory of the northwest. Quick delivery and instant attention to your needs. Twenty years of success behind every Mankato. Just send name and address for big free book. A postal card will do.

Mankato Incubator Co. Box 717, Mankato, Minn.

\$1500 Yearly in Backyard Raising Poultry

New 100-page book—just off press—by recognized poultry authority—gives the very information you need. Hundreds of women pay for homes raising poultry in back yard—healthful, interesting experience successful breeders—how they started, grew and made money. Describes America's greatest money-saving line of guaranteed incubators, brooders. Book in large demand—write immediately. Model incubator Co., 15 Henry St., Buffalo, N.Y. Also 39 Barclay St., New York City

SEE Before You Pay

Try It 30 Days BEFORE YOU PAY You can try the United Incubator 30 days—no money down—no deposit. Our price for both 135 EGG INCUBATOR Both \$9.95 CHICK BROODER Both \$9.95 Both covered with galvanized iron. Incubator Hot Water; Brooder Hot Air; Tycos Thermometer, everything satisfactory or no pay. Cash price only \$9.45. THE UNITED FACTORIES COMPANY 410 Factory Bldg., Cleveland, Ohio

FORD OWNERS GUIDE Free to Ford Owners This Book Tells You

more about your Ford Car than you ever expected to know. Diagram of parts; how to overhaul, repair, keep in good condition; safe, economical driving, etc. Shows latest improved equipment at "direct-to-you" prices which save many dollars and add immense service value to your car. Write at once for "The Guide". Worth dollars to you. Sent absolutely free on request. Address MODERN SPECIALTY CO., 20th St., Racine, Wis.

WANTED RAW FURS. Honest assortment all the time. Put your price on your furs and if I can't net you as much or more, will return your furs at my own expense. WRITE FOR PRICE LIST. Wm. RESSEGUIE, 214 N. Bridge St., Grand Ledge, Mich.

WE PAY \$80 A MONTH SALARY and furnish rig and all expenses to introduce our guaranteed poultry and stock powders. BIGLER COMPANY, X 682, SPRINGFIELD, ILLINOIS

DOGS

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

When writing to advertisers please mention the Michigan Farmer.

One Gallon Oil—One Filling



X-Ray Does the Work

If you are using any incubator with a lamp on the end or side you are paying big oil bills. If you are using any incubator whose tank has to be filled more than once to the hatch you are doing a lot of extra work and taking a big chance on the eggs becoming chilled. If you are using an X-Ray Incubator you're saving four to five gallons of oil and—what may be more important—you're saving a lot of work and worry—most important of all, you're getting the *biggest hatches*.

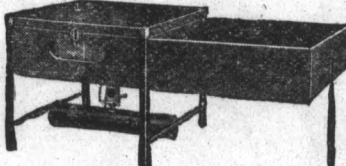
X-Ray Central Heating Plant

is patented but its huge success has brought out imitations. Don't be deceived. The X-Ray know-how cannot be imitated. The X-Ray Duplex Heating Plant and the X-Ray Generator are exclusive X-Ray features which account for X-Ray supremacy. You ought to have an X-Ray. It's built on the right principles throughout. Insures biggest hatches, sturdiest chicks and least trouble.

Ask for X-Ray 1916 Book

It tells all about X-Ray Fifteen Big Special Features. Learn all about X-Ray egg tray, perfectly level, no sag, makes turning the eggs the pleasure of a minute; X-Ray automatic trip, saves fuel, keeps the temperature in the egg chamber exactly right, automatically regulates the heat. Works itself—cuts down flame if heat exceeds the need—lets on more flame if temperature drops.

Learn all about the X-Ray hinged glass top and all the other X-Ray Special Features.



X-Ray Brooder is also way ahead of all others. Lamp beneath, same as in X-Ray Incubator, saves the chicks—that means profit.

We Pay Express

Get your X-Ray this year by *Express Prepaid*. Don't wait on slow freight—every day saved is money made. We *prepay express* on X-Ray Incubators and Brooders to practically all points. Send for free X-Ray Book No. 29

**Express
Prepaid**

X-RAY INCUBATOR COMPANY, Des Moines, Iowa

Michigan Farmer's Club List.

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

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

Write for prices on publications not listed.

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

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

NAME OF PUBLICATION.	See explanation above
Daily, (6 a Week) on R. F. D. only.	\$ 2 50
Free Press, Detroit.	2 50
Journal, Detroit.	2 50
Times, Detroit.	2 50
Herald, Grand Rapids, Mich.	2 50
News, Grand Rapids.	2 50
Press, Grand Rapids.	2 50
Courier-Herald, Saginaw, Mich.	2 50
News, Saginaw.	2 50
Tribune, Bay City, Mich.	2 50
Blade, Toledo, Ohio.	2 50
News-Bee, Toledo, Ohio.	2 50
State Journal, Lansing, Mich.	2 50
Tri Weekly Newspapers	
World, N. Y., City.	1 00 1 20
Semi Weekly Newspapers	
Journal, Detroit, Mich.	1 00 1 25
Weekly Newspapers	
Blade, Toledo, Ohio.	1 00 1 00
Commoner, Lincoln, Neb.	1 00 1 05
Enquirer, Cincinnati, O.	1 00 1 05
Cattle, Sheep, Swine, Poultry, etc.	
American Bee Journal, Hamilton, Ill. (w.)	1 00 1 05
American Poultry Journal, Chicago, (m.)	1 00 1 20
American Poultry Advocate, Syracuse.	50 75
American Sheep Breeder, Chicago (m.)	1 00 1 35
American Swineherd, Chicago, (m.)	50 75
Breeders' Gazette, Chicago, (w.)	1 00 1 45
Green's Fruit Grower, Rochester, (m.)	50 70
Hoard's Dairyman, Fort Atkinson, Wis.	1 00 1 20
Jersey Bulletin, Indianapolis, Ind. (w.)	1 00 1 35
Kimball's Dairy Farmer, Waterloo, Ia. (s-m)	25 70
Poultry Keeper, Quincy, Ill. (m.)	50 70
Poultry Success, Springfield, O. (m.)	50 75
Reliable Poultry Journal, Quincy, Ill. (m)	50 75
Swine Breeders' Journal, Indianapolis.. Ind. (s-m)	50 80
Michigan Poultry Breeder (mo)	50 70
Popular Magazines.	
Everybody's Magazine, N. Y. City. (m.)	1 50 1 60
Etude, Philadelphia, Pa. (m.)	1 50 1 60
Everybody's Magazine, N. Y. City. (m.)	1 50 1 60
Musician, Boston, Mass. (m.)	1 50 1 55
National Sportsman Boston, Mass. (m)	1 00 1 15
People's Home Journal, N. Y. City. (m)	50 85
People's Popular Monthly, Des Moines, Ia.	25 85
Red Book Magazine, Chicago, Ill. (m.)	1 50 1 55
Review of Reviews, N. Y. City. (m.)	3 00 3 00
Ladies' or Household.	
Delinator, N. Y. City. (m.)	1 50 1 60
Designer, N. Y. City. (m.)	75 1 05
Housewife, N. Y. City. (m.)	50 80
Ladies World, New York City (m.)	1 00 1 25
McCall's Magazine and Free Pattern, N. Y. City. (m.)	50 75
Mother's Mag. Elgin, Ill. (m.)	1 50 1 55
Pictorial Review N. Y. City. (m.)	1 50 1 60
Today's Magazine and Free Pattern (m)	50 70
Woman's Home Companion, N. Y. City. m	1 50 1 60
Womans World, Chicago. (m.)	35 80
Religious and Juvenile.	
American Boy, Detroit Mich. (m.)	1 00 1 50
Boys Magazine, Smethport, Pa. (m.)	1 00 75
Little Folks, Salem, Mass. (m.)	1 00 80
Young People's Weekly, Elgin, Ill. (w.)	75 90
Youths Companion, Boston, Mass.	2 00 2 25

There's a Reason for These PHENOMENAL HATCHES

"Have brought off two 100% hatches in my Progressive." W. H. Thomas, Oak Flat, Ark.

"Progressive Incubator hatches average close to 100%." O. P. Parrish, Rutledge, Mo.

"Every single egg hatched that had a chick in it." Roy Green, Chattanooga, Tenn.

"Four fine hatches averaged from 90% to 100%." C. A. Walker, Charleston, Ill.

PROGRESSIVE INCUBATORS bring off Blue Ribbon Hatches like these because they are built from the best materials with latest improvements. Most consistent hatchers on the market. Biggest bargains.

\$7.85 LOWEST PRICE YET FOR BIG 155 EGG INCUBATOR

GENUINE CALIFORNIA REDWOOD. Hundreds of dead air cells to protect eggs against sudden changes. Perfect Copper Hot Water Heating System, Double-disk Temperature Regulator, Heavy Safety Lamp, Double Doors, Strong Egg Tray, Reliable Egg Tester, Accurate Thermometer.



Write for new 1916 Combination Offer and Free Poultry Book with records of big hatches.

Incubator alone \$7.85—with Brooder \$9.85. Frt. paid E. of Rockies. Shipped complete all ready to use—no extras. Money back with 8 per cent interest if not found as represented. **ORDER TODAY.**

PROGRESSIVE INCUBATOR CO. Box 164 Racine, Wis.

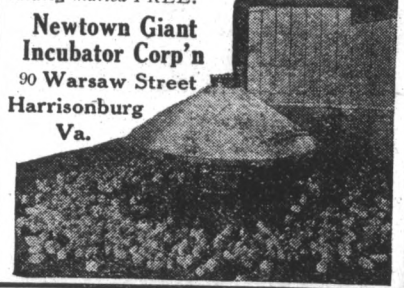
Poultry Profits Sure

when you use the modern coal-burning, self-feeding, self-regulating, trouble-proof

Newtown Giant Colony Brooder

It raises "the most chicks, the best chicks, with least labor and at lowest cost." The first successful brooder of the colony type, and years ahead of all imitations.

Your dealer can supply it. If necessary we will ship direct. Helpful catalog mailed **FREE**.



PFIFE'S 65 VARIETIES farm-raised Land and Water-Fowls. Eggs in season. Illus. Catalog, and "Grower's Guide," 2c. An honest deal. Write today. **HENRY PFIFE, Farmer-Poultryman, Box 676, Freeport, Ill.**

MONEY IN POULTRY AND SQUABS Start small. Grow BIG. Get winter eggs. Keep healthy fowls. Save your chicks. Our Big Book Tells how. Shows fowls in natural colors, how to feed for eggs, select best layers, plans for houses. **FREE.** Crescent Poultry Farms, Box 57, Des Moines, Iowa

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 Brooder's Complete Guide Free. **W. A. WEBER, Box 914, Mankato, Minn.**

My Best Offer in 21 Years



Write Today

for this offer which gives you the oldest and best known incubator at a rock bottom price. Get my guarantee which insures you a *sure success* and big profits this year with

"Successful" Incubators and Brooders

Backed by 21 years of successes—and the strongest guarantee ever written. Twenty big points for success. Write today for catalog. **Poultry Lessons FREE** to every buyer of a "Successful" Incubator or Brooder. A complete course—well worth \$25—insures success—tells how to save on feed—get top-notch prices, etc.

Feed Sprouted Grain—Get More Eggs—with "Successful" Grain Sprouters—built in all-steel sections—fireproof. Changes 1 bushel of grain into 3 bushels of fresh, green egg-making feed. Makes hens lay in winter. Send for free descriptive circular and low prices. **Write for Catalog of "Successful" Incubators and Brooders.** Enclose 10c if you also want "Proper Care and Feeding of Chickens, Ducks and Turkeys." Incubator catalog is **FREE**—Write today. **J. S. GILCREST, President** **DES MOINES INCUBATOR CO. 3682 ST., Des Moines, Ia.**

Tells why chicks die

E. J. Reefer, the poultry expert, 4382 Farmer Bldg. Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 88 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable **FREE** books.

time, to be a fairly good start, but for some reason the flock have not made good the early favorable prospect. The daily increase has been slow. Perhaps we are overmuch impatient, but it seems to us that there is good reason to be, with eggs about three cents each. But the pullets are plumping out, and coloring of head dress indicate near future activity in the egg business. They are singing with greater joyousness and getting to work earlier in the morning, both of which are good signs.

When the hens get down to real work some eggs will be laid on the platform. Then some of the flock will get off the perch and seek the nests in the dusk of early morning. If they get overly energetic it may become necessary to provide a lantern for them to start work, as we did once before with a flock of Brown Leghorns. The members of this flock got so interested in filling the egg basket that a dozen or so would be found groping around when I made the early morning rounds to fix the grain in the litter. Not being able to reach the nests the eggs would be deposited in any old place. So I took to loaning them the lantern after doing the barn chores. This worked well. Sometimes as many as a dozen eggs would be laid before day afforded sufficient light. It was sure enough fun to see the hens make for the nests as the lantern was hung on the nail; while others would seek the water crock.

Waiting on such a flock was greater fun than a circus any old day. If there is anything nicer than to see a nice flock of Barred Rocks, snowy plumed White Leghorns, or glossy coated Brown Leghorns, busily at work in the scratching shed, then I don't know what it is, unless it is a well-groomed strawberry bed either in full bloom or fruitage.

M. N. EDGERTON.

CONTAGIOUS CATARRH.

Our hens have their eyes swell shut. At first they just water, but later a pus forms under the eyelids and the side of the head seems inflamed. There are also little spots on the combs and wattles that are sort of yellowish as though filled with pus. They do not eat well. Are fed a good dry mash, wheat, ground oats, corn, milk and have all the water they want. Are kept in a good warm coop with south windows which are open in good weather and have canvas upper sashes for colder weather.

Lenawee Co. D. J. H.
The watering of the eyes in chickens is most always caused by colds or catarrh. As the trouble gets worse the secretions from the eyes get thicker and the eye swells and often closes. This condition with the swelling and inflammation of the head indicate that the fowls are troubled with contagious catarrh or roup, as it is generally called. The condition of the comb would indicate sore head or what is commonly called chicken-pox, which is thought to be nothing but another form of roup.

While these are what is called germ diseases, the fundamental cause of the troubles is a lowering of the vitality of the chicken, either by improper feeding, poor ventilation or unsanitary surroundings. In treating for these troubles separate all birds which show symptoms of the disease, from the healthy ones. Remove all litter from the house and disinfect freely with a five per cent solution of carbolic acid. In the drinking water put one to two teaspoonfuls of a saturated solution of potassium permanganate. For local treatment wash the eyes at least twice daily with an antiseptic solution such as a one-half per cent solution of corrosive sublimate.

We would suggest that in addition to what is now being fed, the chickens be given plenty of green food and also have available in hoppers dry bran. Be sure that all the utensils used in feeding and watering are well cleaned. It is advisable to scald them thoroughly frequently.

Undoubtedly the ventilation of the

coop could be improved by putting the canvas sashes on the lower half of the window instead of the upper. As the coop is now ventilated the warm air which rises to the top is carried off through the upper sashes, while the foul air which settles to the floor has no means of escape. If there is any indication of dampness in the coop correct this by remedying the source of dampness. Undoubtedly changing the canvas sash as suggested will have a good effect in this respect. In feeding the chickens put all of their grains in deep litter so that they are assured sufficient exercise during the day as exercise is one of the chief essentials of fowl health.

WITH HENS IN COLD WEATHER.

Milk, sour or sweet, whole or skim, is excellent for poultry, but will not take the place of water, which should always be furnished.

Store away some of the second quality cabbage and some mangel wurzels to furnish the flock with green food during the cold days.

Make sure that currents of air do not strike the fowls when they are on the roosts at night; but also be sure there is plenty of good air for them to breathe.

Of course you covered the leaky coops with tar paper or some waterproof fabric, for protection from rain and dampness is necessary for fowls and chickens both.

Remember that one or two grains will furnish sufficient of the different food elements to make healthy, productive fowls. Corn, wheat and oats are staple foods and others may be added for variety.

It is always a good plan to rake up and save the dry leaves as they fall from the trees, for they make the best of scratching litter for the poultry house and are good to place in chicken coops and boxes.

During the winter some sort of meat food should be given to the fowls to take the place of the bugs and worms which they capture in summer. There is nothing better than the beef scraps sold by dealers in poultry supplies for this purpose.

Vermont.

F. H. SWEET.

POULTRY HOUSE CONSTRUCTION.

A house with a large area of glass and no muslin has a high moisture content and low temperature, accompanied with rapid changes. An extreme open front house furnishes ideal conditions, providing the birds are protected from rain, snow and drafts. A house, the front of which contains some muslin and glass, is a very efficient type. Hollow tile construction makes a very desirable house, but it is doubtful whether at the present prices of tile and mason labor the resulting increased cost warrants its use. A roosting closet with double walls is desirable in shed roof laying houses. The providing of ample means of properly ventilating shed roof, paper covered houses adds greatly in reducing temperature during spring and summer. Tongued and grooved boards for the outside walls when covered with a layer of building paper are reasonable in cost and supply in a great measure the non-radiating qualities of a double wall.

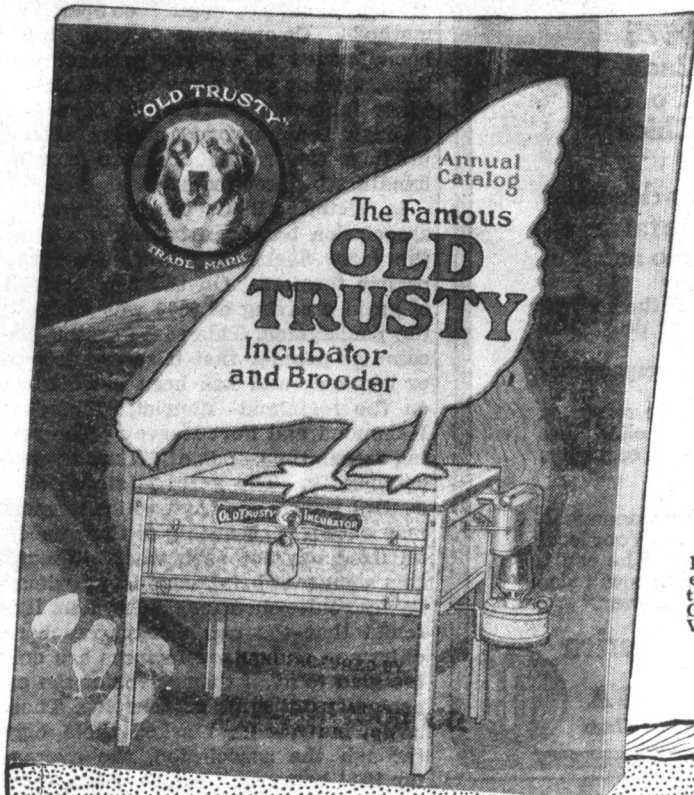
BOOK NOTICE.

Diseases of Poultry, by Raymond Pearl, Frank M. Surface and Maynie R. Curtis, who have done much practical poultry work at the Maine Experiment Station, contains information which every poultry raiser should have at hand. Its tables for aiding in the diagnosis of disease and the practical descriptions of diseases and their treatment make it easy for every poultry raiser to be his own poultry doctor. The chapters on sanitation, feeding and housing give the essentials of poultry success and disease prevention. The book is well illustrated, contains 342 pages and can be ordered through the Michigan Farmer office for \$2.00. Published by The Macmillan Company, New York.



H. H. Johnson

Why Old Trusty Holds the Record for Big Average Hatches



WITHOUT the galvanized metal cover and asbestos Old Trusty would still be a first-class incubator. The redwood case would still keep heat in and cold out. The fact is our first machines were built that way for years and thousands of them are still giving good service. But the asbestos and metal cover make it better than the next best. Simplicity is the keynote throughout the whole machine. A simply made weatherproof case—a simple hot water heating plant that anyone can understand and operate without previous instructions. This is just one of the many reasons why Old Trusty has brought success and profits to 650,000 people. If you will

Write and Get This 136-Page Johnson Book **Free**

I'll tell you of many more big features that go for making big profit hatches year in and year out in any weather. Remember, it is the early chicks that bring the top market prices and it takes a well made hot water heated machine to make cold weather hatches. Old Trusty still sells for

Less Than \$10

Freight paid if you live east of the Rockies—a little extra if you live farther west. Forty to ninety days' trial. Quick shipment from factory at Clay Center or warehouses at St. Joe, Mo., or Seattle, Wash. Write today. H. H. JOHNSON

M. M. Johnson Co.
Clay Center, Neb.

CASE MADE OF CLEAR REDWOOD

LINED ALL OVER WITH ASBESTOS

GALVANIZED METAL COVER

Wisconsin Wins In Big Hatching Contests Every Year

Why Pay More

For only \$10 you can get these two prize winning machines, delivered, freight paid east of the Rockies. You take no risk—money back if not satisfied. You can order direct from this ad. Ask the publisher about us.

Both Machines \$10
Freight Paid For Only

We also furnish 180 Egg Incubator \$12 and 180 Chick Brooder both for only \$12

Wisconsin Incubators have long proved their wonderful hatching qualities. Competing with every make known, they won in the five big annual National Hatching Contests. Think of it. Five consecutive victories. That certainly proves you can't make a mistake. Shipped on 30 Days' FREE Trial

WISCONSIN INCUBATOR COMPANY, Box 106 Racine, Wis.

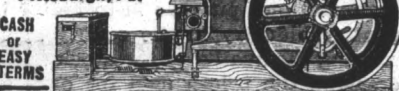
FUEL SAVING WITTE ENGINES

Kerosene, Distillate, Gasoline, Gas. SOLD DIRECT FROM FACTORY. 5-YEAR WARRANTY. 2 H-P \$34.95; 3 H-P \$52.50; 4 H-P \$69.75; 6 H-P \$97.75; 8 H-P \$139.65; 12 H-P \$197.00; 16 H-P \$279.70; 22 H-P \$369.80. Portable Engines Proportionally Low. Prices F. O. B. Factory.

Besides lower price, WITTE engines use less fuel per H-P hour—from one-fourth to one-third less—enough saving in a year to pay entire cost of engine. Easy starting; no cranking. Our 28 years engine building makes this higher quality for you, at a small profit for us. Used for all kinds of work.

New Book Free Write us, so we can send you by return mail, full information.

WITTE ENGINE WORKS, 2133 Oakland Avenue, Kansas City, Mo., 2193 Empire Bldg., Pittsburgh, Pa.



Bee Keepers Supplies

Bee Hives, Sections, Comb foundation, Smokers, etc. Agents for Root bee supplies in Michigan. Thoroughbred Italian Bees and Queens for sale. Fruit growers supplied with complete outfits. Send for 1916 catalog. Beeswax wanted 25c cash or 30c in trade delivered here.

M. H. Hunt & Son, Box 525, Lansing, Michigan.

POULTRY.

BARRED ROCKS—Parks 200-egg strain season. FRED ASTLING, Constantine, Michigan

Barred Plymouth ROCK COCKERELS, large, farm raised from prize winning Rock. \$3 each, two for \$5. J. A. BARNUM, Union City, Mich.

Barred Rock Cockerels, \$2.00 for single bird, \$1.50 each for two or more same order. A. A. WOOD & SON, Saline, Michigan.

Barred Rock Cockerels—200 big husky vigorous birds. A few pullets. W. C. Coffman, R. 3, Benton Harbor, Mich.

BIG Beautiful Hen hatched Barred Plymouth Rocks sold on approval \$2 to \$5 each. (4 females and male \$10) good layers, Circulars and photos. John Northon, Clare, Mich.

Bred to Lay: R. C. Rhode Island Reds. S. C. White Leghorns, a few breeding cockerels at \$1. Eggs and stock in season. J. C. Greene, St. Johns, Mich.

BIG beautiful B. P. rock cockerels from heavy laying strain farm raised. none better. \$2.00 each, 3 for \$5. Egg-A-Day Poultry Yards, Ceresco, R. No. 2, Mich.

Cousins Northern King Strain Barred Plymouth Rocks. Have won many prizes. Some nice Cockerels and Pullets for sale. Write for prices. David W. Cousins, Northport, Mich.

BUFF LEGHORNS—Cockerels, pullets, hens or pens; anything you wish in Buff Leghorns. Great laying strain. Dr. William Smith, Petersburg, Mich.

Chicks that Live \$15 per 100. Silver, White and Partridge Wyandottes. White Leghorn Chicks \$12 per 100. Pekin and Rouen Ducklings 25 cents each. ALDHAM POULTRY FARM, R. No. 37, Phoenixville, Pa.

We ship thousands each season, 17 varieties. Ancona's \$11 a hundred, free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

EGGS for hatching. Baby chicks a specialty. From pure R. C. Rhode Island Reds and S. C. White Leghorns. \$1.00 per setting. Baby chicks \$10 per 100. Book your orders now. H. A. Nicholls, Ell Lake, Mich.

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

For Quick Clearance, a few Buff Rock Cocks and Cockerels at \$2 each. Hens and pullets \$1.50 each. Blue Orpingtons, both sexes \$2 each. Must be sold before February 10th. Winners at Chicago, 1911, '12, '13, '14 and '16. Bird Lovers Farm, Lawrence, Mich.

FOWLER'S BUFF ROCKS. Cockerels \$2 to \$5; hens \$1 to \$3. White Holland Turkey Toms \$5; hens \$3. R. B. FOWLER, Hartford, Michigan.

FOR SALE:—Light Brahmas, S. C. R. I. R., Houdans and White Wyandottes. Cockerels and pullets from \$2 to \$5. Mrs. B. C. Banfield, Owendale, Mich.

Ferris Leghorns—200 Egg Strain. One customer's Rock averaged 102 eggs in six winter mos., another 181 eggs in 10 mos., another 199 eggs in 12 mos. You can do as well. Eggs, chicks, breeding stock from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. 16 years square dealing. Thousands of pleased customers. FERRIS LEGHORN FARM, 934 Union, GRAND RAPIDS, MICH.

Mammoth Bronze Turkeys Toms \$6; Hens \$4. Fawn and White egg strain, Sleach, Collier Bros. Conklin, Mich. R. 5.

MAMMOTH Bronze Turkeys Mammoth Toulouse Geese and B. P. Rock and S. C. White Leghorn Cockerels. Berkshire, both sex all ages. Chase's Stock Farm, Marlette, Mich. R. 1.

Pine Crest White Orpingtons Strong, vigorous birds after Feb. 1st, baby chicks later. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

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

R. and S. C. R. I. Red Cockerels, W. Runner Ducks, R. B. O. Ducks. Eggs in season. Fine stock. Prices reasonable. O. E. Hawley, Ludington, Mich.

RHODE ISLAND REDS and PLYMOUTH TH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5. P. R. hens weight 5 to 9 lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 35 lbs. according to age \$5 to \$25, 10 eggs \$5. A. E. Cramp ton, Vassar, Mich.

Rose Comb Brown Leghorn Cockerels From Mad. Sq. and Mich. and Ohio State Fair winners \$2.00 each. CLAUDIA BETTS, Hillsdale, Mich.

Silver Golden and White Wyandottes. First prize winners at Iowa. Choice cockerels reasonable. Send for circular. C. W. Browning, R. 2, Portland, Mich.

S. C. White Leghorn Cockerels. Grand Birds—Utility, S. or exhibition. We won State Fair this year. Hatchling Eggs, \$1.50 and \$2.50 per setting, \$5 per 100. Wishbone Leghorn Farm, A. B. & J. M. Wiley, Ann Arbor, Mich.

Walnut Corner White Wyandottes, both fancy and utility, a nice lot of cockerels for sale. Satisfaction guaranteed. W. J. Scholl, Bremen, Ohio.

White Plymouth Rocks. Healthy farm raised cockerels \$2 and \$3. Pullets \$1.50. Eggs orders booked now \$1.25. Ray M. Winters, Allegan, Mich.

White Wyandotte a fine lot, male and female at low price and write your wants. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

White Wyandotte Cockerels From Bred-to-lay stock. \$2.50, \$3.00 and \$3.50. EGGADAY POULTRY RANCH, Marshall, Mich.

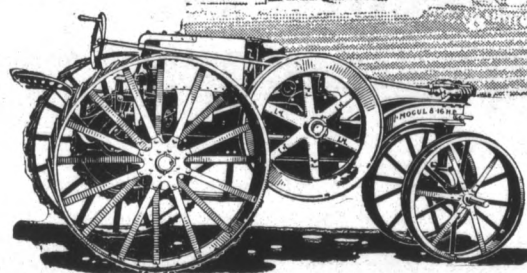
WHITE Wyandotte Cockerels, \$2.50, \$3.50 and \$5 each. From High Bred stock and heavy layers. A. FRANKLIN SMITH, Ann Arbor, Michigan.

White Holland Turkeys. Fine Large Healthy Stock. Toms \$6.00; Hens \$5.00. Alden Whitcomb, Byron Center, Michigan.

Pekin and Rouen Drakes \$2.00 each or 3 for \$5.00. Sheridan Poultry Yards, Sheridan, Michigan.

Mogul 8-16 The Tractor to Buy

Mogul 8-16
Kerosene
Tractor



\$675
Cash,
f. o. b.
Chicago



AT the price, the Mogul 8-16 tractor deserves the careful attention of all progressive farmers.

It won a Grand Prize at both San Francisco and San Diego Expositions. That proves its class.

It can be used with profit on small farms, doing all the hardest work of the horses, and much that horses cannot do. That proves its usefulness.

It betters the plowing and other work of seed bed preparation, while reducing its cost, and—

It burns kerosene under all conditions. This one reason is enough to sell a Mogul 8-16, because, on the average, gasoline costs about 65 per cent more than kerosene. That proves its economy.

It costs about half its equivalent in horse flesh.

The price is \$675 cash, f. o. b. Chicago.

A tractor so good, so useful on farms of all sizes, so economical, and at such a price, deserves a thorough investigation. Your local dealer should be able to show you a Mogul 8-16. If he can't, write to us. We'll see that you get a look at it, and we will also send you our new book, "Tractor Power vs. Horse Power."

International Harvester Company of America

(Incorporated)

CHICAGO

USA

Champion Deering McCormick Milwaukee Osborne Plano

New Land!

Turn Rough Land
Into Seedbeds

From forest to cornfield in a single season! That's what has been done and can be done at small cost. Following the axe and fire (or dynamite) use the tool before which fall brush and refuse, as wheat stubble under a harrow. There's no cheaper way to add tillable land to your farm than with a

Cutaway Bush and Bog Plow
(CLARK)
Unlike any other implement

It digs down deep and chops up turf and roots without bringing trash to the surface. Does away with the axe, bush-knife and shovel. Quicker, cheaper, better. Also used for all kinds of deep or difficult tillage. Two sizes—4-horse and 2-horse.

Strong and durable. Has cutlery steel disks, forged sharp, also dust-proof oil-soaked hardwood bearings. Reversible. If your dealer has not the genuine CUTAWAY, write to us direct. Be sure to write us for our new free book, "The Soil And Its Tillage." Make your farm bigger at small cost.

The Cutaway Harrow Co.

Maker of the original CLARK disk harrows and plows

992 Main Street - Higganum, Conn.

**Gets
Every
Weed**

Mulches and pulverizes, with greatest ease in handling and working. The

"Acme" Foot Lift Weeder

destroys all weeds, cutting deep as desired, and tills perfectly. Its knife edges, presented to the ground, at a slicing angle, make draft easy. Foot Lift Lever clears off the weeds and lifts the knives for transportation. 5 sizes—cutting 5 ft. to 12 ft. wide. Write for free book, now. Get every weed, quicker and cheaper, with the "Acme."

Duane H. Nash Inc. 44 Elm St., Millington, N. J.

APOLLO ROOFING

Made from APOLLO-KEYSTONE COPPER STEEL Galvanized Sheets—the most durable, rust-resistant galvanized sheets manufactured for all forms of exposed sheet metal work.

Actual weather tests have proved conclusively the superiority of this material for Roofing, Siding, Culverts, Tanks, Silos, Oasterns, and similar uses. Look for the Keystone added below regular Apollo brand—it indicates that Keystone Copper Steel is used. Demand the genuine—accept no substitute. Our free booklet "Better Buildings" contains farm plans, information and instructions for the application of metal roofing and siding. It is of special interest to every farmer and owner of buildings. Write for free copy.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Building, Pittsburgh, Pa.

Farm Commerce.

More Money for Eggs

THE present co-operative egg circles have come about largely through the efforts of a few persons, who realized the justice that could be done to all handlers of poultry products through co-operative methods. Co-operative circles have been formed in various parts of Ontario, Quebec and some of the states. Their influence has already been felt through the improved quality of the produce the result of more careful handling by producers.

In Victoria, B. C., the local poultry association has been buying grain for the farm flocks in carlots from the prairie farmers. On the first carload of grain a saving of \$300 was made to the poultrymen. This same system became so popular that it spread to other sections, and has been established on the mainland district, including Hammond and Fort Harvey. The saving means thousands of dollars to each community. The grain is stored at a central warehouse from which farmers may obtain it according to their needs, on fixed days of each week. Though this agency is being conducted primarily by poultrymen for poultrymen, it is found that the neighboring ranchers, dairymen and mixed farmers are only too glad to avail themselves of the opportunity of buying any surplus. These same individuals market their eggs through the association, the average for 1914 being an advance of ten cents per dozen over local prevailing prices. **Extend Incubation Work to Community.**

Working economy at both ends, the feeding and the marketing on the same co-operative basis, brings the farmer a much wider margin of profit. He is able to feed more cheaply and receives a higher price for his products than formerly.

The Arrow Lake Poultry Association, in British Columbia, has probably gone further in the co-operative poultry plan than any other in the Dominion. This organization has a community hatchery or incubator cellar which is the central point, doing the hatching for the members, who include nearly all of the farmers of the community. The average hatch from incubators in the hands of a competent man who understands the machine, and can give it undivided attention, is apt to be greatly increased.

The Women Get Together.

It seems natural in this day and age to do things on a large plan, because there is more economy in it. The farm women of Lyon county, Kansas, asked themselves, "Why are we producing eggs and poultry at a loss when the local jobbers and city commission men make a profit handling our eggs?" Their husbands had already made a success in marketing and buying their farm supplies and crops through what is known as the Lyon County Farmers' Produce Association. Why should not the Lyon County farmers' wives form an organization for poultry products and receive like benefits? They determined to try, and today they are receiving better prices for eggs, poultry and butter. They formed the Lyon County Quality Egg and Poultry Association, composed of various neighborhood organizations or egg circles. The organization's purpose is to better the poultry industry in the county by improving the quality of the stock and increasing the prices paid for eggs and poultry; also to get supplies at wholesale prices.

Built a Reputation.

As a starter it was decided to ask only an advance of one cent a dozen on eggs over that paid to the local market. The advance was based on

the fact that the association would market only guaranteed eggs, where the local dealers had been selling anything with a shell on for fresh. Each member of each egg circle is designated by a particular number, so instead of being known as "Mrs. Chas. Brown," the farm housewife is rated as "No. 121." Every member is required to gather the eggs produced daily in fall and winter, and twice daily in warm weather. The name of the association and the number of the member must be stamped on each egg, the member being provided with an individual stamp for this work.

Clean eggs of uniform color, not more than five days old, are classed as "Grade A, No. 1." They must weigh not less than twenty-four ounces per dozen. "Grade No. 1" must be clean and packed neatly and not more than five days old. They must weigh not less than twenty-one ounces per dozen. No other kinds of eggs are handled by the association.

Rules Are Rigid.

"No woman who is not in good standing in her neighborhood can become a member of this association," is one of the rigid rules of the organization. "Any member violating the aforesaid agreements may be required to forfeit her stamp and her membership in the association," is another strict provision. The members agree to pen up or dispose of all male birds on or before June 1, of each year.

"Our first object was to establish a good reputation," said one of the directors of the organization. "We wanted to protect the buying public as well as ourselves. There is a big demand always for strictly fresh eggs and our organization assures the consumer only strictly fresh eggs in boxes marked with our label. Our association secretary has a check on each member of the association. Should a bad egg be found in a box we ship the number on the shell is verified on the books and the guilty party discovered. A second offense will mean suspension."

Cut Down Waste and Increase Prices.

This co-operative egg distributing organization was not formed because the farm women held any particular grievance against the middlemen, as is many times true. They desired to eliminate unnecessary waste and to obtain higher prices; they wanted all the profits that were to be had. It is paying the producer and consumer. The extra care is, of course, worth something. The people have to be educated up to this point, and when better care is taken with the eggs a better market follows. Even if no higher prices were obtained, the organization officials feel certain that the waste eliminated would make the co-operative plan a success. Waste and low prices will wreck any poultry keeper.

Indifferent Ones Converted.

The launching of the Lyon county organization was attended with some indifference. Instead of becoming enthusiastic, as they should from the start, a majority of the farm women said they were willing to stand off and "see how the thing would pan out." But they soon saw that better prices were being received from the very outset, so each neighborhood formed egg circles, and today there are very few farm women in the county who do not belong to the organization. All co-operation is done through the county association.

That the egg and poultry association has been placed on a business basis, is certified by the fact that the manager of the Lyon County Farmers' Association is now egg manager. He is finding a good market for the poultry pro-

ducts in Kansas City, Denver, Chicago, while a few large shipments have been made as far distant as New York in proper seasons. At the time that the Lyon county grocymen were paying Lyon county farm women fifteen cents a dozen for their eggs, the eggs sold by the association were finding ready buyers on the Kansas City market for twenty-five cents a dozen.

The Lyon county farm women want the additional profit, and like all women, when they start after a thing, they usually get it. They can safely sell direct to the consumers without extra handling because they know their product is quality goods. Where large quantities are handled, as with this organization, the marketing cost is small. Consumers pay a premium and are glad to do it for they know that the eggs are not over five days old.

The best results will follow the organization of large associations made up of several smaller ones; but to place the business on a firm basis it is expedient to organize the local associations first and then amalgamate these into a large society.

New York. EARL W. GAGE.

Crop and Market Notes.

Michigan.

Eaton Co., Jan. 24.—The ground is bare and wheat is suffering from the freezing and thawing of the ground. New seeding also injured. Most farmers have enough feed for their own use. About the usual number of cattle and sheep being fed this winter, but a larger number of hogs. Very little marketing of any kind being done. Wheat \$1.20; beans \$3.40; corn 70c; potatoes 90c; butter 25c; eggs 26c; lambs \$6@8.50; hogs \$5.50@6; steers \$5@6.50.

Gratiot Co., Jan. 24.—Heavy sleet covered the ground for some time, but the ground is now soft and the mud very bad. Meadows and wheat are green and looking well. Farmers have all the stock they can feed through the season. Milk \$1.75 per cwt; cream 29c; wheat \$1.18; beans \$3.50; potatoes \$1.15; hay \$9@11; hogs \$6@6.50.

Monroe Co., Jan. 24.—Condition of wheat and rye good. Farmers have sufficient feed for their own use but none for sale. Very few cattle being fed for market. Hogs about all marketed. Eggs a scarce article at the present time. Whole milk three per cent \$1.65; four per cent \$1.80; beans \$3.85; wheat \$1.26; corn 82c; hay \$10@12; cattle \$4@7; hogs, live \$6.75; potatoes \$1.25 per bushel; eggs 30c; chickens 13@14c.

New York.

Genesee Co., Jan. 24.—Though we have had little snow, fall-sown grains look good. About enough feed for the farmer's own use. Only a limited amount of feeding stock on hand. Hens are beginning to lay better. Milk \$1.75 @2 per cwt; beans \$3.50; wheat \$1.15; oats 45c; corn 80c; hay \$15; steers \$7 @7.85; hogs \$7; potatoes \$1; dairy butter 28c; creamery 35c; eggs 34c; fowls 14@15c; lambs, live \$10.

Pennsylvania.

Lancaster Co., Jan. 26.—Wheat is in quite good condition, but would be better if we had more snow. Farmers have no more than enough feed for their own use, as corn was a short crop. A good deal of feeding stock on hand. Hens are beginning to lay well. More alfalfa than usual will be raised this year. Butter-fat 37c; milk \$1.80 per cwt; wheat \$1.10; corn 80c; potatoes \$1.10 and scarce; hay \$20; steers \$6@7.50; hogs \$8.

Ohio.

Sandusky Co., Jan. 26.—It has been warm and muddy since December 19. Farmers cutting wood and butchering. No ice harvested yet. Wheat crop is being damaged. Much corn yet in the field. Hens are beginning to lay. Some farms selling around \$160 per acre, and numerous inquiries for land. Lots of feed in farmers' hands, with corn selling at \$1 per cwt; wheat \$1.32 per bushel; oats 49c; hay, best \$15 a ton; potatoes \$1 per bushel; cattle \$7; hogs \$7.20; eggs 28c; butter 28c.

Wisconsin.

Pierce Co., Jan. 28.—Wheat is injured some owing to small growth and exposure to cold or ice smothering. There is a great deal of complaint of potatoes and apples not keeping well. Cabbage in storage also affected. Cattle and hogs healthy and there seems to be plenty of feed. Wheat \$1.50; oats 39c; rye 85c; barley 65c; butter 30c; eggs 30c.

Hancock Co., Jan. 24.—Severe cold weather, with no snow, greatly damaged wheat and young grass. Live stock is in good condition. Many hogs are being shipped at \$7 per cwt.



MEDUSA PRODUCTS Make Good CONCRETE

WHAT are you planning to build this spring? Are you ready to make those long needed improvements—the new feeding floor, the new hen house, the cistern that needs repairing, the new milk cellar, the new steps for the house—or even a new silo? Now is the time to see them through to a finish.

That means that you will want to make them of concrete—and of the best concrete—because a good concrete job stays good. The things you build this spring with good concrete won't have to be rebuilt next year—or any other time.

Only remember this—be sure of your sand, of your gravel or stone, and, above all, of your cement.

Be sure to use one or more of the Medusa Cement products in your concrete. You can rely on them all for best results—Medusa Gray, Medusa White and Medusa Waterproofed Cement, both colors.

MAKE YOUR CONCRETE WATER-TIGHT

But you want something more than just permanence in all your concrete work. You want it water-tight—and the best and cheapest way to do this is to have 2 per

cent. of Medusa Waterproofing mixed with your cement.

A comparatively lean mixture of cement, sand and gravel or stone is abundantly strong for most farm construction. The addition of Medusa Waterproofing will make such mixtures water-tight as well

as strong—without affecting the strength, setting or hardening qualities of the concrete. Get our Waterproofing booklet—it will save you money.

Make your concrete beautiful with

MEDUSA WHITE PORTLAND CEMENT

The first true white Portland Cement ever manufactured. A facing of Medusa White Portland Cement adds 100% to the appearance of buildings of all sorts. It is just as strong and just as desirable as any other high testing Portland. The only difference is that, instead of the ordinary unattractive greenish gray, it is naturally a pure, stainless white, and can be tinted to produce wonderful color effects.

Note—We also make and recommend Medusa Waterproofed Portland Cement (gray) and Medusa Waterproofed White Portland Cement—containing Medusa Waterproofing ground up with the cement at the factory in just the right proportions for perfect results. Ask your dealer.



WHICH OF THESE BOOKS DO YOU WANT?

They show you what others have done with the Medusa products. They are full of valuable suggestions for your spring building. Fill out the coupon now.

The SANDUSKY PORTLAND CEMENT CO.

CLEVELAND

OHIO



CUT OUT AND MAIL

The Sandusky Portland Cement Co.,
Room B.1. Engineers Building,
Cleveland, Ohio.

Please send me the books which I have checked:—
Waterproofing on the Farm.....
Every-day Uses of Cement.....
Specifications for Medusa Concrete.....
The Medusa White House.....

AGAIN! DOWN GO SEPARATOR PRICES!

Four 1916 Sizes! Four New Low 1916 Prices!

4250
5100
6350

I mean every word! Prices have gone down AGAIN! In spite of the increased cost of materials, on account of the large volume of separators going through my factories, I am able again to cut and slash cream separator prices as never before. My old 1915 prices are not in force today! My new lower than ever 1916 prices and easy selling plans (cash or time) are now in force!

A New Separator has been added to the great Galloway line of Bath-in-Oil Sanitary Cream Separators. It is identical with other sizes in quality and design and sells for less money than I ever sold a cream separator! Don't be misled on cream separators thrown together and sold for a price. Buy direct from a real factory, get a better machine and save from \$25 to \$50 on the highest quality separator. 10,000 separators now coming through my factory—with new prices—special terms of no money down, 1 year to pay. I expect to sell them all between now and grass.

GALLOWAY SANITARY CREAM SEPARATOR

Big 1916 Book Is Now Ready

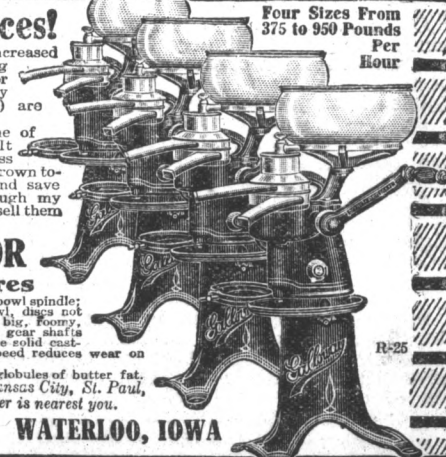
And I will mail it to you if you'll ask for it. 250 pages in size, printed in four colors and tells the truth about the cream separator business. If you buy a cream separator within the next twelve months you need this great book. I want you to know how I build these wonderful separators in my own great chain of factories, how they are designed, and how and why I can price a separator of highest quality at such new low prices. Read this book before you buy a cream separator of any make at any price. I'll be glad to pay the postage. Write for it today.

WM. GALLOWAY COMPANY

183 GALLOWAY STATION

WATERLOO, IOWA

NEW 1916 EASY SELLING PLANS!



Markets.

GRAINS AND SEEDS.

February 1, 1916.

Wheat.—After a steady advance for a fortnight wheat prices reacted last Friday and on Monday holders attempted to take profits, forcing a further decline. This came in spite of the American visible supply, including wheat in bond, decreasing over two and a half million bushels, wheat afloat showing a large decrease, and shipments from the southern hemisphere running light. One year ago No. 2 red wheat was quoted at \$1.57½ per bu. Last week's Detroit quotations were:

	No. 2	No. 1	May
Wednesday	1.36	1.31	1.40½
Thursday	1.37	1.32	1.41½
Friday	1.36½	1.31½	1.41
Saturday	1.35½	1.30½	1.40
Monday	1.33½	1.28½	1.38
Tuesday	1.35½	1.30½	1.40

Chicago.—May wheat \$1.34½; July \$1.25½ per bushel.

Corn.—Primary receipts have been small, due to poor country roads, and despite the bearish influence of wheat and the possibility of liberal deliveries at this season, the market for corn appears well founded, as the price changes show. The visible supply increased 1,756,000 bushels. One year ago No. 3 corn sold at 78½¢ per bushel. Detroit quotations for last week are:

	No. 3	No. 3
	Mixed	Yellow
Wednesday	75	76½
Thursday	75	76½
Friday	75½	77
Saturday	76½	78
Monday	76	77½
Tuesday	76	77½

Chicago.—May corn 80.5c; July 80.4c.

Oats.—Receipts of oats have been fairly large and the eastern demand somewhat restricted, which conditions gave the bears a chance to force values down. Visible supply decreased a half million bushels. Standard oats a year ago were quoted at 61 cents. Last week's Detroit quotations were:

	No. 3	No. 3
	Standard	White
Wednesday	55	53½
Thursday	55	53½
Friday	55½	54
Saturday	55½	54
Monday	54½	53
Tuesday	53½	52½

Chicago.—May oats 51.7c; July 48.5c.

Rye.—Cash No. 2 has advanced to \$1.03 per bushel.

Barley.—Milwaukee price for malted 76¢80c; Chicago's price 68¢80c.

Beans.—Market is firm and inactive with immediate prompt and February shipment steady at \$3.70 per bushel. At Chicago Michigan hand-picked pea beans are quoted at \$4.10@4.15; prime \$3.90@4; red kidneys \$4.90@5.25. At Greenville farmers are selling on a \$3.30 basis.

Timothy Seed.—Prime spot \$3.80.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent 77; seconds \$6.70; straight \$6.50; spring patent \$7.40; rye flour \$6.50.

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

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is easy and prices are 1c lower. Supplies are ample. Extra creamery 30c; firsts 27½c; dairy 20c; packing stock 18c.

Eggs.—Trade has been quiet and market is easy. Prices are down 1c and quotation being 30c.

Chicago.—The trade is slow for all kinds at prices slightly lower than last week. Extra creamery 30c; extra firsts 28½c; firsts 25c@27c; extra dairies 29c; packing stock 19½c.

Eggs.—The supply is light and the prices are ½c higher. Current receipts are quoted at 27½c; candled firsts 28½c per dozen.

Chicago.—The feeling is firm. Many of the arrivals are not fresh. Prices higher. Firsts 29c; ordinary firsts 27c@28c; miscellaneous lots, cases included 24c@29c; refrigerator stock 14c@17c, depending on quality.

Poultry.—The market is firm and the demand is active. Prices are unchanged. Turkeys 16c@17c; spring turkeys 21c@22c; fowls 10c@16c, according to quality; spring chickens 15c@16½c; ducks 17c@18c; geese 16c@16½c.

Chicago.—Little change in the market. Springs and fowls a little higher. Staggy young chickens will be discriminated against hereafter. Turkeys, young and old 12c@18c; fowls 15c; springs 16c; ducks 16c@18c; geese 10c@13½c.

FRUITS AND VEGETABLES.

Apples.—There is no change, the market being quiet. Greenings at \$2.50@3.50; Spys \$3.50@4; Baldwins \$2.50@3.50; Steel Red \$4.50@5. At Chicago the peddlers are taking lower grades but the demand for better grades is slight. No. 1 Greenings \$2.50@2.75 per bbl; Jonathans, No. 1, \$3@3.50; Baldwins \$2.75@3.25; Wageners \$2.25@2.75; Spys \$3@3.75.

Potatoes.—Are firm but prices are 5c lower. Carlots on track, white and red \$1@1.05 per bushel. At Chicago the demand was slower and prices lower. Fancy Michigan Rurals sold for 92¢97c per bushel. Other prices range from 90¢@\$. At Greenville the farmers are being paid 75¢80c per bushel. The arrivals are light.

WOOL.

Sales at Boston last week were large and the market was very strong. Eastern houses have already sent representatives to western producing sections to make early arrangements for the new crop. Fleeces are again active with some Michigan delaine unwashed selling at 29c; Ohio half-blood at 32c; three-eighths blood 35c.

DETROIT EASTERN MARKET.

Offerings limited, apples going at 60c@1.50; potatoes \$1@1.40; carrots 90c@1; parsnips 70¢75c; cabbage 60¢70c per bushel; pork \$10.50; loose hay moving slowly around \$20 a ton.

GRAND RAPIDS.

The local egg market is off to 25c at the opening this week, though prices will be higher if cold weather comes as promised. Dairy butter is steady at 23c. The potato market does not show much change, though locally the market has weakened a little during the past week, due to liberal receipts. Apples, common stock, are being quoted at 50¢75c; cold storage stock at 75¢@1.50, and with season so well advanced the situation does not look encouraging for people with apples to sell. Hay sells for \$14@17 on the city market. Fowls are worth 12¢14c live weight. Grain prices as quoted to the farmers at mills are: No. 2 red wheat 60-lb. test, \$1.29; white oats 50c; corn 78c; buckwheat 70c; rye 90c; white beans, hand-picked basis \$3.75.

LIVE STOCK MARKETS.

Buffalo.

January 31, 1916.
(Special Report of Dunning and Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts of stock here today: Cattle 130 cars; hogs 100 d. d.; sheep and lambs 42 d. d.; calves 1000 head.

With 130 cars here today our cattle market was very slow and draggy, the bulk selling 10¢15c lower, although there were a few loads of good shipping cattle that sold about steady. The cow trade was very mean and the bulk of them sold 10¢15c lower. We look for the weather to get cooler and look for better market next Monday, as the past two Mondays have been very mean.

Receipts of hogs were rather light here today and with a good demand from all sources market was 10¢25c higher than the close of Saturday, the bulk of the best grades selling around \$8.35, a few fancy loads a little more; pigs and lights, as to weight and quality, from \$7.25@7.75; roughs \$7@7.25; stags \$5@5.75. Choice grades of hogs closed firm, but light stuff very dull and some of the latter kind going over unsold.

The sheep and lamb market was active today and prices steady with the close of last week. All sold and we look for steady prices balance of the week.

We quote: Lambs \$11.15@11.25; cull to fair \$8@11; yearlings \$8.50@10; bucks \$4.50@6.25; handy ewes \$7.25@7.50; heavy ewes \$7@7.25; wethers \$7.75@8; cull sheep \$4.50@6; veals, good to choice \$11.25@11.50; common to fair \$8@10; heavy \$6@9.

Chicago.

January 31, 1916.
Cattle. Hogs. Sheep.
Receipts today..12,500 62,000 15,000
Same day 1915..6,550 33,146 13,208
Last week....51,935 278,117 57,621
Same wk 1915..38,861 191,902 70,362

Shipments from here last week were cattle 9,000; hogs 42,317; sheep 9,026, comparing with 11,714 cattle; 53,116 hogs and 17,451 sheep a week earlier, and 4,464 cattle; 24,382 hogs and 4,955 sheep a year ago. Hogs received last week averaged 200 lbs.

Cattle looked 10¢15c higher today, the recent slump in prices resulting in an unusually small Monday supply. Hogs advanced 10¢15c, with sales at \$7.45@8.15. Buyers of sheep and lambs were holding back and trying to break the market, but early sales were at steady prices.

Every Farmer needs these Grinding Plates

THEY save time and expense in grinding all kinds of grain. But here's the principal feature—they grind green, soft corn rapidly and fine without choking. This is made possible by our new improved grinding plates made for all styles of

New Holland Feed Mills

If you already have a NEW HOLLAND, we'll make it better than set of these plates. Or if you are a new mill, ask us about our proposition before you purchase some other mill.

NEW HOLLAND MACHINE CO.
Box 103.
New Holland, Pa.

Twist Its Tail!

And Save An Extra \$222 Per Day
The Bales Steel Mule

30 H.P. \$750
30 H.P. \$865
Write Now And We Will Tell You About It
JOLIET OIL TRACTOR CO.
762 BENTON ST. JOLIET, ILL.

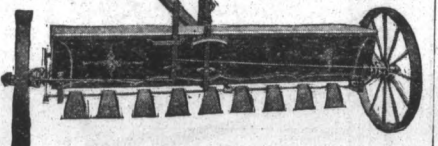
This Is The Time Of The Year

When large drainage projects are being talked. Get busy with your County Commissioner and see that the next drain tile laid across your farm is the "American" Brand Vitrified Salt Glazed everlasting tile. Let us furnish you an estimate of the cost of our Vitrified Tile for these projects. It is Frost-Proof, Acid-Proof and Time-Proof. Made in Michigan by Michigan Men. Sizes 3 to 27 inches inclusive.

Write today for Carload Prices.
American Sewer Pipe Co.,
200 St. James St., Jackson, Mich.

The Guarantee Lime & Fertilizer Spreader

Write for low price and Catalog B-50
Sooner or later you will buy this complete spreader. Why not now?



The GUARANTEE SPREADER is the most durable spreader manufactured. Will spread evenly or sow in rows. Has the latest improvements. All regulations can be made from seat, including shifting clutch that throws machine in and out of gear. Fully equipped with acre-mark, indicator, screen, 3-lb. seat, neck-yoke, double and single-trees. WE PAY FREIGHT. A real dependable spreader.

The Guarantee Manufacturing Company.
Dept. B-50. Baltimore, Md.

The New "ARROW" Read! Electric Light
Easy motorcycle saddle—New coaster brake—motorcycle mud-guards, stand and luggage carrier—motorcycle pedals—long rubber grip motorcycle handle bars—complete tool kit and tire pump—re-inforced motorcycle frame—your own initials. Flak Thorn-Proof Non-Skid Tires—Beautiful finish. Write TODAY.

New Motorcycle Type

Write for our new 1916 catalog. Read the wonderful 1916 improvements above. Other features, too. Every convenience to make riding a pleasure. Send for catalog. The New Arrow—the most wonderful bicycle value ever built. All sizes for boys, men and women.

Pay As You Ride A small amount down brings you the 1916 Arrow—enjoy riding it right away—pay just a little each month while you ride. Write for rock-bottom direct offer.
WRITE TODAY Get our new free catalog of this wonderful 1916 Arrow and our rock-bottom offer. While it lasts. No obligations. Don't delay. Write now.
Arrow Cycle Co., Dept. 4382, California & 19th St., Chicago, Ill.

Maple Syrup Makers

You get best Results with our **Champion Evaporator**

Quick work, fuel saving, durability and **BEST QUALITY OF SYRUP.**

Write us for CATALOGUE.

Champion Evaporator Company, Makers, Hudson, Ohio

WANTED Farmers to know they can buy their FENCE POSTS and CEDAR BUILDING BLOCKS direct from the woods, freight paid. The W. H. BLAKE CO., Cheboygan, Michigan.

New Edition (264 Pages) of "Modern Silage Methods"

Only 10c
ENTIRELY a new book—new chapters—tells facts about every type of silo—home made, stave, brick, cement, tile, metal, pit, etc. Tells best for your needs—impartial suggestions for making most profits. 264 pages—10 page index—Copyrighted Nov. 1914, covers 41 silage crops. Send for new book; it beats all previous editions. Write today. Mailed for 10c. Mention this paper. Silver Mfg. Co., Salem, O.

CHEAP POWER

It isn't rating but actual delivered power at small cost that you want. **Chapman Engines** saw 22 cords wood or Grind 50 bushels corn with one gallon gasoline. Cut and elevate a ton of ensilage for 2c. State what you want and get our prices on guaranteed power, also on Sprayers, Pumps, Ensilage Cutters, Feed Mills, Emery grinders, wood saws and Forges. Address: Engine Works, Box F 95, Marcellus, Michigan.

Tile Silos

We are the originators of hollow block tile silos; and our first silos are still standing, in perfect condition and without repairs, after 11 years steady use. Send for Catalog on "Success Ideal Silos." **The Louisville Brick & Tile Co.,** Dept. A. - Louisville, Ohio.

SEED BEANS

Fancy stock, free from Anthracnose. All leading varieties, both field and garden. Clover, Timothy, Vetch and other Farm and Garden Seeds. write today for wholesale price list No. 21.

A. H. Foster, Allegan, Mich.

FRUIT TREES AND HOW WE MAKE THEM

For 30 years our true to label trees have been finding their way into Michigan Orchards. They have made good as proven by the men who are fruiting them. Our book of suggestions will interest you. Ask for it.

H. S. Wiley & Son, MAIN STREET, Cayuga, N. Y.

Hayes SPRAYERS
29 STYLES, from small Hand Sprayers to the Largest High-Pressure Power Sprayers built. FREE book on Spraying and 64-page Catalog. Write **HAYES PUMP & PLANTER CO. Dept. 45 GALVA, ILL.**

PURE FIELD SEED

Clover, Timothy, Alsike, Alfalfa and all kinds of PURE FIELD SEEDS direct from producer to consumer; free from all noxious weeds. Ask for samples.

A. C. HOYT & CO., Box M, FOSTORIA, OHIO.

Why Pay Seven Cents Per Pound, for having your beans picked over at the elevator, when you can PICK THEM YOURSELF, on one of our bean pickers, that cost \$4.00 Vassar. Send your money or write for catalog, to, **The Miller Co., Vassar, Mich**

Clean, Disease-Free **SEED POTATOES**
John V. Harrison, Sec. of Manton Potato Growers Ass'n. Manton, Mich.

Member Mich. Experiment Association, Seed Oats, 5, "The Corn Belt Oat," also Worthy's. Not damaged by wet. Free from smut. Sample and prices on request. **E. S. CHRISTIANSEN, CORAL, MICH.**

Scarified Hulled and Unhulled **WHITE SWEET CLOVER**
Young, Randolph Seed Co., Owosso, Mich

Seed Corn 5000 Bushels sound Seed Corn, also Oats, Barley, Alfalfa, etc. 1200 Acres. 40 Page Catalog FREE. **W. N. SCARFF, Box 4, New Carlisle, Ohio**

RUFUS B. HOLMES CO.

High and Riopelle Sts. Detroit, Mich.

Commission Merchants

Poultry, Live or Dressed, Dressed Hogs, Calves, Sheep and Eggs. Reference, Peninsular Savings Bank, Sullivan Packing Co. Shipments Solicited. Satisfaction Guaranteed.

HAY Ship your good quality to us. Highest Market Prices. **E. L. Richmond Co., Detroit.**

HAY OUR NEW LOCATION— 623-625 Wabash Bldg., Pittsburgh, Pa. **Daniel McCaffrey's Sons Co.**

THE HARPSTER COMMISSION CO., Union Stock Yards, Toledo, O. Sell live stock on commission, get highest prices and best fills. Try them. Daily market, force of six looks after your interest. Financially backed by over \$1,000,000.

FARMERS—We are paying from two to five cents above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. **American Butter & Cheese Co., Detroit, Mich.**

MAN IMMORTAL NOW Swedenborg's "Heaven and Hell." 400 pages, 15c post paid. Pastor Landenberger, Windsor Place, St. Louis, Mo.

\$40 per month and expenses paid good men for taking orders. Steady work. Apply Protective Nurseries. **Geneva, N. Y.**

Honey 10 lb. Pail, Amber, post paid in zone one and two \$1.25. White \$1.40. **E. E. MOTT, Glenwood, 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.
January 27, 1916.

Cattle.

Receipts 1693. The market opened at the local yards Thursday morning with a fair supply on sale and about 100 cars in sight at eight a. m. All roads did well and everything was yarded early. Weather conditions were very bad on Thursday, it having rained hard all night and the yards were in a terrible condition.

In the cattle division the market opened Wednesday with all grades bringing about last week's closing prices, but the close Wednesday was dull and on Thursday everything but canners were fully 10@15c lower, the demand from the country for stockers and feeders being light and wholesale butchers say the dressed beef trade is very dull and draggy on account of the unusual warm weather. The close was dull at the decline as follows:

Best heavy steers \$7@7.50; best handy weight butcher steers \$6.50@6.65; mixed steers and heifers \$6@6.25; handy light butchers \$5@5.65; light butchers \$4.75@5; best cows \$5.50@5.65; butcher cows \$4.75@5; common cows \$4@4.50; canners \$3@3.75; best heavy bulls \$5.50@6; bologna bulls \$5@5.25; stock bulls \$4.25@5; feeders \$6@6.80; stockers \$5@5.75; milkers and springers \$35@75.

Sandel, S. B. & G. sold Hammond, S. & Co. 2 cows av 955 at \$4.50, 2 do av 1000 at \$3.75, 1 do wgh 1240 at \$6, 2 steers av 980 at \$7, 2 do av 650 at \$5.50, 2 cows av 1135 at \$5.25, 2 steers av 925 at \$7.50; to Golden 7 butchers av 700 at \$5; to Steinberg 3 do av 757 at \$6.25; to Bray 3 cows av 913 at \$4.25; to Mich. B. Co. 2 steers av 940 at \$7, 10 butchers av 869 at \$5.35, 17 do av 761 at \$6.25, 1 bull wgh 1150 at \$5.50, 14 steers av 1042 at \$6.90, 10 do av 858 at \$6.60, 1 cow wgh 1310 at \$6; to Hammond, S. & Co. 1 cow wgh 1130 at \$3.75, 1 do wgh 940 at \$4, 1 do wgh 1170 at \$5.25; to Mason B. Co. 1 bull wgh 1050 at \$5.50, 4 steers av 970 at \$6.75, 1 do wgh 1000 at \$6.25, 1 do wgh 900 at \$7.25, 4 butchers av 715 at \$5.60, 1 steer wgh 830 at \$6.25; to Mich. B. Co. 2 do av 780 at \$6; to Thompson Bros. 14 butchers av 716 at \$5.90.

Reason & S. sold Bray 4 cows av 1017 at \$5.10; to Thompson Bros. 3 steers av 1130 at \$7.25, 6 do av 993 at \$6.50, 4 do av 792 at \$6.15, 7 do av 720 at \$6.35, 2 cows av 960 at \$5.50, 2 do av 1150 at \$5.50, 1 bull wgh 1010 at \$5.50; to Bray 5 cows av 983 at \$5.

Haley & M. sold Bray 1 cow wgh 810 at \$4, 3 do av 970 at \$5, 5 do av 1094 at \$5.50; to Hammond, S. & Co. 1 bull wgh 1880 at \$6, 1 do wgh 1370 at \$5.50; to Applebaum 1 heifer wgh 570 at \$5.25; to Thompson Bros. 1 steer wgh 1120 at \$7; to Kamnan B. Co. 3 cows av 1007 at \$5.60; to Hammond, S. & Co. 2 do av 750 at \$3.75, 2 do av 925 at \$4.25, 1 do wgh 970 at \$4.25; to Breitenbeck 18 butchers av 774 at \$6.25; to Hammond, S. & Co. 19 do av 1091 at \$6.90, 2 do av 790 at \$7, 1 cow wgh 1060 at \$4.

Veal Calves.

Receipts 642. The veal calf trade was dull, especially so on common and heavy grades which were 50c@1 lower than last week. Good grades steady. Best \$10.50@11; culls \$7@8; heavy \$5@7.

Haley & M. sold Nagle P. Co. 9 av 170 at \$10.50, 8 av 140 at \$10.60, 7 av 150 at \$10.50, 2 av 150 at \$10.50, 1 wgh 150 at \$11.

Sheep and Lambs.

Receipts 4819. The sheep and lamb trade opened steady on Wednesday morning but prices at the close were 15@20c lower and on Thursday the market was steady at the decline, top lambs bringing \$10.50. Best lambs \$10.50; fair do \$9.75@10.25; light to common lambs \$8@9.50; yearlings \$9.50; fair to good sheep \$6@6.75; culls and common \$4@5.

Haley & M. sold Parker, W. & Co. 6 sheep av 120 at \$6.75, 8 do av 85 at \$5.50, 6 do av 135 at \$6.75, 37 lambs av 75 at \$10.60, 8 do av 75 at \$10.50; to Nagle P. Co. 14 do av 75 at \$10.60.

Roe Com. Co. sold Sullivan P. Co. 11 lambs av 65 at \$10.25.

Sandel, S. B. & G. sold Sullivan P. Co. 13 lambs av 65 at \$9.50, 18 sheep av 100 at \$6.75; to Hammond, S. & Co. 18 sheep av 90 at \$5.75, 35 lambs av 90 at \$10.50.

Hogs.

Receipts 10,982. The hog trade was dull and draggy and 5c lower than on Wednesday on all grades. Pigs \$6.25@6.65; yorkers and heavy \$7.35@7.45.

PRINCE ALBERT

the national joy smoke

puffs its kindly way right into your good will because it is so friendly and cool and fragrant. You may smoke it as long and as hard as you like and it will not bite or parch or tire your taste! The patented process by which Prince Albert is made fixes that!

You smokers should realize that the Prince Albert patented process is owned exclusively by us; that no other tobacco can be like Prince Albert. And you'll find out how different P. A. is from any other tobacco you ever smoked just as soon as you try it and know for yourself that what we tell you is proven by your own test!

Buy some today and smoke it in your old jimmy pipe. It will absolutely delight you!

Buy Prince Albert everywhere tobacco is sold. Tippy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and in that fine crystal-glass hamidor with sponge-moistener top that keeps the tobacco in such splendid condition—always!

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N. C.

On the reverse side of this tidy red tin you will read: "Process Patented July 30th, 1907," which has made three men smoke pipes where one smoked before!

KITSELMAN FENCE

Get It From the Factory Direct
Horse-High, Bull-Strong, Pig-Tight
Made of Open Hearth wire, heavily galvanized—a strong, durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:
26-inch Hog Fence - 12 cts. a rod.
47-inch Farm Fence - 18 cts. a rod.
48-inch Poultry Fence - 24 cts. a rod.
Special Prices on Galv. Barbed Wire.
Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free.
KITSELMAN BROS. Box 278 Muncie, Ind.

400,000 Farmers Have Bought 25,000,000 Rods!

BROWN FENCE
DIRECT FROM FACTORY FREIGHT PREPAID
Every inch Basic Open Hearth wire, Double Galvanized.
13c PER ROD UP.
Money Saving Fence Book and sample free. Just write postal now to THE BROWN FENCE & WIRE CO. Department 49 Cleveland, O.

1916 SPLIT HICKORY VEHICLES

From Our Factory Direct To You
The Ohio Carriage Mfg. Co. Columbus, O.

Address: H. C. PHELPS, Pres. THE OHIO CARRIAGE MFG. CO. Station 68 Columbus, O.

Greatest Buggy Book FREE-Postpaid

My new 1916 Buggy Book is now ready. It is bigger and better than ever—the finest vehicle catalog ever published. I want you to have a copy this year sure. Every year thousands of buggy buyers write for my big Free Catalog. They read it to know how fine vehicles are made and what they should cost. They know that for 16 years Split Hickory rigs have set the pace in style and price. Just drop me a postal and I'll send it free—postpaid. Shows 150 styles—more than you could find in 20 stores. Contains the most surprising, money-saving announcement any vehicle manufacturer ever made. Write for your Free copy TODAY. Do it NOW—before you forget.

SPLIT HICKORY

Vehicles are famous the world over for quality, style, comfort and service. They are the finest made—built of second growth hickory—split, not sawed. They look trim; they run light; they ride easy; they stand up under the hardest knocks. To prove the superior quality I give

30 Days' Free Road Test

You can drive a Split Hickory on your own roads—under your own conditions for 30 days before you decide. You take no chances—my Ironclad Guarantee make you safe. My new prices splitting offer enables you to get a genuine Split Hickory now as low as only \$39.25. Write for my big Free Book today. See for yourself the money you can save.



Catalog Shows 150 other Styles for \$39.25 and up

Get My Special Wagon and Harness Catalogs in a new Farm Wagon or a new set of Harness. Be sure to ask for my Special Catalogs of Split Hickory Farm Wagons and Harness. Both books sent free and postpaid on request. Write H. C. PHELPS, Pres.



DUNHAMS Percherons

For Fifty Years The Best
Send for fine Photographic Catalogue.

Dunhams, Wayne, Dupage County, Illinois LOESER BROS.

We have 100 head of Belgian and Percheron Stallions and mares. Imported and home bred. We have sold pure bred horses in Michigan for the last 25 years, and have the right kind, and at the right price. We can supply any number of work horses, both geldings and mares. Get in touch with us.

LIGONIER, INDIANA.

Percheron Opportunity

70 Head must be sold to close Estate.
General No. 67466 winner of Senior Grand Championship at 1911 International at head of herd for two years.

A. A. Palmer, Estate
(R.R.) Orleans. (P.O.) Belding, Mich.

20 Head of Percheron 20

Stallions and Mares

As good as can be found. Royally bred, some of them by the great \$10,000. Champion Carnot (6666). All recorded in P. S. A. Studbook. If you want good ones come and see me direct. They will be priced right.

H. A. ROHRS & SON, R. D. No. 4. Napoleon, Ohio.

JACKS AND MULES

Raise mules and get rich. 200 head fine large jacks, jennys and mules, 14 to 17 hands high. Large registered jacks and draft stallions cheap now. Will trade for sheep, cattle or horses. Write for prices today. Stock guaranteed. Address: KREKLER'S JACK FARM



FOR SALE—Registered Percheron Stallion Mare and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Registered Percherons

Brood mares, Fillies and Young Stallions. Priced to sell. Inspection invited.
L. C. HUNT & CO., Eaton Rapids, Michigan.

Percherons, Holsteins, Angus, Shropshires, Durocs
DORR D. BUELL, Elmira, Michigan.

For Sale. Registered Black Percheron Stallion, seven yrs. old, sound and a sure foal getter, weight eighteen hundred lbs. Address CHAS. PIART, R. No. 7, Traverse City, Michigan.

Penny Postal Brings Book of Facts

Before you buy any fence, get this valuable book. Empire Fence Big No. 9 wires, open hearth steel heavily galvanized. Bond Steel Post Co. Direct from factory—freight prepaid. Save dealer profits. Thousands write that it outlasts everything else.
165 Maumee St., Adrian, Mich.

This Year We Are Making Twice as Many

1916
Fourteen Million

Champion
TOLEDO MADE FOR THE WHOLE WORLD'S TRADE
Dependable Spark Plugs

1915
Seven Million



What Our Big Production Means to You

Year after year for many years, we have made more spark plugs than all the others combined.

Year after year we have greatly enlarged our output.

This year we will double last year's production.

Year after year we have made Champions more and more dependable.

As our production has grown we have been able to adopt extreme and still more extreme measures to insure dependability—

Because—as our production increases we can distribute the expense of these extremes of engineering, of testing and of processing over a vastly larger number of spark plugs.

That's why Champions are so much more dependable.

Your dealer will supply you with the Champion designed to serve your car more dependably than any other. Look on the porcelain [not merely on the box] for the name Champion.

Champion Spark Plug Company
504 Auburndale Ave. Toledo, Ohio



Bates All Steel Oil Tractor

The **Bates All Steel Oil Tractor** is the oldest tractor on the market. Years of hard service has developed every detail and it is entirely out of the experimental stage. It is a Real Tractor and will stand years of hard work.

If you buy a **Bates All Steel Oil Tractor** it will last you a long time. You won't have to buy a new machine every spring.

No Chains

The **Bates All Steel Oil Tractor** has positive Steel Gears that are guaranteed not to break for five years, you won't have to bother with troublesome chains that have proven a failure in all self-propelled machines.

A Four Wheel Tractor

The **Bates All Steel Oil Tractor** has four wheels, two wide rear wheels for drivers which provides an abundance of traction and won't mire in sandy places or on soft ground in the spring of the year but will go where horses can be driven practically. This construction has become a standard with manufacturers who have had long experience in building self-propelled machines, therefore, we could not ask our customers to accept a machine that is experimental.

All Steel

The **Bates All Steel Oil Tractor** is light in weight which is accomplished by the use of steel in its construction, however, we have not gone to the

extreme and sacrificed strength and rigidity that we might produce a machine that is extremely light. Our engine is slow speed and will last a long time.

Oil For Fuel

The **Bates All Steel Oil Tractor** is manufactured in our own factory and is of special design. It can be found only on our engines and is the product of 20 years actual experience in the manufacture of gas engines. It is fully developed and will operate equally as well on kerosene as gasoline under all speeds and all loads. It won't bother with carbon or tar. You won't have to change from kerosene to gasoline when the engine is running empty or under part load. Think of the immense saving with this cheap fuel.

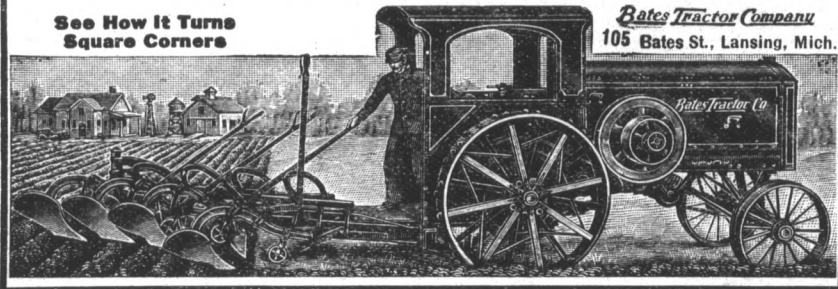
Solid Facts

The **Bates All Steel Oil Tractor** is directly connected to the plow carriage and you can back the plow into the corners of the field and plow all of the field. The plows operate independently and will do good work in stony and rough ground. One man can operate the entire outfit.

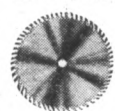
The **Bates All Steel Oil Tractor** has two speeds forward and will draw heavy loads up steep hills. Our cab is appreciated by hundreds of our customers. We are not assemblers, we build our entire outfit in our own factory.

2 sizes: 16 and 30 H. P. Send for catalog.

Bates Tractor Company
105 Bates St., Lansing, Mich.



CORD WOOD SAWS



Made of special saw steel after our own analysis. Every saw given uniform and tough temper to the very points of the teeth. These saws hand set and filed. Arbor hole 1 1/2 in.

Satisfaction Guaranteed

Size	Price	Size	Price	Size	Price
20 in.	\$2.50	24 in.	\$3.50	28 in.	\$4.75
22 in.	\$3.00	26 in.	\$4.00	30 in.	\$5.25

Hardwood Tilting Table Saw Frame. Weight 370 lbs. Thoroughly braced, complete, \$14.90. Send personal check or money order. We make immediate shipment by express or freight.

FARMERS' CEMENT TILE MACHINE CO., St. Johns, Mich

LEARN AUCTIONEERING at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog.

JONES' NAT'L SCHOOL OF AUCTIONEERING.
28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

When writing advertisers mention Michigan Farmer

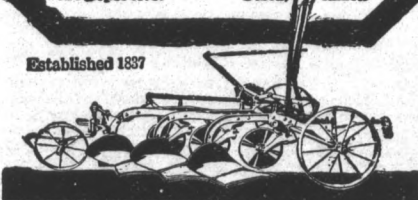
Is your soil gumbo or sandy, loam or muck? The right plow to turn it up is

THE G. D. JUNIOR

Fitted with any style of bottom. The lightest tractor-plow built. Double-braced where others are weak. 2 or 3 bottoms. Power-lift. Back-up-able. Turns short, clear of trash. Any hitch. The ideal plow for a light tractor. Write today for catalog—tell us how much you farm.

Grand Detour Plow Company
3324 Depot Ave. Dixon, Illinois

Established 1837



Practical Science.

GASOLINE.

With the increasing use of automobiles and internal combustion engines among the farmers of the state, and the use of gasoline for fuel as well as light, there has come a considerable demand for acquaintance generally by the people with safe methods in the handling of gasoline. Gasoline is a commodity which is used very extensively, of course, and is much more hazardous to handle than is kerosene, with which people are more familiar. In the interests of safety, we have felt it extremely timely to offer the following article, gotten out by Mr. Burrell, of the United States Bureau of Mines, on "Hazards in Handling Gasoline."

Introduction.

With the increasing use of gasoline and other liquid fuels that are dangerous because of their ready inflammability there is each year an increasing number of accidents that cause loss of life and great damage to property. In connection with investigations regarding safety and efficiency in the use of petroleum and its products, the Bureau of Mines has made numerous tests of gasoline and kerosene. This report discusses hazards that may result from handling the liquids mentioned, and outlines precautions to be observed in handling them.

A recent tabulation by K. G. Martin, of the fire prevention bureau of New York city, shows that during 1913 in the United States 1,040 persons were burned to death and 3,120 persons injured (a weekly average of 20 persons killed and 60 persons injured) on account of gasoline fires.

A study of 1,000 fires showed that 77.1 per cent were due to gasoline, naphtha, and benzol; 53 per cent were due to open flames, matches, and static or frictional electricity.

In 1912, from transportation of gasoline on railroads alone, there resulted a property loss due to fires, of \$31,215, and in 1913 the loss from that source had increased to \$117,697.

Miscellaneous Hazards in the Use of Gasoline.

In gasoline-lighting systems, there are many hazards that can be introduced by faulty design and construction of apparatus. Among these are corrodible material, improperly made joints, and valves of poor design.

Many fires originate from the cleaning of silks with gasoline, the violent rubbing of the silk generating static electricity which produces a spark that ignites the vapor.

Many jobbing tailors cause fires by using gasoline in an open vessel and smoking a cigarette or cigar at the same time.

A dangerous practice, common in many garages, is the cleaning of automobile parts with gasoline from an open can. Employees find it easy to clean grease and oil from the motor and other parts with a brush saturated with gasoline, and the gasoline is readily ignited by a spark. Such a spark may be caused by striking two pieces of metal together, by the ignition system on the automobile when the starting crank is turned, and in other ways. In one instance a nut that stuck was struck with a wrench, causing a spark, and the car was instantly enveloped in flame.

Oily waste should at all times be placed in a safe receptacle, to avoid the danger of spontaneous combustion. Oily waste will decay, smolder, and in time burst into flame. Sawdust, when soaked with oil drippings will do the same thing, and its use should be forbidden. Sand is a safe material to use as an absorbent of oil.

Another source of fires is the use of kerosene in lighting fires in the ordinary cooking or heating stove. Kero-

sene should never be poured in a stove in which there is a spark of fire; neither should it be used in a stove in which the fire is out, but in which parts of the stove are still warm. Neither should kerosene lamps be filled while lighted, a practice that is widely prevalent in country districts. Kerosene lamps with metal oil wells are safer than, and are preferable to, lamps with glass fonts.

Detailed Precautions Concerning the Handling of Gasoline.

In establishments where benzine, gasoline, naphtha, and other inflammable liquids are used, care should be taken to see that the smallest practicable quantities are used, and that the liquids are handled in an approved manner. No open light or flame of any kind, nor any machine or belt capable of producing a spark should be allowed in the room where the gasoline is being used. All shafting and machines with belts that are liable to cause a static electric spark should be well grounded.

Only incandescent electric lights should be used, and these should be provided with guards to prevent their being smashed.

All electric switches, fuses, etc., should be outside the room.

Danger signs should be posted on all doors opening into the room, warning against the carrying of open lights of any kind inside.

When large quantities of the inflammable liquids mentioned are used the main supply should be stored in a metal tank buried underground and a safe distance from buildings. The working supply should be pumped into the buildings as needed, and the system so arranged that when the pump is stopped all liquid in the pipes will flow back into the supply tank. When it is not possible to use a pump and a buried tank the main supply should be stored outside and well away from other buildings, under lock and key. Only small quantities of working supplies should be taken into the building, closed metal cans, preferably safety cans, being used as containers.

When the use of an open pan is necessary the opening should be as small as possible and a cover should be provided. The cover should be put on whenever the pan is not in use.

Signs should be posted prohibiting an open flame near the place of storage or near a pump or other handling apparatus. The signs should explain the danger involved and give instructions for safe methods of operation.

Empty gasoline barrels should be stored with bungholes down, in safe places in the open air.

Rooms in which explosive or dangerous gases or vapors are used or generated, should be safely inclosed, and should be provided with an improved system of ventilation.

Gasoline vapor is heavier than air, and a suction fan should be used to insure proper ventilation.

Joints in tanks, pipes, conveyors, etc., used for storage of explosive liquids, gases, or vapors should be kept tight.

Before work is done on vessels, pipes, etc., sufficient time should be given to allow gas to escape.

Special care should be exercised before work requiring the use of heat or flame is done. Apparatus that has contained explosive gas should be filled with water or steam to force out the gas.

Every Farmer Should Read It.

"I think every farmer in Michigan ought to read the Michigan Farmer, as it tells more about agriculture in Michigan than any other paper. I have read the paper for three years and expect to read it as long as I am farming."—Carl Tolpo, Ludington, Mich.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.
Vice-president—C. B. Scully, Almont.
Secretary and Treasurer—Mrs. J. S. Brown, Howell.
Directors—Alfred Allen, Mason; C. T. Hamline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns; Mrs. C. J. Reed, Spring Arbor; Mrs. R. E. Moore.

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

CLUB SECRETARIES.

Secretaries of local Clubs represented at the annual meeting in December are requested to send the names and addresses of their delegates to that meeting to Mrs. Jos. S. Brown, Associational Secretary, Howell, Mich. Mrs. Brown has been unable to date to recover her register book which was taken from her desk at the annual meeting. A prompt compliance with this request will be appreciated by the secretary, and will enable her to complete her records of that meeting.

YEARLY PROGRAMS.

President R. J. Robb, of the State Association of Farmers' Clubs, offers a suggestion which should be productive of good results if adopted by the local Clubs as far as possible throughout the state. He suggests that inasmuch as a large number of our local Clubs now use printed yearly programs, it would be well for all Clubs having such booklets to have a sufficient number of them printed for exchange purposes, and signify their willingness to exchange programs by sending a copy with this information to the editor of this department, in order that an exchange list may be prepared for the benefit of Clubs desiring to make such exchange. State President Robb also expresses the desire to receive a copy of such programs to be used by the executive committee by way of suggestion in making up the program for the next annual meeting. He also adds that any Club that has on any program an especially interesting and instructive paper would be extending its area of usefulness by sending a copy of same to the editor of this department for use at such time as space will permit.

The ideas advanced by President Robb will, if adopted by the corresponding secretaries of local Farmers' Clubs, add materially to the interest and usefulness of this department, and we trust that they may be generally acted upon. It is particularly desirable that any new Club feature, such as an institute, a lecture course or any variation in the regular Club program which is of more than ordinary local interest be passed on by way of suggestion to aid other Clubs in making their programs a more potent force in promoting a general attendance of the Club meeting, especially by the young members of a community in which the Clubs are held.

Plan Year's Work.—The Four Towns Farmers' Club met January 20 at the pleasant home of Lucius Jones, when there was a general round-up of the members and all enjoyed the dinner. Guy Baker was appointed chairman for the day and the following officers were elected for the year: President, Mert Aldrich; vice-president, Guy Baker; secretary and treasurer, Allen Findlay; assistant secretary, Miss Myrtle Jones; corresponding secretary, R. McQuater. The retiring officers were Lucius Jones, Fred Kibble and John Young. Committees were appointed to supply music and entertainment for future meetings. At the next meeting it is expected that a schedule of meetings for the year will be read, including subjects for discussion regarding the raising of beans, drainage and how to market farm products by co-operation with the federal government. The next meeting will be held at Mr. Merrill's just west of Gilford, February 17.

Grange.

SPECIAL POMONA MEETINGS.

Fifteen Granges were represented at the meeting of the Lenawee Pomona Grange, held January 18, which was one of the first of a series of meetings which are being held in Michigan on call of State Grange Master Ketcham for the purpose of getting into closer touch with individual Grange endeavor.

On January 17 Grange deputies were called together at Lansing to receive instructions from Master Ketcham relative to these Pomona meetings. Among the deputies present at the meeting was A. E. Illenden, who represents Lenawee county. Each of the deputies will represent the master at the Grange meetings held under the special call, gathering data concerning the various Granges and information concerning the work which they are attempting for the coming year. This is to be returned to the master, who will then be enabled to formulate plans for the state organization.

Deputy Miller, of Calhoun county, presided at the Adrian meeting. Under his direction all manner of questions were put to the Grangers as to the present status of their organization, the work which had been done during the past year and work which is to be attempted during 1916. The answers and discussions which ensued formed the basis of a report, which will be presented to the state master on Lenawee Granges.

Not the least interesting part of the meeting came when a committee which had been appointed a week previous to adopt resolutions expressing the attitude of the Lenawee Grangers on preparedness, made its report. The committee had been instructed to sound sentiment from as many sources as possible and to embody the expressions in the report.

That the Lenawee Grange is opposed to any increase in the present expenditures for army and navy; that while it does not believe the time has yet arrived for disarmament, it believes that the present expenditures are sufficient, "if economically used;" that the "calm judgment of peace" should rule our actions; this, in brief, is the sentiment of the Lenawee Grange as expressed.

Copies of these resolutions were authorized to be sent to the Congressmen and to the Michigan Senators, by a unanimous vote of the Pomona body.

There was considerable discussion when the resolution had been read by the committee, most of which was in line with the sentiment which the resolutions expressed. When the vote on the adoption as expressing the sentiment of the Grange was taken it was unanimous.

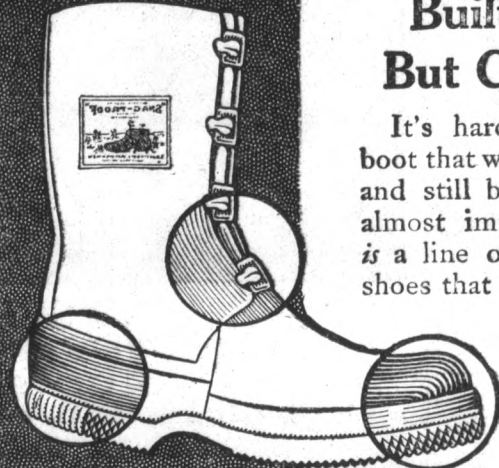
A Special Meeting of Pomona Grange was held January 18 in the hall of Charlotte Grange and there was an excellent attendance, 12 of the 17 subordinate Granges of Eaton county having representatives present to give reports.

The meeting was called to order by William Huber, Master of Pomona, and Miss Jennie Buell was the principal speaker. The central idea of the meeting was to find the weak points in the subordinate Granges of Eaton county in order that they might be strengthened and to point out the strong features of the various Granges in order that they might be adopted for the general good of the various Granges. The successful Granges were studied with the idea of finding out what makes them successful in order that all the Granges might co-operate to make the year 1916 the banner year. Miss Buell gave some splendid suggestions for lecture work, co-operation, helpful suggestions in regard to the initiatory work, etc.

A vote was taken that the executive committee should be given the authority to assist in re-organizing the weaker Granges in order to put them in a good flourishing condition.

Glass Creek Grange entertained Barry County Pomona Grange here January 18. Owing to the weather not a large crowd, but an enthusiastic one, was present. The meeting was opened by the worthy master, A. G. Hathaway. The subject of the county agricultural agent was taken up and discussed by the members of the Granges represented. Mr. L. C. Root, of Allegan, the state speaker, was then introduced and gave a splendid talk. Some of the subjects he touched upon were preparedness, trade contract, Grange urogression. The trade contract of the Grange is one of the main factors of the many benefits derived from the Grange. After the close of Bro. Root's talk the Pomona Master and Mrs. J. C. Ketcham gave some splendid suggestions for Grange work.—Mrs. George Havens, Cor. Sec.

"SNAG PROOF" Four Buckle Arctic



Built to Wear But Comfortable

It's hard to find a rubber boot that wears year in, year out and still be comfortable. It's almost impossible. But there is a line of rubber boots and shoes that you can buy with the full knowledge of satisfactory service. This line is sold under the name of

LAMBERTVILLE RUBBER FOOTWEAR

Look at the two Lambertville "Snag-Proof" goods illustrated here. Note how sturdily they're made—what strong reinforcements. Made of heavy sail duck and seven thicknesses of pure Para rubber—these boots are water-tight and wear-resisting

Ask your dealer to show you the Lambertville line. He'll tell you that money can't buy better rubber footwear. If he should not sell Lambertville Rubber Footwear, send us his name and we'll see that you are supplied at regular prices.

Lambertville Rubber Company
Lambertville, New Jersey

"SNAG PROOF" Short Boot

Come to Detroit

The Automobile Center

And

LEARN THE AUTOMOBILE BUSINESS

Big opportunities everywhere for Detroit trained automobile men. Interesting, pleasant and money making business. Ambitious men needed to start garage and repair shops everywhere. Learn how. Chauffeurs, garage and repair men, testers, etc., have more than they can do. Plenty of room for you.

EARN \$75 TO \$300 A MONTH

Students have experience of building new cars from start to finish—factory training in block testing, etc.—all the leading types of starting, lighting and ignition systems in operation. New 6-cyl. Losier Touring Car and 8-cyl. King Car used for road instruction. Just purchased—new 8-cyl. Cole Motor for block test dept. solely for students instruction. Just added 1916 Delco System as used in Buick, Hudson and Packard 12.

DETROIT IS THE PLACE TO LEARN

44 Automobile Factories. They all know and endorse our school. Students can go through them, including Detroit Electric Service Department, without extra charge. Remember, ours is the Old Reliable School, in the heart of the Automobile Industry. Start course anytime. Write for full particulars, guarantee and copy of "Auto School News" and new pictorial catalog—just out—ALL FREE. Or better still, jump on a train and come to Detroit, as hundreds have done. Learn the automobile business in Detroit and learn it right.

MICHIGAN STATE AUTO SCHOOL, 1002 Auto Bldg., 11-19 Selden Ave., DETROIT, MICH.

New Offer on the New National Cream Separator

Write for this new offer—new money saving plan. New way to get a New National—the supremely finest and best cream separator ever designed—the only machine with the marvelous vortex-spoon. No excuse to buy a poor or cheap machine.

No Cost to You

Not a cent out of your pocket on our no cost offer. This is an astounding opportunity.

Write Today Send your name on a post card or a letter and get all particulars. Strictly limited offer. Write today.

National Dairy Machine Co.
Dept. 5395 Goshen, Ind. Vortexspoon

as butter or cheese maker. Dairy graduate. Four year's experience. Address, Rogers, 722 Sheridan Ave., Detroit, State Salary.

Free Try-On

of These Everwearing
RACINE
Aluminum Shoes

These shoes save doctor's bills by keeping your feet dry and warm. Outwear many pairs of leather. Racine Aluminum shoes wear better than any other metal shoe. Save You Shoe Money

Patent Rocker Bar Helps You Walk
Makes walking easy. Comfortable as carpet slippers, yet waterproof, slushproof, puncture-proof. Protect you from Colds, Rheumatism, Lumbago, Pneumonia. Write for Free Book: Aluminum the Sole of Health.

RACINE ALUMINUM SHOE CO., 58 12th St., Racine, Wis.

Trees

As Certified Growers for 25 years our guarantee means Honest Trees, at half agents' prices. Handsome catalog free.

Wm. J. Reilly Nurseries
24 Ossian St., Dansville, N.Y.

BREEDERS' DIRECTORY.

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

CATTLE.

ABERDEEN ANGUS

If you are in need of an extra good bull or a few choice young cows or heifers, we have them for sale. Our herd is headed by the Grand Champion Black Monarch 3rd. We invite you to come to our farm and see them. They are bred right and priced right. U. L. Clark, Hunters Creek, Mich. Sidney Smith, Mgr.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900.
TROJAN-ERICAS and BLACKBIRDS only.
Also breeders of Percheron, Hackney and Saddle Horses.
WOODCOTE STOCK FARM, Ionia, Mich.

Aberdeen Angus Four young bulls also young cows and heifers. Extra good. Priced reasonable. Inquire F. J. Wilber, Clio, Mich.

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.

THE VILLAGE FARM,
Grass Lake, Michigan,
GUERNSEY CATTLE.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM
GUERNSEYS

Combine quality and health, the foundation of a perfect herd.

In the sixteen months we have advertised in The Michigan Farmer, we have sold 17 bulls and 30 females of our own breeding which we consider very satisfactory when most breeders are complaining of slow sales. But good stock is always in demand when offered at fair prices. It has been impossible to answer all inquiries but we wish to thank all who have written.

At present we have Registered Bull
Calves only for sale.

CAMPBELL & ANGEVINE, Coldwater, Mich.

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

Guernseys reg. for sale, Watervliet, Mich. May Rose Seven A. R. cows in herd.
Address J. K. Blatchford, Auditorium Tower, Chicago, Ill.

REGISTERED Young Guernsey Bulls, great grand-sons of Gov. Chene. Serviceable age nicely marked, exceptional breeding. Avondale Stock Farm, Wayne, Mich.

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

Guernsey Bull Calves from A. R. dams and whose dams are running for A. R. One ready for service. [G. A. WIGENT, Watervliet, Mich.

Guernseys for sale from A. R. dams, 2 heifers bred to freshen in June. 1 2-yr.-old bull and 3 bull calves. Geo. N. Crawford, Holton, Mich.

For Sale Registered yearling Guernsey Bull also Bull Calves. Write JOHN EBELS, HOLLAND, MICH. R. No. 10.

REGISTERED Guernsey Bulls from A. R. Dams ready for service, tuberculin tested, also Registered Bull calves from A. R. Dams, at Farmers' prices. Byers & Barnes, Coldwater, Mich.

Choice Guernseys For Sale Cows—Heifers—Bulls.
J. M. WILLIAMS, NORTH ADAMS, MICHIGAN.

WANTED, best producing grade Guernsey
\$100 WILL BUY
State test, quantity, age, date due to freshen and other particulars. Beechwood Farm, Grand Haven, Mich.

Herefords—3 Bull Calves
ALLEN BROS. PAW PAW, MICH

Do You Want A Bull?
Ready For Service.

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

EDWIN S. LEWIS, Marshall, Mich.

The Two Greatest Bulls

KING OF THE PONTIACS
DE KOL 2d's BUTTER BOY 3rd

I have young bulls from cows having high official records and Granddaughters of above bulls. Stock extra good. Prices reasonable.

BIGELOW'S HOLSTEIN FARMS,
BREEDSVILLE, MICH.

HATCH HERD
YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke. Brother of K. P. Pontiac Lass 44.15; average record of 30 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.93. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

HOLSTEIN Bull Calf: Born Oct. 5. A splendid individual, well grown, and of choice breeding. Dam has A. R. O. record, butter 7 days 18.04 lbs. milk 419.8 as a 2-yr.-old. Sire Albina Bonté Butter Boy No. 33124. W. B. Reader, Howell, Mich.

\$190 Buys Reg. Holstein heifer 8 mos. old and Reg. Bull 3 mos. old. Not akin. Good breeding. FERD J. LANGE, Sebawaing, Michigan.

Choice Holstein Bulls. All from A. R. O. Dams. Semi-of-4-yr. old class to over 1000 lbs. in mature class. Breeding: Cross "King of the Pontiacs" and the "Dumick blood." Cherry Creek Stock Farm, Hilliards, Mich. M. E. Parmelee, Proprietor.

HAGELSHAW'S
BIG TYPE POLAND CHINA
BRED SOW SALE

Feb. 18, 1916, at Augusta, Mich.

60 head go into this offering. Consisting of 11 big Mellow tried Sows.
16 Mammoth yearling gilts. 27 Stretchy Spring Gilts. 6 Massive Spring-Boars.

Write for Catalog to Walnut Brook Farm, Augusta, Mich.

Duroc Jersey Boars and Sows

BROOKWATERS' WINNING COMBINATION

Best Blood Lines. Individual Merit. Prices that will make you money.

This is our record, one which we shall maintain. Choice fall and spring pigs and mature stock. Send for our new circular and state your wants. Write or better come. If you wish one of the best young Jersey bulls in Michigan we have him for sale.

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

Purebred Registered
HOLSTEIN
CATTLE

Advanced Registry cows sell for more. The Advanced Registry Office maintained by the Holstein-Friesian Association is of great advantage to owners of purebred Black-and-White cattle. The official records of its absolutely impartial and authentic tests of your cow establish a positive and relatively high value on the animal. Her official record is proof positive to the buyer of her true value as a producer. Carefully compiled records show that the average auction price of Holstein cattle in 1908 was \$150. In 1914 the average auction price was \$255. Investigate the big "Black-and-Whites."

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

ALFALFADALE herd of Holsteins. Contains aged cows producing 32.94 lbs. of butter in 7 days; 1-yr. olds producing 31.76; 3-yr. olds producing 28.37 and 2-yr. olds 25.69 all officially tested. Sons & brothers of these high testing cows for sale. Geo. H. Gillespie & Son, Mason, Mich.

DAIRY TYPE Plus PRODUCTION
Equals Crandall's

Holstein Friesian Cattle

Two very Good young Bulls for sale. Sired by Beauty Walker Pieterje Prince 2nd. No. 107658. Dam, Hengerveld Dekol's Best daughter. Butter 33.62, milk 582.70. Write for Pedigree if wanting bull.

Frank R. Crandall & Son, Howell, Mich.

\$50 gets another 2 mo. old Hazel-let grandson of Maplecrest De Kol Parthena and Pontiac Maid 30.2 lb. butter 7 days. Dam traces to Pontiac Korndyke twice Pieterje 2nd twice, De Kol 2nd five times. M. L. McLaulin, Redford, Mich.

Ypsilanti Farms Registered Holstein young bulls of choicest breeding at \$50 and up. Ypsilanti, Michigan.

Holstein Bulls Ready
For Service.

Grandsons of Friend Hengerveld DeKol Butter Boy and Pontiac Aggie Korndyke. From high record A. R. O. dams at farmers' prices.

LONG BEACH FARM,
Augusta, Michigan. (Kalamazoo Co.)

Choice Holstein Bull Calves

Ready for service, World's Champion Parentage
HILLCREST FARM - Kalamazoo, Mich.

Special Notice
Registered Holsteins for Sale.

Our present farm being more valuable for real estate than dairy farming, we are going to move our herd further out from the city. We have twelve bull calves which will be sold at prices from \$35 to \$150 according to breeding—A rare chance to buy a bull calf at a low price.

Espanore Farm, Lansing, Mich.

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

"TOPNOTCH" Holsteins

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

FOR SALE

Registered Holstein bulls ready for service; and registered Holstein bull calves, the best breeding in the world, grandsons of Grace Payne 2nd's Homestead. Pontiac Korndyke, King Payne Segis and Hengerveld De Kol. The dams of these bulls and calves, have large advanced registry records. For prices, write Callam Stock Farm, 204 Bearinger Bldg., Saginaw, Mich.

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

Registered HOLSTEIN BULL. Sire is son of former state champion cow, 32.94 lbs. of butter in 7 days. 4 months old, mostly white, beautiful individual. 2 nearest dams average 26 lbs. of butter and 647 lbs. of milk in 7 days. \$100 delivered, safe arrival guaranteed. Write for pedigree and photo.
HOBERT W. FAY, MASON, MICH.

8 Reg. Holstein heifers, 4 are 8 months old and 4 are 5 months, at \$100 each. Also, 4 young bull calves at \$30 each. Ernest A. Black, R. 3, Howard City, Mich.

HOLSTEIN Friesian son of G. Champion female Mich. State Fair A. R. O. 2-yr. 9 days 372.5 milk, 16.143 butter. Hengerveld Dekol breeding, John A. Rinke, R. 1, Warren, Mich.

For Sale—Registered Holsteins, 3 Bull calves sired by a 30 lb. bull, 1 from a 28.38 lb. dam. Also 2 heifers 8 and 15 months old. Wm. Griffin, R. No. 5, Howell, Mich.

\$200 Buys Holstein cows 5 to 7 yrs. old. Fresh soon. Calves contracted at \$100 each if heifers.
B. B. REAVEY, Akron, Michigan.

The Bull advertised in this paper last week is sold, but I have another good, robust young bull, ready for service, sired by a Grandson of Colantha Johanna Land, Write, GEO. D. CLARKE, Owner of Nederland Farms, Vassar, Mich.

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

THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Forty head Tuberculin tested Majesty's Wonder 3077 heads the herd. His daughters are producing from 400 to 500 lbs. butter in one year as two year old heifers, and are bred to Majesty's Oxford Fox 13424 a class Grandson of Oxford Majesty which combines type and production. Alvin Balden, Capac, Mich.

MAPLE Lane R. of M. Jersey Herd. Tuberculin tested by the U. S. Government. For sale bulls, cows, bull calves and heifer calves. The lowest record of any mature cow of this strain is 553 lbs. of 8 1/2 butter.
IRVIN FOX, Allegan, Michigan.

Jerseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emonon. No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

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

HILLSIDE Farm Jerseys, yearling bulls, solid color, half brothers to ex-world's-record senior 2-yr. old and from R. of M. dams, with records from 400 lbs. to 800 lbs. C. and O. DEAKE, Ypsilanti, Michigan.

23 Registered Tuberculin tested Jersey Cows for sale. Also, young females
HERMAN HARMS, Reese, Michigan.

BIDWELL SHORTHORNS

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

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

Shorthorn and Polled Durhams for sale. Have white. C. CARLSON, Le Roy, Michigan.

Auction Sale Mar. 1st, 1916. 25 head shorthorns, 7 males, at "Locust" on D. U. R. between Almont & Imley City. **WARNER BROS.** Almont, Mich.

Two Shorthorn Bulls old enough for service. Golden Wyandotte Cockerels. Collie puppies
S. G. BELCHER, R. No. 5, Hudson, Michigan.

Shorthorns For Sale—One red scotch bull 16 mos. Sire Uppermill Omega. One white scotch topped, Sire Bright Sultan. W. B. McQuillan, Howell, Mich.

FOR Sale—18 Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 2 to 13 mos. old John Schmidt, Reed City, R. No. 5, Michigan.

MILKING SHORTHORNS. Young bulls for sale after July 1st
DAVIDSON & HALL, Tecumseh, Michigan.

POLLED Durhams for sale, pure Short Horns, bred hornless. Rose of Sharon and Young Mary, 2 bulls 12 mo. 10 young cows and Heifers. L. C. Kelly, Plymouth, Mich.

HOGS.

Durocs & Victorias—Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

TAKEN FROM LIFE
Raise Chester White Hogs
Like This
(CALLED BY SOME O. I. C.'S)
Write for my plan
"How to Make Money from Hogs"

I have started thousands of breeders on the road to success. I have a very large and fine herd. Every one an early developer, ready for market at six months old. I want to place one hog in each community to advertise my herd.
C. S. BENJAMIN R. No. 10, Portland, Michigan

Royalton Bred Berkshires—Fine October pigs both sexes, all registered stock, no akin, registered with papers at fair prices. Write to D. F. Valentine, Supt., Temperance, Michigan.

Berkshires of best breeding. Special price on two Spring Boars.
D. W. SMITH, Wixom, Michigan.

SWIGARTDALE BERKSHIRES

Are the kind that win at the Fairs and also produce the litters as all of our show stock are regular breeders. They have the size with the bone to carry them and their breeding is unsurpassed. All the leading families are represented. We have a few choice Spring Boars now crowding the 300 lb. mark, for sale, prices from \$20 up. We are now booking orders for Fall pigs for January delivery. Can furnish choice Trios not akin, for \$45 to \$50. We Guarantee Satisfaction.

Swigartdale Farm, Petersburg, Mich.

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

Berkshires Have a choice lot of gilts. I am breeding for spring farrowing. Write me your wants. A. A. Pattullo, DeKerville, Mich.

Berkshires—Three nice spring gilts bred for May farrow, one Boar ready for service, Fall Pigs either sex. Priced for quick sale.
RIVERVIEW FARM, R. 2, Vassar, Michigan.

Berkshires. Of various ages, either sex, open or bred, prolific strains, Registered, at moderate price. Elmhurst Stock Farm, Almont, Michigan.

CHESTER WHITES—The long type, prolific kind, either sex. Write your wants.
Meadow View Stock Farm, R. 5, Holland, Michigan.

Registered Chester White males and females, Reg. Holstein male calves, herd bull and cows.
Parham's Pedigree Stock Farm, Bronson, Mich.

Chesters and O. I. C's. Sows bred for March farrow, and April farrow.
F. W. Alexander, Vassar, Michigan.

Capitol Herd D. J. Swine. Young sows bred, young boars, pigs both sex. Express prepaid. J. H. BANGHART, Lansing, Mich.

DUROC JERSEYS
Choice Spring boars and fine lot of gilts we are breeding for Spring farrowing from Michigan Masterpiece and other noted boars. Prices reasonable. The Jennings Farm, R. 1, Bailey, Mich.

DUROC JERSEYS—A few choice spring BOARS ready to ship. Carey U. Edmonds, Hastings, Mich.

DUROC JERSEY BOARS Fall pigs, pairs and trios not akin. W. C. TAYLOR, Milan, Michigan.

Duroc Jerseys—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

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

Duroc Jersey Boars type, also a few gilts. Inspection invited. E. D. HEYDENBERK, Wayland, Mich.

DUROCS of the best of breeding. April farrow. Either sex. The gilts will be bred for Apr. farrow. Price \$20.00 to \$25.00 while they last.
H. G. Kessler, R. No. 5, Cassopolis, Mich.

FOR SALE. Duroc yearling Sows and May Gilts and August Boars.
E. J. Aldrich, R. 1, Tekonsh, Calhoun Co., Mich.

DUROC Jerseys, Yearling Sows & gilts bred for Apr. farrow to a son of Orion Cherry King the greatest Boar of his breed. Also fall pigs either sex. F. J. Drott, R. 1, Monroe, Mich.

DUROC Jerseys—A couple of choice gilts bred for D. Apr. farrow. Also an extra good spring boar. Send card for price, etc. E. R. Cornell, Howell, Mich.

Duroc Jerseys for sale—a few choice fall pigs of either sex. Fancy Buff Rock cockerels. JOHN MCNICOLL, Station A, Route 4, Bay City, Mich.

DUROC Jersey, Mar. gilts bred for April, Sept. pigs either sex and Holstein bull calves & 4 Registered Holstein cows. E. H. MORRIS, Monroe, Mich.

Heavy Boned Durocs—A fine bunch of Bred sows and fall pigs for sale.
M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

DUROC JERSEYS Boars and sows all sold. Some good fall pigs either sex for sale. Wm. W. Kennedy, R. 3, Grass Lake, Mich.

For Sale—A few of those big bone Duroc Gilts, bigger and better than ever. Safe in pig to an Orion boar. Prices from \$25 to \$40. Also tried sows and a few boars cheap. F. A. LAMB & SON, CASSOPOLIS, MICHIGAN.

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

Brightside, Grand Lodge, Mich.

O. I. C. Bred Gilts
Choice 100 lb. Pigs \$16.
J. CARL JEWETT, Mason, Mich.

O. I. C's Fine gilt farrow in February, yearling, bred, sows, price right.
A. R. GRAHAM, Flint, Michigan.

O. I. C. SWINE Yes, I will pay to your express office on August and September pigs during the month of January. I also have choice gilts bred for April farrow. A. J. Gorden, R. 2, Dorr, Mich.

O. I. C. SPRING BOARS of good type and Red Polled bull calves.
John Berner and Son, Grand Ledge, Mich.

Breeders' Directory—Continued on page 191.

Veterinary.

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

Thrush.—I have a mare that is troubled with thrush. J. F. N., Fennville, Mich.—Keep foot dry and clean and apply calomel once a day.

Injured Hock.—I have a three-year-old colt that was kicked, injuring hock joint, leaving a bunch on back part of hock, but it causes no lameness. G. M., Belleville, Mich.—Apply tincture of iodine three times a week.

Scours.—When my calves are about two weeks old they commence scouring and soon die. I might add that this is the third year that I have lost calves from this ailment. G. L., Whittemore, Mich.—You will find it difficult to clean and disinfect your cow and calf stable perfectly, so as to feel sure that you have destroyed the infection that kills your calves. Your cows should calve in a thoroughly clean and disinfected stable; the navel string of calf should be tied at birth and end of cord painted with tincture iodine; besides, the navel and surrounding parts should be wet with one part carbolic acid and 20 parts water and the hind parts of cows washed with this same solution.

Scours in Cattle.—What causes cattle to scour that are pastured on low muck ground? Is it because of the heavy growth of grass, or caused by the wet condition of the ground? H. A. S., Capac, Mich.—Both are causes of scours.

Cow Holds up Milk.—I have a cow that does not let down her milk very freely and there is some obstruction in the end of one teat, and perhaps in quarter. R. V. O., Berlin, Mich.—Kindness and careful milking by same person has a good effect on cows that are inclined to hold up milk. Gentle hand-rubbing of udder and carefully passing a sound to dilate teat canal, is all that can be done.

Flat Warts.—I have a cow that is troubled with flat warts on udder. O. H. B., Englishville, Mich.—Apply a saturated solution of salicylic acid in alcohol every day or two.

Loss of Appetite.—I have two calves about a year old that are very poor which have no appetite. W. G., Ortonville, Mich.—Give 30 drops of fluid extract of nux vomica, a teaspoonful of fluid extract gentian and a teaspoonful of fluid extract cinchona at a dose in feed or in a pint of water as a drench three times a day.

Cow Fails to Come in Heat.—We have a cow that has been fresh some time ago, but fails to come in heat. C. J. S., Rockford, Mich.—Give her 1 dr. of ground nux vomica and 2 drs. of ground capsicum at a dose in feed three times a day.

Piles.—I have a sow that is with pig which is troubled with piles. C. N., Wayne, Mich.—Dissolve 1 oz. acetate of lead, 1 oz. tannic acid in a quart of water and apply to protruding parts twice a day. It is possible that some surgical work should be done on your sow; however, this is work for a Vet. It is well to keep in mind that constipation and weakness are the principal causes of piles.

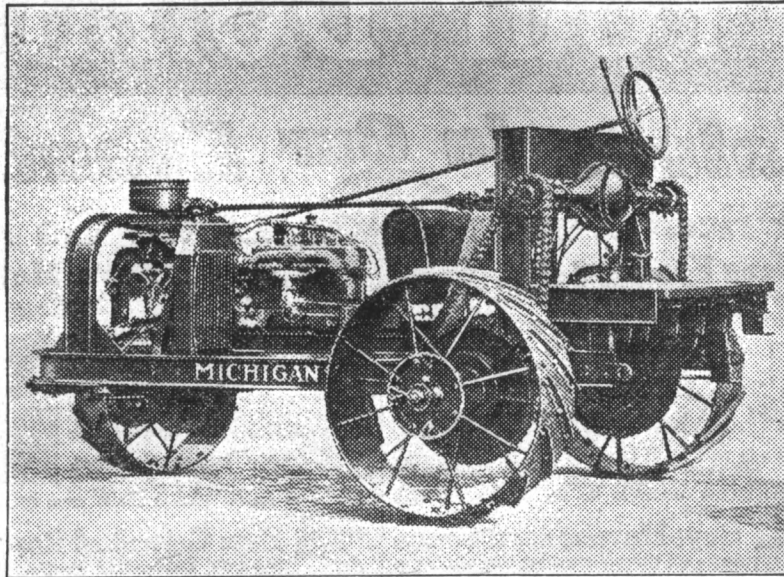
Food Infection.—Have lost seven pigs lately when they were about nine weeks old. They refuse to eat, were rather thirsty, grow weaker and weaker until they die. Their food consisted of all the separator milk they cared to drink and were kept in pen all the time. F. C. K., North Street, Mich.—I am more inclined to believe that your pigs die the result of food infection, than from disease; however, I would advise you to clean and disinfect your pig pen, and add some ground oats and wheat bran to their milk.

Worms.—My 12-year-old mare is troubled with worms. A. A. S., Novi, Mich.—Mix together one part powdered sulphate iron, one part of ground wormseed and two parts ground gentian and give a dessertspoonful at a dose in feed twice a day.

Indigestion.—I have a cow that came fresh last September, since feeding her dry feed her milk flow has lessened, her appetite is poor and it troubles her to raise her cud. P. N., Sears, Mich.—Mix together one part cooking soda, one part vinger, two parts of ground gentian and two parts powdered charcoal—give her two tablespoonfuls at a dose in feed three times a day. Also feed her more roughage.

Weakness—Roarer.—My eight-year-old horse does not appear to be much sick, but whenever he is exerted, he weakens and breathes hard and very often chokes down. He does not appear to be sick and his appetite is good. E. F. G., Thompsonville, Mich.—I am inclined to believe that your horse has throat trouble which will require a surgical operation to make him well; however, I might add that this is work for a competent Vet.

The Three Wheel Drive That Beats Them All



In the Michigan Farmer of January 8 we announced that we should have our Three Wheel Drive tractors on the market during the ensuing season.

The letters received in response to our announcement, show that farmers fully understand that driving all three wheels means Greater Efficiency, and getting all our weight on our drivers will enable us to pull a heavier

load with a lighter machine; which means economy of fuel and less wear and tear on the machine.

Nearly all these letters say, "I intend to buy a tractor the coming season," and coming by the dozen in every mail, they indicate the hosts of farmers who are only waiting to buy tractors until they can decide "which one."

THE A. T. HARROW TRACTOR CO.

14 Jefferson Ave. East, Detroit, Mich.

MAIL THE COUPON.

Please mail me catalog and particulars of special offer to first buyers.

Name
R. D. P. O.
..... County State



Each of Dr. LeGear's 21 different Remedies is his own prescription, tested and proved in 23 years personal Veterinary practice. Ask your dealer for them.

Less feed; more profit

Your animals are just machines—for producing milk, meat, work, wool, etc. How much you get from them depends, not on how much "fuel" (feed) you give them but on how much they get from that feed.

Dr. LeGear's Stock Powders

expel worms and put digestive organs in perfect condition to get every ounce of nourishment out of the feed. Used regularly, they'll cause cows to yield more milk, hogs to fatten faster, work animals to become sturdier, sheep to make more wool.

Because they actually do get these results, Dr. LeGear's Stock Powders are now used regularly by thousands of farmers everywhere.

50c stock book free!

If your dealer cannot sell you any of Dr. LeGear's Remedies, send us his name and we'll send you a fine 50c stock book free—116 pages and 64 illustrations. Write today. Dr. L. D. LeGear Medicine Co. 712 Howard St., St. Louis, Mo.

For Stock and Poultry
Dr. LeGear's Remedies
One for every curable ailment



Dairymen!—The Truth

You may be prejudiced against the Jersey because you don't know her. Look her up. She's the Money Cow.

Get This Book—a history of the breed and full of very interesting tests and facts. It proves conclusively that for pure dairy type, economy of production, richness of milk, long life and adaptability to feeds and climates—all these combined—she stands way above them all. This book "About Jersey Cattle" is free. Get your copy now. You'll find it mighty good reading.

The American Jersey Cattle Club
346 West 23rd Street, New York City

HOGS

O. I. C. Serviceable boars, spring gilts and fall pigs not akin. Write for low prices and photo. A. V. Hatt, Grass Lake, Mich.

O. I. C.'S 3 July boars. Bred gilts with size and quality. \$22 to \$30 each. C. J. THOMPSON, Rockford, Michigan.

Way Brothers Stock Farm. The home of the big bone O.I.C. Hogs. Stock for sale. Registered free. J. E. Way, Three Rivers, Mich.

O. I. C. serviceable boars, tried sows, gilts bred for March and April farrow, summer and fall pigs. I pay express. G. F. ANDREWS, Dansville, Mich.

O. I. C. Gilts bred for March, April and May farrow. Recorded in buyers' name. H. W. MANN, Dansville, Michigan.

O. I. C.'s Strictly Big Type. Four boars fit for service. Four July boars, 25 Spring gilts, four fall yearlings, four tried sows, all bred for Spring farrow. Also fall pigs not akin. Extra good ones. As I am crowded for room, this good stock will be sold at Farmers' prices. They are good enough that I will send them C.O.D. & record them free. Newman's Stock Farm, Mariette, Mich. R. 1.

O. I. C. and CHESTER WHITE SWINE
Big type with quality. We have the undefeated breeders young herd at seven State fairs this year. They were sired by Abo 2nd, one of our many good herd boars. Special prices on all boars for the next 30 days. Get a Gilt bred to the Great Schoolmaster, the highest priced boar of the breed, Champion over champions. Write for our big catalogues with history of the best herd in the whole country. Come and see them.
Rolling View Stock Farms, Cass City, Mich.

O. I. C. Choice Spring boars and bred Gilts. We pay Express and Register free. Glenwood Stock Farm, Zeeland, Michigan.

Registered O. I. C's. Attractive prices on fall pigs and last spring gilts. All from large litters. Elmer E. Smith, Redford, Mich.

O. I. C's 20 bred sows for sale. 8 last April gilts averaged 270 lbs. Jan. 10, 1916. They are a very growthy lot. Have some May gilts and last fall yearlings also a few service boars and plenty of last fall pigs. Otto B. Schulze, Nashville, Mich.

O. I. C. Choice gilts bred for April and May farrow. Also last fall pigs of excellent quality. A. J. BARKER, ADA, MICH. R. No. 3

O. I. C. Sows bred for March and April farrow. Priced to sell, from best of stock. Write for photo and pedigree. E. B. MILETT, Fowlerville, Michigan.

POLAND CHINAS

From our thousand pound Grand Champion Boar and Big Stretchy Sows of best breeding. Spring Boars at a bargain. Bred Gilts and Brood Sows. Hillcrest Farm, Kalamazoo, Mich.

Big Type Poland China Brood Sow Sale Sat. Jan. 29th. 50 Sows bred for spring litters. My offering excels any offering ever offered at public sale in the State. Write for catalog. WILLIAM WAFFLE, Coldwater, Michigan.

BIG TYPE P. C. Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000lb. boar prospects. Absolutely no larger breeding. Everything guaranteed right. FRANK RUGER, Ravenna, Mich.

BIG type Poland Chinas—Western bred pairs or trios not akin. We have many Fesenmeyer & George Mar. shall breeding. Call or write, W. Brewbaker & Sons, Elsie, Mich.

POLAND CHINA gilts bred for March and April farrow. Fall pigs, satisfaction guaranteed. G. W. HOLTON, Kalamazoo, Michigan.

POLAND CHINAS of the big type, Spring boars, Gilts bred for April farrow. A. A. WOOD & SON, Salline, Michigan.

Large Strain P. C. a few choice boars of spring and early summer farrow. A choice lot of spring Gilts bred for spring farrow sired by Big Defender the boar that every body goes wild over. H. O. SWARTZ, Schoolcraft, Michigan.

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

Spring Pigs at Half Price.—Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

Big Type Boars all sold. Have several good Gilts bred to Smooth Jumbo, Jr. Top Boar of J. D. Collin Sale. Priced right to go quick. A. D. Gregory, Ionia, Mich.

BIG Type Poland China Gilts, bred to a good son of Wonderful Wonder. He sold in Iowa for \$625. This will lease you. Robert Martin, R. 7, Hastings, Mich.

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

Heavy Bred Poland Chinas. Both sex and all ages at bargain prices. Also, B. P. Rock Cockerels. ROBERT NEVE, Pierson, Michigan.

POLAND Chinas—Big and medium type. Gilts bred to big type boars for April farrow. Fall pigs, either sex. L. W. Barnes & Son, Byron, Michigan.

REGISTERED Poland China Spring Boars and Sows at \$15 each. Making this special price to make room for others. A. G. Meade, Stanton, Mich., Colby's Ranch.

For Sale—Big Type Poland China Boars ready for service. Also sows at bargain prices. JOHN GOKEE, R. No. 4, Owosso, Michigan.

Big Type P. C. Bred sow sale, Feb. 18th. Write for Catalog. W. J. HAGELSHAW, Augusta, Michigan.

Large Yorkshires—Gilts bred for spring farrow. Serviceable. Pigs all ages. Prices Reasonable. W. C. COOK, Route No. 1, ADA, MICHIGAN.

"Jones Pays the Freight" Yorkshires Pay the Mortgage. Bred Gilts for March and April farrowing. Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.

Mulefoot Hogs—Fall Pigs, Brood Sows and Gilts. Young service Boars. Pairs not akin. Write for prices. C. F. Bacon, R. 3 Britton, Mich.

Hampshire Hogs—Nothing for sale but Apr. Boars. Taking orders for spring pigs. Write your wants. John W. Snyder, St. Johns, R. No. 4, Mich.

Hampshire Swine. Pigs of both sex. Bred Sows. Serviceable. Write for prices. Price to sell. FLOYD MYERS, R. No. 9, Decatur, Ind.

SHEEP.

Oxford Down Sheep. no stock for sale at present. M. F. GANSSLEY, Lennon, Michigan.

AUCTION SALE

50 Extra recorded Shropshire ewes. 25 extra Duroc sows, February 16th, at KOPE KONFARM, Kinderhook, Mich. Write for catalogue and plan to come.

Double Your Dollars Now!

Greatest Values In Our Eventful Career

Wire and Fencing Priced Low!

Barbed Wire Less Than 3c

New Galvanized heavy weight barbed wire put up on reels of about 100 lbs. 2 point barbs. Strong and well made for long service. Price per 100 lbs., \$3.10. Order by lot No. A.J. 35.

Galvanized Barbed Wire, light weight, first grade

and best made, put up in exactly 50 rods to the reel. 2 point barbs. Price per reel, \$1.75. Order by lot No. A.J. 36. Best quality, painted barbed wire, per 100 lbs., \$2.80. Order by lot No. A.J. 32.

Galvanized Fence Wire \$1.65

Smooth galvanized wire. Suitable for fences, stay wires, grape vines and all purposes for which wire is generally used. Put up in rolls of irregular lengths ranging from 50 to 250 feet. This low price is for 100 pounds of our No. 9 gauge, the standard size mostly in demand. We have every desired size. Order by lot No. A.J. 37.

Galvanized Staples, 2 1/2c per lb.

Strong Fencing 15c

Here again our extensive operations and big deals enable us to quote heretofore unheard of low prices. Strong, heavy Fencing fortunately secured recently at our own price.

A splendid fencing for hogs and all general farm purposes. 26-inch, 7 line wires high. Square mesh, stays 12 inches apart. Put up in rolls of 20, 30 and 40 rods. Order by lot No. A.J. 33. Same as above, except stay spaced 6 inches, per rod, 21c. Order by lot No. A.J. 62. Staples for erection, 100 lbs., \$2.50. Order by lot No. A.J. 34. Our wire catalog tells more.

43 Buys Harris Lawn Fence

per Foot Snap up this unusual bargain while the supply lasts. Beautify your home now at a big saving. Made of best galvanized wire, coated with metallic paint. Uprights No. 9. Order by lot No. 2 A.J. 428, 24 inches high, per lineal foot, 4 3/4c. Other heights proportionately low.

40 Acres of Bargains

Down Go All Roofing Prices!

97c Buys Metal Roofing

Per Square Never before have been so splendidly equipped to supply best metal roofing, siding and ceilings at lowest prices. We have made better arrangements for this season than ever before to supply positively the best roofing bargains.

\$2.25 Buys Galvanized Roofing

Per Square Splendid Galvanized Roofing from \$2.25 per square up. Tell us your roofing needs! Get our advice. It is free, but invaluable to you! Write us the kind of building, exact dimensions of roof, when you expect to buy, etc. Our Roofing Experts will tell you exactly how much to buy, best selection, exact cost, full directions for laying, etc.

40c Buys Ready Roofing

Per Square We recognize no competition on roofing! Our 40-acre plant contains gigantic stocks of dependable roofing of every kind at prices absolutely slaughtered. Our famous AJAX Brand Rubber Surface New Ready Roofing, put up two and three pieces to the roll, complete with nails and cement; 1/4 ply 40c; 1 ply 75c; 2 ply 96c; 3 ply 96c.

96c Buys Red or Gray Slate Roofing

Per Square Red or Gray Slate Slate-2 and 3 pieces to roll, 96c; better quality, \$1.16. Red or Gray Slate Coated Shingles, \$2.50 per square. We have other grades at proportionately low prices. Samples of every kind of roofing-free! Send for our Big Roofing Catalog showing everything in Roofing and accessories at prices lowest ever made by anyone! All prices are F. O. B. Chicago; not freight-prepaid. Write for

The Books Below Tell More

\$229 Buys a Car of New Lumber!

We are the undisputed Leaders in Lumber. In quality, quantity and low, "direct-to-you" prices, no one compares with us.

A whole car brand new lumber for only \$229.00! Every stick guaranteed up to grade. Immediate shipments. If you can't use a whole car, have your friends join you and save on freight. Send right now for our Lowest Wholesale DIRECT-TO-YOU Lumber Bargain Price List and get our freight prepaid price on every item of Lumber and Building Material before you buy!

To quickly introduce our mammoth new "DIRECT-TO-YOU" Lumber Manufacturing Plant at Jackson, Mississippi, we make this exceptional offer.

We do not require "cash with order," but give you privilege of inspection before you pay. Who else will do this? We are not afraid of our material. So if you expect to build a house, barn or any structure, send at once for our DIRECT-TO-YOU Lumber Price List, and take immediate advantage of these wonderfully low bargain prices. We have good lumber as low as 12.00 per thousand feet. Clear Yellow Pine Inside Mouldings, Casing, base Quarter Round, etc., can be shipped with above.

Send Us Your Lumber Bills for Our Low Freight Prepaid Prices

Money Savings Multiplied By Our "Different Methods"

Never before, in our eventful career, have we been able to offer you such tremendous money saving opportunities. The countless thousands, of shrewd posted buyers, who are familiar with our original and different methods of purchasing, know the reason for this—but do YOU know why?

The reports of the Mercantile Agencies tell a story of business disasters, for 1915—a story repeated year after year—and here's where we come in. We profit by the business disasters of others. Manufacturers of good goods all know where they can quickly dispose of their stocks, no matter how large, for ready cash. No auction or forced sale of any importance takes place without our knowledge and the presence of our buyers. During the closing months of 1915 our \$10,000,000 buying power gave us an overwhelming advantage in effecting many of the greatest purchases we have had the good fortune to make since we launched this business 23 years ago.

Buy like we do—nothing but bargains. Share the benefits of our great Price Wrecking system. You can safely select anything from this page or the free bargain books below, because everything we sell is backed by our \$10,000,000 satisfaction or money back guarantee. Mail the coupon and start saving now—today.

HARRIS BROTHERS CO. OWNERS
Chicago House Wrecking Co.

\$799 Buys the Material Now!

No matter where you are, or what you are going to build, we guarantee a tremendous saving on material.

Build your home "THE HARRIS WAY." Thousands of Home Lovers have proved our time-tried methods; the one sure, short cut to satisfaction! "THE HARRIS WAY" has a definite meaning all its own. It is original with us—better—"different" from all others. It means 23 years' experience—Special Harris Architectural Service—Free \$10,000 Plan Book—Free Blue Prints—better material sensibly cut-to-fit at a tremendous saving—elimination of all waste.

FREE PLAN BOOK Contains 100 Modern Harris homes, with floor plans, descriptions, material, specifications, prices, valuable architectural information, etc., etc. Shows how to save big money building City Residences, Farm Homes, Bungalows, Duplex Houses, Cottages, Garages, Corn Cribbs, etc. This Plan Book is invaluable to any one who expects to build a barn. Shows many designs of Barn Buildings, and how to erect them "THE HARRIS WAY" at a saving.

Build Your Home "The Harris Way" With Material Sensibly Cut-to-Fit



Harris Home E-6
Built Over 1,000 Times

Rumely Electric Light Outfits

A genuine Rumely Special Electric Light Plant complete in every detail for \$265. Simple, safe, economical; anybody can run it. Famous Rumely-Fulk Engine with all equipment and built-in magneto; shunt wound generator; switchboard containing rheostat, volt meter, standard Willard batteries. Get our "Rumely Sale" prices on 160-300-500 light outfits. Order by No. 46, A.J. 87.

Rumely Separator

Think of it. Only \$29.50 for a "RUMELY" 500 lb. The patented distributing blades make this the best disc Separator made. Capacity 500 lbs. Skims a gallon per minute. Good for 20 years—quiet smooth-running; no delicate mechanism, simple strong, interchangeable parts, always easily obtained. Skims cleanly—thick or thin cream, as desired; no loss of butter fat. Guaranteed perfect—brand new—satisfactory; order perfect—\$29.50. Get our offers on larger sizes at lowest Rumely Special Bargain Sale Prices.

Rumely Feed Mills

\$11.00 You certainly should avail yourself of this splendid opportunity. Bear in mind these are real Rumely products and this great sale gives them to you at tremendous savings. This 8-in Rumely Mill—weight 325 lbs.—is the greatest value ever offered at \$11.00. Simply can't be beat for sturdiness, ease of operation and economy. Few parts. Special built-in feature of grinding corn and small grains, coarse, medium or fine. Six inch mill for shelled corn at \$5.50; 10 and 12 inch sizes, proportionately low. Send for bargain offers. Order by lot No. A.J. 1234, 8-inch, \$11.00. 8-10 and 12 in. are grinders and cob crushers.

Rumely Olds Gasoline Engines

\$45 Positive-ly the 3 greatest H.P. engine values ever offered. Here's your chance to own a famous RUMELY-OLDS Gasoline Engine for a mere fraction of its real worth. All Sizes—1 1/2 to 65 H.P., stationary, portable, direct or belt driven. Connected with pumps, hoisting and sawing outfits, etc. Genuine Rumely-Olds Engines, remember! Brand new, guaranteed perfect, for quick shipment direct to you. Get our amazingly low prices, full descriptions, etc., NOW!

Mixed Wire Nails

100 LBS. HANDY ASSORTMENT OF WIRE NAILS. Never before such a chance to save big money on nails. Buy liberally.

Standard Wire Nails, put up in 100 lb. kegs, all kinds and sizes mixed. Price, per keg, \$1.90. Order by lot No. A.J. 43. 100 regular new wire nails, 100 lb. keg, \$2.40. Order lot No. A.J. 46.

Wallboard Snap

\$1.39 Per 100 Sq. Ft. First quality 5-ply wall board of the splendid "Cellite" manufacture. Strong and ready for decorating. Can be papered, tinted, frescoed, paneled or painted. Made of 3 fibre board sheets and 2 asphalt walls built up—5 ply, firm, smooth and rigid. Samples free. Lot No. 10 A.J. 830. Price 100 sq. ft., \$1.39.

Harris Mixed Paint

Per 89c gal. Harris high grade ready mixed house paint represents a splendid formula that always gives complete satisfaction. Order by lot No. A.J. 41. For best ready mixed house paint at 89c per gallon. Harris Barn Paint at 59c per gallon. Lot No. A.J. 42. Write for Free Paint Book.

Our Great Purchase of RUMELY Merchandise

Our recent gigantic purchase of Rumely stock of Gasoline Engines, Cream Separators, Electric Lighting Plants, Ensilage Cutters, Feed Mills, Corn Huskers, Corn Shellers and Hay Balers enables us to offer these high grade, brand new articles direct to you at less than dealers used to pay in carload lots.

Never in our 23 years of Price Wrecking have we offered such wonderful bargains. We believe in truthful advertising. An army of satisfied customers know it! So when we say to our customers everywhere "Here and now is the greatest opportunity we have ever placed before you in merchandise of this kind," every one awake to opportunity is bound to take notice of our words.

Limited space here renders impossible any effort we may make to place before you all of this material or even a small part of it. Above we offer four random selections to give you some idea of the bargains represented. Remember these are real Rumely products at these low prices that should convince the most skeptical of the great importance of this sale. Ask today for complete list of the great Rumely Purchase.

Steel Fence Posts

Bargain Each 17c A big fortunate purchase brings these tubular steel fence posts to you at a tremendous saving. Complete with wire attaching clamps. Strong durable construction—well made. Price a-b-o-v-e for length, all other sizes at low prices. Order by lot No. A.J. 497. Old wire and fence book below tells more.

Vacuum Cleaner

\$3.59 Wonder-ful value! Thousands sold at \$10.00. Vacuum cleaners, carpets, rugs, etc., perfectly. Sucks out all dust, takes up thread, lint, etc. Sanitary steel body beautiful mahogany finish; rubber tire, ball bearings, smooth running wheels. Price complete with handle only \$3.59. Order by lot No. A.J. 47.

Buy This Door

Now Only 98c Lot No. A.J. 27. This splendid door bargain is but one of our building material savings. Consider this—a good and substantial, four panel, painted door, 36 in. wide, 80 in. high, for our catalog of lumber and millwork bargains. You will get all the building information you require. Low prices.

Closet Outfit

Now \$9.98 Only Elegant low tank closet outfit of "K-A" anteed grade material; nickel plated trimmings. Golden oak seat. Well constructed throughout. Perfect acting flush. All complete at this low price. LOT NO. 5-AJ-902. Other Like Savings in FREE Plumbing Book.

Four Tools in One

\$2.59 Combination tool consisting of vise, drill, anvil and handle. Works easily. Quickly adjusted. Steel faced jaws, open 6 in. Width of jaws, 3 1/4 in. Case hardened anvil. Drills holes up to 1/2 in. Lot No. A.J. 7221. Drills not supplied.

Fine Incubator

\$4.75 "Little Giant" 60-egg, all metal incubator of strong, solid construction. Every requirement of a good, successful incubator will be found. Shaped round—perfect for stagnant air pockets. Heavy plate glass top. Double wafer thermostat—hot water system. Order lot No. 8 A.J. 299. "Little Giant" 60 Chick Brooder. No. 8 A.J. 297. \$2.45.

Shingle Bargains

Per 1000 \$2.77 Lot No. A.J. 923. 10 in. Clear 6-2, 16 in. Washington red cedar shingles, per 1000, \$2.77. Lot No. A.J. 924. Extra Star "A", 6-2 16 in. Washington red cedar shingles, per 1000, \$2.99. Lot No. A.J. 925. Extra clear 6-2, 16 in. Washington red cedar shingles. Absolutely clear. Per 1000, \$3.37.

Heating Plant Snap

As low as \$67.00 You can easily install your own heating plant with the assistance of our free expert engineering service. We show you how to eliminate much useless and unnecessary expense. Warm air as low as \$67.00, steam \$134 and hot water \$154. Send for our Free Heating Book today.

Rugs at Half

Good De-65c signs Finest Rugs from auctions, all grades, sizes, and patterns and colors. Biggest rug, linoleum, and carpet bargains ever offered; see them in actual colors in our book 9x12 ft. rugs \$2.38. Axminster Rugs 65c. Our free home furnishing book tells more.

Water or Storage Tanks

Made of 20 gauge galvanized steel; won't rust; strongly riveted seams. Lot No. A.J. 1801. Cap. 3 1/2 Bbls. \$4.55. Lot No. A.J. 1804. Cap. 9 Bbls. \$6.95. Larger sizes at proportionate prices.

Bath Tubs Complete

\$13.00 Best white enameled, cast iron one piece, heavy roll rim bath tub; 6 feet long; latest style nickel plated trimmings, including Fuller double bath cocks for hot and cold water, nickel plated connected waste and overflow and nickel-plated supply pipes. Order lot No. A.J. 101.

Iron Pipe & Fittings, 3c Ft. Strong Hog Troughs 85c

Good iron pipe in random lengths complete with couplings. Suitable for gas, oil, water and conveyance of all liquids. Size 3-8 to 12 in. Our price 1 in., per foot, 3c. 1 1/4 in., 3 1/2c. Complete stock of valves and fittings. Send us specifications and name your needs.

Kitchen Sinks

Guaranteed "A" grade cast iron. No flaws or defects. Complete with nickel-plated strainer and iron sink collar and bolts. Standard size connection. Order lot No. A.J. 39. Painted Sinks, 18x24 in., 87c. Order lot No. A.J. 40. Enameled Sinks, \$2.55.

Dining Table Snap

\$5.45 Just as illustrated, well made and finished with golden. 42-inch top. Order by lot No. A.J. 49. Price only \$5.45. Less than wholesale.

50,000 MONEY SAVERS

CUT OUT THIS COUPON

Chicago House Wrecking Co., Dept. A.J. 42, Chicago Mark an X in the square below to show which books you want. They are FREE and sent postpaid.

- | | |
|---|--|
| ☐ Plan Book of Harris Homes, Etc. | ☐ Plumbing and Heating Book |
| ☐ Paints and Painters Supplies | ☐ Gasoline Engines and Equipment |
| ☐ Building Material and Supplies | ☐ Furniture and House Furnishings |
| ☐ Fencing and Wire Book | ☐ Roofing, Siding and Ceilings |
| ☐ Great Rumely Purchase Bargain Price List | ☐ Bargain Lumber Price List |

Name _____
Address _____

Ask for these FREE books, now—today—



Chicago House Wrecking Co. 35th and Iron Sts. CHICAGO, ILL.