

MICHIGAN FARMER

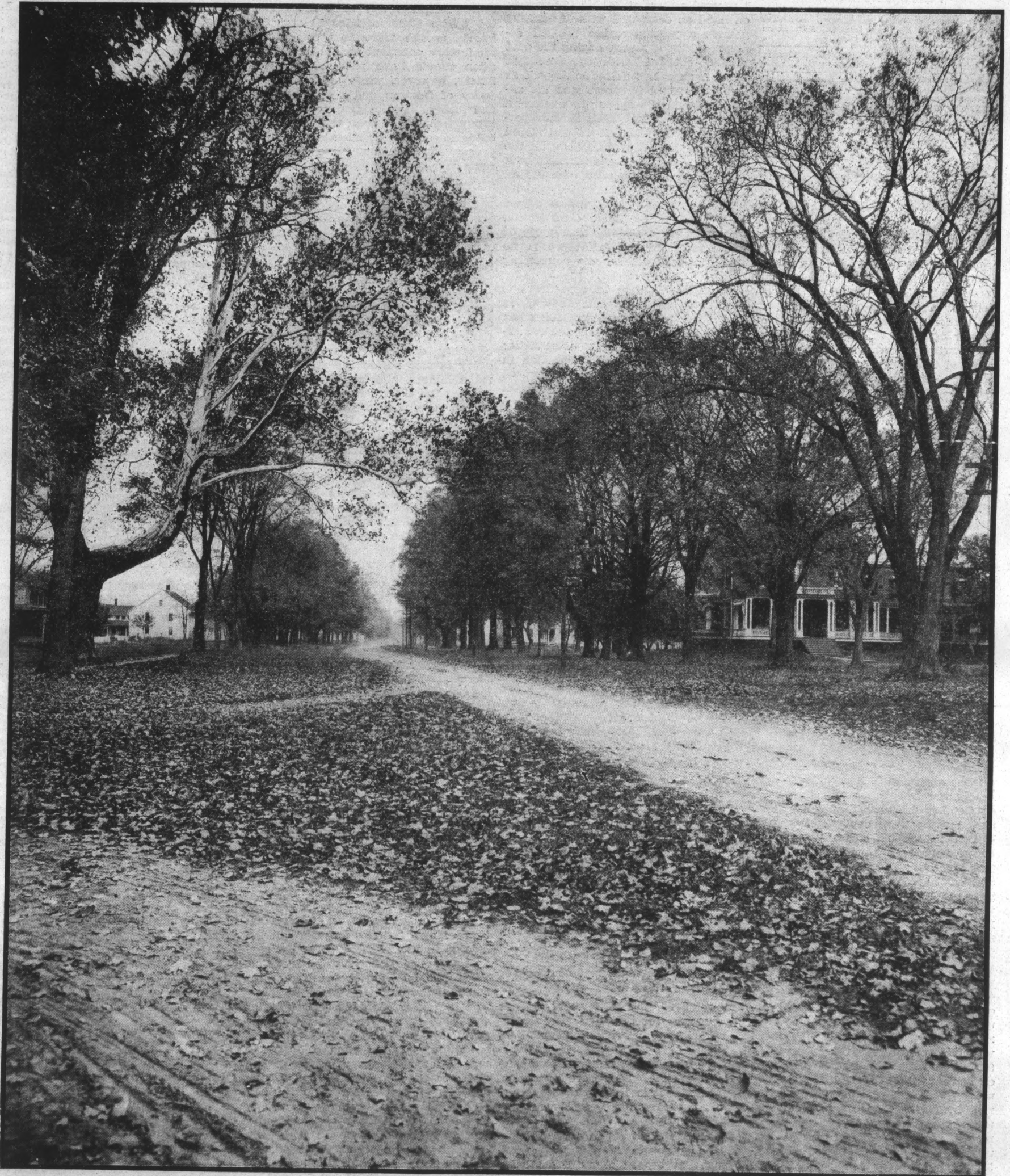
AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY. ESTABLISHED 1843.

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

VOL. CXLV. No. 17
Whole Number 3859

DETROIT, MICH., SATURDAY, OCTOBER 23, 1915.

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



The Michigan Farmer

Established 1843.

Copyright 1915.

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—214-218 Twelfth St.M. J. LAWRENCE.....President
M. L. LAWRENCE.....Vice-President
E. H. HOUGHTON.....Sec.-Treas.I. R. WATERBURY.....Associate
BURT WERMUTH.....Editors
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
inserted for less than \$1.20 each insertion. No objection
able 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, OCTOBER 23, 1915

CURRENT COMMENT.

Pork Prices and Prospects.

In an address before the eighteenth annual convention of the American Meat Packers' Association held in St. Louis last week President Fred Krey of that organization prophesied a future bearish market for hogs. He based his argument on the report of the Department of Agriculture made public on September 1 showing an increase of 7.2 per cent in the stock of hogs of the country as compared with a year ago, and the prospect of a dull export trade due to the position of England with reference to the supplying of this country's neutral trade. Recognizing the fact that diplomatic correspondence is in progress looking toward the settlement of this question, he expressed the opinion that such settlement would be slow of consummation and that in the meantime the cellars would be filled with hog products and hog values would be materially affected. Specific mention was made by Mr. Krey of the action taken by the Scandinavian-American line on October 6 that they would not accept shipments except as permitted, which he construed to mean permitted by the authorities at London. In this connection a review of available statistics relating to the export of hog meats and products during recent months will be illuminating since the attitude of England in this matter has not been greatly modified since the establishment of the so-called foodstuffs blockade against her enemies.

A statement showing exports of domestic foodstuffs during the eight months ending with August made public by the Department of Commerce on October 6, shows that during that period there were exported from the United States 326,163,620 pounds of bacon valued at \$43,280,938 as compared with 112,333,387 pounds valued at \$15,235,442 during the same period in 1914. Of hams and shoulders there were exported during the same period 190,206,635 pounds valued at \$26,403,947, as compared with 102,149,378 pounds valued at \$14,675,308 during the same period in 1914. Of lard there was exported in this period 315,518,440 pounds valued at \$34,437,924 as compared with 280,511,877 pounds valued at \$31,190,872 during the same period in 1914. Of neutral lard there was exported during this period 21,647,266 pounds valued at \$2,460,022 as compared with 17,109,661 pounds valued at \$1,883,272 during the same period in 1914. Of pork, pickled, etc., there was exported during the above named period 41,517,068 pounds valued at \$4,417,073 as compared with 27,527,111 pounds valued at \$2,993,310 during the same period in 1914. Of

lard compounds there were exported during the above named period 45,000,230 pounds valued at \$3,845,149 compared with 34,793,780 pounds valued at \$3,232,345 for the same period in 1914.

That this increased movement has been more marked during recent months than during the early part of the eight-month period is indicated by figures relating to the decrease in the stocks of provisions in the five leading western markets during September which amounted to 81,178,340 pounds comparing with a decrease of 20,840,607 pounds for September of last year and a decrease of 51,289,100 pounds for September of 1913. Notwithstanding the fact that statements of provisions in hand at the five leading western packing points on October 1 showed a total of 203,531,462 pounds on hand as compared with 150,415,496 pounds a year ago, the marked decrease of these stocks during the past month coupled with the fact that there is an active domestic as well as foreign demand for provisions the situation would not appear to warrant a pessimistic outlook. This is more particularly true when it is considered that pork products are selling on the block at domestic retail markets at a higher price than at any time during recent years. This is undoubtedly partly due to an increased demand for pork products for home consumption owing to the unusually high price of other meats, for which there is no relief in prospect for the consuming public.

Another factor to be considered is that the prospect of complications in the export of lard and provisions has caused an unusual spread in market values between packing hogs and butcher stock causing a marked reduction in the average weight of hogs received at the principal markets. A careful analysis of the situation does not reveal sufficient cause for any substantial and permanent decline in market values. In ordinary seasons there is such a decline with the maturing of a new corn crop and the more liberal marketing of hogs throughout the country. Generally this decline is in evidence before this season of the year, although the lateness of the corn crop has undoubtedly been a factor in limited marketing over a considerable area of the corn belt.

With these conditions prevailing it is a reasonable deduction that the future of the hog market will depend quite as much on the attitude of the farmers of the country as upon that of the packers, since if the hog crop is not forced upon the market too rapidly the domestic demand will prove a supporting factor of much greater influence than in the average year. The continued marketing of light weight hogs is at least an indication that there is not the usual surplus of finished hogs being held back at this time. Pastures are being utilized more than ever before as a factor in pork production instead of forcing the spring pig crop to maturity within the shortest possible space of time and this fact will naturally extend the season when this year's pig crop will be brought to marketable maturity and weights. With these facts in mind conservative marketing, especially on the appearance of a falling market, will tend to support values and materially increase the total revenue to the farmers of the state and country for the season's hog crop.

The farmers of our territory are rapidly becoming capitalists and are on the lookout for investments that promise safety and income. There are securities, municipal bonds that are guaranteed by the entire property of the municipalities or districts that issue them, and preferred stocks in old established and successful manufacturing concerns that are in many cases safer and bring more income than banks.

There is no feature of our advertising that we guard with as much care and personal investigation as parties advertising securities for sale. No advertisement along this line is admitted to our columns until we are convinced beyond a doubt that the advertisers are in every way responsible and have an established reputation for strict honesty and fair dealing. So we can with confidence say to our readers that they can implicitly rely upon the representations of any advertisers in our paper offering securities for investment.

Eternal Vigilance the Price of Safety.

With Michigan free from foot-and-mouth disease; without even sporadic outbreaks for a sufficient length of time so that the Federal quarantine has been lifted and the entire state included in what is known as the "free area," necessity for further comment on the local situation should have passed. Unfortunately, however, while the great majority of farmers and stock breeders and feeders of Michigan are congratulating themselves upon the successful outcome of the eradication of this plague in Michigan there are still some who are not fully convinced as to the necessity for the application of such heroic methods in the eradication of this disease.

This ground has been gone over so fully in our columns that repetition is unnecessary, but with the battle fought and the victory won we caution the reader against the acceptance of specious arguments which are in direct contravention of scientific evidence and statistical facts. Now that foot-and-mouth disease has been successfully eradicated from Michigan every farmer within the state should make himself a committee of one to support the federal and state authorities in keeping further infection away from our flocks and herds. There is now effective a state quarantine against live stock from Illinois, even for purposes of immediate slaughter, due to the fact that the support of federal and state efforts toward the eradication of the disease in that state has not been sufficiently complete to bring about the successful completion of eradication work. In one instance the owner of a valuable dairy herd has sought the aid of the courts and secured an injunction, which delays the work while its legal phases are being further argued. In the meantime several new centers of infection have appeared in the county involved, notwithstanding that the strictest possible quarantine of the infected premises has been maintained. But even in Illinois, co-operation with the authorities is becoming general, and public sentiment is rallying for the final and complete eradication of the disease at the earliest possible date.

To the end that in the possibility of future outbreaks of the disease there may be better co-operation between federal and state authorities, transportation companies, live stock owners and others who may be interested, a conference has been called by the Department of Agriculture to be held in Chicago late in November for the consideration and formulation of definite plans for quick action in the eradication of any future outbreaks of the disease in this country, so that a general and expensive campaign like that necessitated during the past year because of the rapid spread of the infection into 21 states and the District of Columbia may in the future be avoided.

To the end that such co-operation may be complete, every owner of live stock in the state should make himself a committee of one to notify both state and federal authorities of any suspected outbreaks in his community and assist by observing strictly the quarantine regulations imposed, by keeping away from infected herds and keeping other people away from his

own live stock, and by observing every sanitary precaution against the introduction of the infection. Farmers' Bulletin 606 which can be secured by application to the Department of Agriculture contains information regarding this disease which will convince any reader who may still have doubts on this point that no price is too great to pay to prevent this disease from gaining permanency in the flocks and herds of this country.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—No changes of consequence have been reported from the war situation in Europe. The Austro-Germans seem to have made some advances into Serbia and the Bulgarians have attacked the Serbians just north of the Greek border. The French and English troops are reported to be assisting against the invaders. Along the Russian front the Germans have made further attempts to capture Dvinsk. On the remainder of the eastern front the Russians are on the offensive and are pushing the Teutonic armies back, especially in Galicia. The Italians are renewing their offensive presumably to prevent Austrian troops from assisting in the German drive across Serbia. On the western front fighting has quieted down and activity has been transferred to Lorraine where the French report the capture of a German trench north of Reillon and to the Vosges where the Germans have again withdrawn from Hartmanns-Weilerkopf line, which has changed hands many times. It is stated that the Allies are about to land strong new forces at Saloniki. It is also stated that Greece may demobilize her forces for lack of funds. The entente powers have refused to lend her any money unless the treaty with Serbia is upheld and Greek troops aid the Serbians.

The United States government has placed an embargo on exports and imports to and from the Mexican territory controlled by Gen. Villa. This action cuts off the principal source of revenue to the Villa contingent, and will probably result in general desertion by his followers.

Disorders of considerable proportion have occurred in Moscow, Russia, during the past few months because of lack of employment. To maintain control the government has proclaimed a state of war in the Moscow district.

National.

A plan for national defense has been announced by Secretary of War Garrison. The plan includes a regular army of 140,000 men, the creation of a new continental army of 400,000 which, together with the militia of 125,000 would give the United States an available military force of 665,000 men.

It was necessary to call out the national guard to restore order during election riots in Charleston, S. C., last week. S. J. Cohen, political editor of one of the local papers was shot and killed. A bitter contest over the mayorality office was responsible for the rioting.

Five persons were suffocated or burned to death in a fire that swept through a five-story tenement in New York City Sunday morning. A score of others are suffering from severe injuries.

Manufacturers of automobiles in Detroit have expressed a willingness to co-operate with the Federal government in the raising of a defensive army. These concerns will grant permission to their employes to engage in military training for a given period each year if a suitable plan can be worked out.

The chief of police at Galesburg, Ill., was shot and killed Sunday night while leading a raid on a negro gambling house.

Six German officers of the German vessel Kronprinz Wilhelm, which is interned at Norfolk, Va., are missing, and it is believed they have put off to sea in a small sloop.

The reckless speculative spirit which has predominated in the stock exchange the past fortnight has subsided and traders feel easier over the situation. General business conditions in the country appear however to show normal improvement along almost every line. Dry goods houses are finding trade very good, which, together with the general employment of men, the increase in the demand for iron and steel, the good values for farm products and the movement of freight in all parts of the country gives a decidedly optimistic outlook for the immediate future at least.

On Tuesday of this week voters in New Jersey will pass upon the merits of woman suffrage which, if adopted will give the franchise to all women over 21 years of age residing within the state.

Fall Plowing

IN this section (northern Indiana and southern Michigan), the farmers are pretty nearly equally divided in the matter of fall plowing. Those who fall plow, do so from different motives. Some do so from a desire to push the work, and have it out of the way when hurrying time comes in the spring. Considered from this standpoint, the idea would seem to be a commendable one, as so many things usually demand the attention at once in the spring, that anything that lessens this is a decided advantage.

Another consideration advocated by some is that on many soils where the plant food is locked up in insoluble forms, the action of the frost tends to break down these compounds and make available plant food that can be used by the crop. The soil being turned up to the action of the oxygen of the air and frosts, is more effectively acted upon than if it had not been stirred with the plow. Where the soil is loose, as it is in so many places, fall plowed land has sufficient time to become well compacted before it is necessary to put in the seed, whether it be corn or oats.

We have known sod to be plowed in the fall for corn, and the following spring proving to be a very wet and late one, the field had to be abandoned without a crop, the grass getting such a start, when sod of the same kind of land plowed in the spring made a good crop. Many claim that fall plowing destroys grubs and cut-worms by exposing them to the severe weather so as to destroy them, but in our own experience we have never observed any difference in fall or spring plowed ground.

In our opinion, sod land should always be plowed in the fall if possible so that the roots will be rotted and the ground sufficiently mellowed to make the preparation of a suitable seed bed possible, whether for potatoes, oats, or corn. Where the field is wanted for pasture, we delay the plowing as long as possible, so that stock will get the most from the field. It usually is possible that the plowing may be delayed until November, but if the work is delayed too long, it sometimes occurs that the work has to be carried over until spring.

Perhaps the greatest objection that may be urged against fall plowing is that there is always more or less danger during a wet season of the soluble plant food in the upper layers being washed out and lost. We must admit that on hilly land this objection would be a valid one. However, one could get around this by plowing early enough so as to sow a cover crop. The roots of the cover crop would prevent, in a very great measure, the soil from washing.

Indiana. D. L.

BETTER ROADS IN MICHIGAN.

Kent county's road commission will ask the supervisors to spread a half-mill tax, raising the sum of \$102,000 for highway work, which will build two bridges and add 28 miles of good roads. No long stretches are planned, except the Ada-Lowell road of seven miles, which will be widened to 16 feet to meet trunk line specifications. One mile of concrete road will be built on West Leonard street, starting at the city limits and some stone road will be built in Cannon township. This year the commission has built 25 miles of road at a cost of about \$150,000.

District road commissioners of Washtenaw county are asking for an assessment of one and a half mills for road purposes on the district composed of Ann Arbor and Ypsilanti cities, the village of Dexter and the townships of Salem, Superior, Ypsilanti, Pittsfield, Scio, Northfield and Ann Arbor. This assessment will raise

about \$48,000 for road work in 1916. The Otsego county commission favors raising \$14,000 for building about five miles of road, largely trunk lines.

It is planned to build 15 miles of state reward road in Cass county the coming year, or a mile in each township. And in every instance except Silver Creek the work will be an extension of reward roads.

Wayne county supervisors are asked to authorize a mill tax. The Detroit Board of Commerce favors raising \$300,000 a year by direct tax for good roads in Wayne county.

Pledges of nearly half a million dollars have been secured for the proposed Wolverine Pavedway from Detroit to Grand Haven, via Grand Rapids and Lansing.

Supervisors of Keweenaw county have been asked for \$40,000 for road work in 1916. It is planned to improve the road from Allouez to the Mohawk turn, from Phoenix to Central and from Central to Delaware, using a waterbound macadam on a good foundation.

Houghton county has extensive plans for road improvement next year.

Fairfield township in Lenawee county has let contracts that run above \$40,000 for building seven miles of stone road. These include four miles of trunk line from the Ohio boundary north toward Jasper and three miles from Weston north to the Madison township line.

Covert township in Van Buren county has completed over a mile of macadam road 16 feet wide through Covert village, a link in the West Michigan pike. Another mile is being built and soon the township will have a continuous stretch of six miles of trunk road from the Berrien line to South Haven township.

Next year the Jonesville road out of Litchfield, in Hillsdale county, will be built of stone and then every road out of the village, with one exception, will be stone.

Muskegon county has built about 11 miles of new road this year. The commissioners have decided that hereafter all new roads will be treated with some suitable binder, a tar or asphalt preparation, since road maintenance is a big item, over half the annual road money going into repairs and resurfacing.

Chippewa county has adopted plans for 70 miles of trunk road and has let contracts for six miles. It is expected other contracts will be let this fall.

Fayette township, Hillsdale county, is building a mile of stone road 16 feet wide out of Jonesville, which will cost about \$3,515. The township will draw \$3,400 from the state, hence this road will cost only \$115.

Sheridan township, in Newaygo county, has voted a bond issue of \$35,000 and will improve about 14½ miles in different sections, so that few residents will be more than a mile and a half from an improved highway.

Vassar township in Tuscola county, will build four miles of state trunk line road between Vassar and Juniata.

President Chapin of the Hudson Motor Company, Detroit, has presented the University of Michigan with a graduate fellowship in highway engineering, carrying an annual payment of \$500. The money will be used exclusively for the benefit of Michigan highways.

Dryden township, Lapeer county, has let the contract for building four miles of state reward road.

Allegan county has let the contract for \$5,385 to build a mile of state trunk line road from Plainwell south to the county line.

Newfield township, Oceana county, has voted a bond issue of \$20,000 and will build a trunk line from Hesperia to the Ferry town line.

The Osceola county board of commerce is urging a road building program for this fall and winter, giving

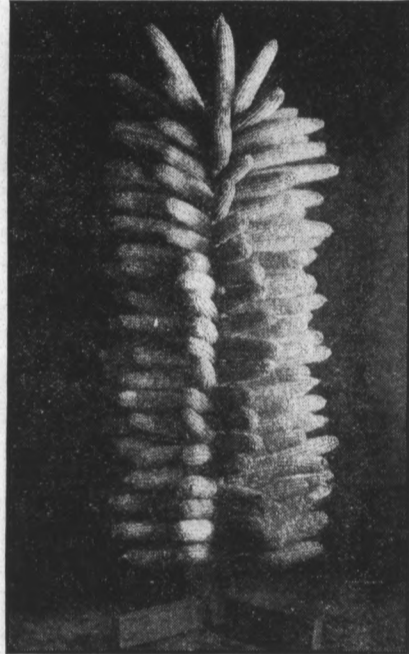
employment to farmers who have lost heavily because of frosts.

On the whole, the year 1916 gives promise of being the banner year in road building in Michigan. Under the Covert act there have already been filed with the state highway department petitions for over 100 miles in the lower peninsula.

Kent Co. ALMOND GRIFFEN.

SEED CORN DRYING RACK.

To the bottom of a post about five or six inches in diameter and five feet long, legs were fastened and to the outer end of each leg a caster was placed. Short pieces of number two wire were driven into the post as close together as would let the ears of corn slip over them. The wires



A Convenient, Portable Drying Rack.

should be about four inches long and driven into the post about an inch. A few days in a warm place will cure the corn sufficient for storing. The casters make it easy to move, even when filled with corn, the rack shown holding nearly four bushels.

Branch Co. I. H. W.

POTATO EXPERIMENTS.

A comparison of yields from seed pieces taken from selected tubers and from culls of two varieties, conducted by the South Dakota Station, showed in an average of nine cases an increased yield of 5.53 bushels per acre in favor of the selected seed, the average total yield per acre being 114.2 bushels. In these tests the tubers were cut into quarters, so that the culls represented smaller seed pieces.

A test of the influence of size of seed piece on yield consisted in planting small, medium, and large pieces taken from the same tuber. It was noted that from Early Ohio seed, the average yield from seed pieces of 0.35 ounces was 183.8 bushels per acre; from pieces weighing 1.4 ounces, 272.53 bushels, and from seed pieces weighing 2.66 ounces, 298.59 bushels. With Carmen No. 3 seed, the use of seed pieces of 0.35 ounces weight produced an average of 165.66 bushels; those of 2.1 ounces weight produced 270.9 bushels, and those weighing 4.4 ounces produced 298.23 bushels.

The results of another test showed that the use of culls for seed causes potatoes to "run out." Not only is the type of tubers produced from selected seed larger than from culls, but also the average weight of tubers produced is greater.

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



For Long Service

If a man would pick out a suit of clothes as carefully as a good pocket knife, he'd seldom go wrong.

Buy Clothcraft Clothes and you'll get not only good looks, but quality that lasts like a well-tempered knife blade.

It's built into them by scientific methods. For 69 years the makers have concentrated on one big idea—increasing the dollar and cents value of medium-priced clothes.

You'll find Clothcraft really beats anything we can say about it. Come in and try on a Clothcraft Blue Serge Special ("4130" at \$18.50, "5130" at \$15), or any of our many other Clothcraft suits and overcoats at \$10 to \$25.

The Clothcraft Store

(IN YOUR TOWN)

CLOTHCRAFT ALL WOOL CLOTHES
\$10 to \$25 Ready to Wear
Made by The Joseph & Feiss Company, Cleveland



AGENTS WANTED

for our **Hickory** (PORTABLE) **Smoke House and Store House for Meats**
Smoke Cooled by Air and Radiation
Operates at chimney, same as stove. Smokes ham, bacon, sausages, Dries fruit. Sprots only. Every farmer needs one. Three sizes. Write for agency. No sales experience necessary. Big discount on first Smoke House in every community. Catalogs furnished. For particulars, address **Hickory Smoke House Co. (Not Inc.) 8213 Wentworth Ave., Chicago**

4 Empire STEEL Wheels 75c
that's the cost per year on basis of service. They last 20 to 25 years. Average cost \$13. Save labor, time, horses, roads, money. Put a set on your wagon at our risk. Write for catalog and prices. **Empire Mfg. Co., Box 989 Quincy, Ill.**

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

Healthy Cows All The Year Round!

A natural food that strengthens and builds up is far better than any kind of tonic or medicine for animals, as well as for men. Scientists have proved that this new food increases the value of any kind of feed, when mixed with it.

Buckeye Feeding Molasses

helps make more milk, and keeps your cows in good condition. It is also a good fattener for beef cattle.

For Horses—Buckeye Feeding Molasses is relished by horses. It keeps their stomachs in perfect condition, aids digestion and besides saving feed, prevents kidney diseases, colds, etc.

For Sheep—Will keep your flock healthy and well; adds weight and makes finer wool and more of it.

For Hogs—Makes every hog a big hog—no runts. Larger profits in pork.

17 CENTS a gallon f. o. b. Detroit, in barrel lots, or 19 cents freight paid to any point in the U. S. Although the market on this grade of molasses has advanced over 6 cents a gallon, we are able through liberal advance buying, to maintain for our customers almost as low prices as last year.

Our Free Trial Offer:

Send this coupon today and get our test proposition.

W. H. EDGAR & SON,

1042 Lafayette Blvd., Detroit, Mich.

W. H. EDGAR & SON,

1042 Lafayette Blvd., Detroit, Mich.

I have.....head of cattle..... sheep.....hogs and.....horses.

Send me your trial proposition to prove that Buckeye Feeding Molasses will benefit all of them.

Name.....R. F. D..... P. O.State.....

The Best Land Is Drained Land

Many Farmers think only low, wet land needs draining. The fact is, draining makes all land easier worked in all seasons—renders plant food easier available—keeps soil in more fertile condition. Our Vitrified, Salt Glazed, Frost Proof Drain Tile directly and permanently promotes all these land benefits. 3 in. to 27 in., in size. Write for Catalog prices.

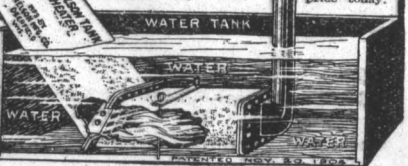
AMERICAN SEWER PIPE CO.

200 St. James St. Jackson, Mich.

Nelson Tank Heater - Two weeks Free Trial

Heats water in half the time with half the fuel. Burns trash, cobs, wood or coal. All heat under water. 50,000 in use. If you don't think it worth double the price, return it at our expense.

NEILSON MFG CO. 16 Nelson Ave. DEERFIELD, WIS. If not sold by your dealer, write for price today.



6 CORDS AN HOUR THE IRELAND WOOD SAWING MACHINE

Table mounted on grooved rolls. Saw above center so it cuts down and in—not against operator. Legs moved easily—almost self feeding. Does a week's work in a day. Pays big dividends. Write for printed matter—also our Drag Saw Machines, Saw and Shingle Mills and Hoists. Unequaled values on Canvas Bolting. Ireland Machine & Foundry Co., 33 State St., Norwich, N.Y.

Ensiling Frosted Corn

THE first killing frost of the season occurred on October 10, and it did kill things all right. This is at least two weeks earlier than last year, and crops were not as far along as last year. Nature did not figure right this year. She cut many plants down untimely.

It will take this week to finish picking the sweet corn, and then we must fill the silos after that, and with frosted cornstalks. There is much speculation about the value of frosted corn for live stock. I know this from numerous letters which I have received from various parts of the state. Some have an idea that this frosted corn is unfit for food. However, I know from experience that it is of more value than many seem to realize. Years ago I built my first silo to save a crop of late corn. Owing to a late, wet spring, and also to the fact that we were much delayed by doing a job of ditching, we did not get the silage corn planted until July 12. It grew wonderfully but did not mature before frost. I had anticipated this and built a silo. The corn was only nice roasting corn when killed by the frost. We cut it and put it into the silo at once. I was greatly pleased by the results we got from feeding it. A plain farmer could see no difference in results from this silage and any silage. The cows ate it well and did well. It certainly had food value. I am of the opinion that frost does not destroy the food value of corn to any great extent if it is put into a good silo within a reasonable time. After a killing frost green corn will deteriorate very rapidly and should be ensiled as soon as one can do so. But when this is done you have just about as much cow food as you ever had, and so far as I can see it is just as satisfactory food. Does the freezing destroy the food value? If so, how? And to what extent? Who can answer this question? Certainly no farmer can. It is a job for a chemist, and can he tell us?

If corn stands for any length of time after being killed by the frost the leaves will all dry up and blow away. They and their food value are certainly lost. But if the corn is ensiled in a day or two after the frost the leaves are saved. How much food value they have after being frozen I do not know. But suppose we lose the leaves, how much of the crop have we lost? Represent the food value of an average corn plant by 100 per cent. The chemist tells us that 40 per cent of this is in the ear or grain, and 60 per cent in the stalk and the leaves; also that 75 per cent of the food value of the stalk and leaves is in that part of the stalk below the ear. At first thought this may not seem reasonable but weigh it and it will seem more reasonable. Now 75 per cent of 60 per cent is 45 per cent, or that part of the plant below the ear of corn is 45 per cent of the entire food value of the stalk and leaves, and this leaves only 15 per cent for that part of the stalk above the ear and the leaves. Hence it is seen that the leaves of the corn plant have little food value when compared to the balance of the plant. We can readily believe this when we weigh the leaves and compare them with the weight of the ear and the stalk. Therefore if we lose all the leaves we have only lost a small part of the food value of the corn plant.

If the corn plant is left standing or if cut and shocked at maturity it rapidly deteriorates in food value because it becomes dry and woody. The starch slowly turns or changes to cellulose fiber and is largely indigestible, but put it in a silo and this change is checked and its digestibility preserved.

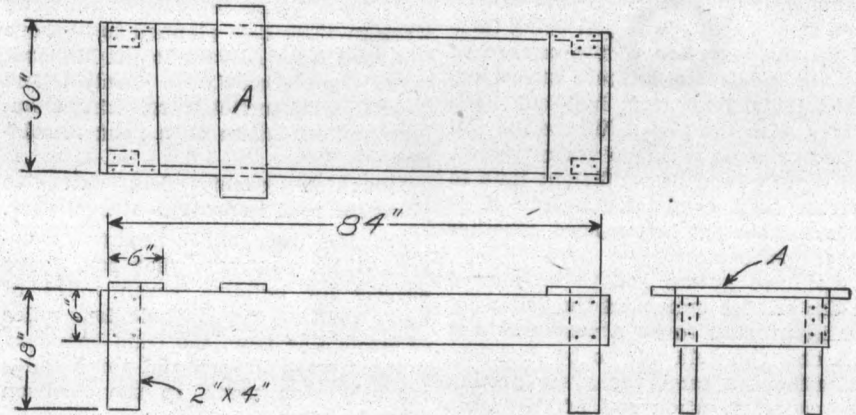
Don't get discouraged because the corn is frosted. Get it into the silo

as soon as possible. You will have some good feed. You haven't lost as heavily as you imagine. The case is bad enough, to be sure, but it is far from being hopeless. If the corn was not far enough advanced to make silage before the frost, that is bad, for the frost kills the leaves and checks all growth and development.

COLON C. LILLIE.

A HUSKING TABLE.

The husking table shown here is very convenient. It is light and easily moved and provides a dry, comfortable seat for the worker. The seat "A" is slid forward as the shock is



husked out. It is estimated that a man can husk from one-sixth to one-fifth faster in this way than when the shock lies on the ground.

Allegan Co.

O. F. EVANS.

LILLIE FARMSTEAD NOTES.

Wheat Seeding.

We began sowing wheat October 2, a month later than last year. The land was too wet to work nicely, but it seemed that if not sown now it will not be sown. Results all depend upon the year. Last year the wheat sown the first of October was as good as any we had, even better than that sown the first of September.

I intended to sow 100 acres again this year, but only 60 acres can be sown. A 20-acre field of sweet corn is hardly ready to pick and will be entirely too late for wheat. Another 20-acre field of lima beans we began harvesting today. This could be sown if it could be prepared without plowing. Wet weather since June, however, has allowed the weeds and grass to grow so much that it will be necessary to plow. It is too late for that. I prided myself on having a clean bean field. It was well cultivated and all hand-hoed before the rains.

Early in the season I promised to make a test of the question of plowing vs. disking stubble ground for corn. The spring was so dry I disliked to plow for fear of not sufficient moisture to assure good germination. The corn never would have germinated on the clay. I am satisfied of that. I intended to plow a strip to test the matter, but the tractor broke down and we could not do it. It has been a poor corn season. Too cold and wet, yet I am positive I would have had better corn had the land been plowed last fall or early this spring. I would recommend plowing for corn every time when possible. I have a fair crop but on one field especially it is not as good as one has a right to expect, for the land was well manured. With favorable conditions there should have been a bumper crop.

Alfalfa.

The third cutting of alfalfa was a splendid crop. Fully equal to the first or second. It is a wonderful crop. I am sure the crop this year has averaged fully five tons per acre, if not more. Not a single cutting have we been able to get in the barn without being injured by the rain. The second crop was badly injured. The last crop

could have been well dried out had we known the weather would continue fair. It looked like rain and the habit of raining had become so fixed I was afraid and hurried the hauling a little faster than was best. It is heating some in the mow but possibly may come through in fairly good condition. The alfalfa however, is not to blame for the weather. It has made a truly marvelous growth this season.

While alfalfa is a good crop the growing of it can be easily overdone. I have 30 acres now and I think I have enough. That means the same as 90 acres of meadow. The harvesting comes at hurried times of the year and it is quite exacting.

This crop is too valuable for pasturing. It is not a good pasture plant. Pasturing injures it. Cutting at the

proper time does it good. But cattle and horses or sheep injure it severely. Hogs are not so bad. Even with hogs I doubt if it is wise to pasture it very much. It will make a surprisingly large amount of hay but will not make so much pasture.

Sweet Corn.

The sweet corn crop is disappointing in this vicinity. I haven't heard of a single good yield. One field of my own was only about one-third of a crop. The ears did not seem to develop. They are small. The season has been too cold. It wants hot weather at some stage of the game for good corn. This field, however, was not in good shape for a corn crop. I did not expect a good crop. The land was in beans last year and the spring was so dry I did not plow the ground, simply disked it. On account of the wet weather and press of work the field was only cultivated once during the season, although it was harrowed twice after the corn came up and was remarkably free from weeds. The other field of corn is yielding much better, but is not a full crop.

USE OF SULPHUR FOR CONTROL OF POTATO SCAB.

An agricultural scientist has been carrying on investigations to obtain data regarding the effectiveness of sulphur for the control of potato scab, and his preliminary report has been received by the Department of Agriculture. The results thus far obtained indicate that spring applications are more satisfactory than fall applications. The benefits derived from the use of sulphur were greater when applied to land where no cover crop had been grown the preceding season than on land where such a crop had been used. Seed treatment with formaldehyde and the application of sulphur to the soil gave better results than the sum of these two treatments used separately. Broadcasting of the sulphur on the soil after planting is considered the best method of application. When used in connection with fertilizers, sulphur was found more effective with ammonium sulphate than with sodium nitrate, with acid phosphate than with steamed bone, and with muriate than with sulphate of potash.

Remember this—that there is a proper dignity and proportion to be observed in the performance of every act of life.—Marcus Aurelius.

Marking a Half Century

THE past century has marked a marvelous agricultural as well as industrial advancement. The agriculture of our own state has been almost wholly developed through the labor and efforts of, at most, two generations of ancestors of those who are participating in the rewards of that pioneer industry. It is only within the last half century that scientific research has revealed many of the previously hidden secrets of successful agricultural practice, and that scientific knowledge built upon this research has been applied to the agricultural problems of our own state and of the world at large.

But previous to and during that time there lived a class of farmers who provided the foundation for later development in important lines of agricultural production, and by object lesson and example, as well as the products of their brains, skill and progressiveness, did more for the permanent advancement of agriculture during the early decades of this period than did scientists and educators combined. Such a tribute has been well earned by the pioneer breeders of pure-bred live stock who were at the same time the progressive and thor-

children and one great grandson, were present at the celebration. Four persons attended this celebration who were present at the wedding 50 years ago, viz. Jay and L. N. Olmsted, brothers of the "bride," and Mr. and Mrs. N. B. Hayes, the latter a sister, all of Ionia county. Mr. and Mrs. DeGarmo have lived in Highland township, Oakland county, since April, 1867, the second year following their marriage.

During his entire active life Mr. DeGarmo has been engaged in the breeding of Shorthorn cattle. His father, Henry E. DeGarmo, who moved to Michigan from eastern New York in 1840, was early interested in the introduction of good live stock into the state, bringing that year 20 Silecian ewe lambs and two high-grade Shorthorn heifer calves to his pioneer home in Washtenaw county. One of these calves developed into so valuable a cow that he afterward frequently said he would have been the loser if he had sold her as a calf for \$500. Such was the appreciation of quality in live stock of one of the men who contributed to the early history of live stock improvement in our state. His first purchase of pure-bred Shorthorns was in the fall of 1852 when he brought



A. D. DeGarmo, Veteran Oakland Co. Live Stock Breeder, with his Family.

ough-going farmers of their generation and community.

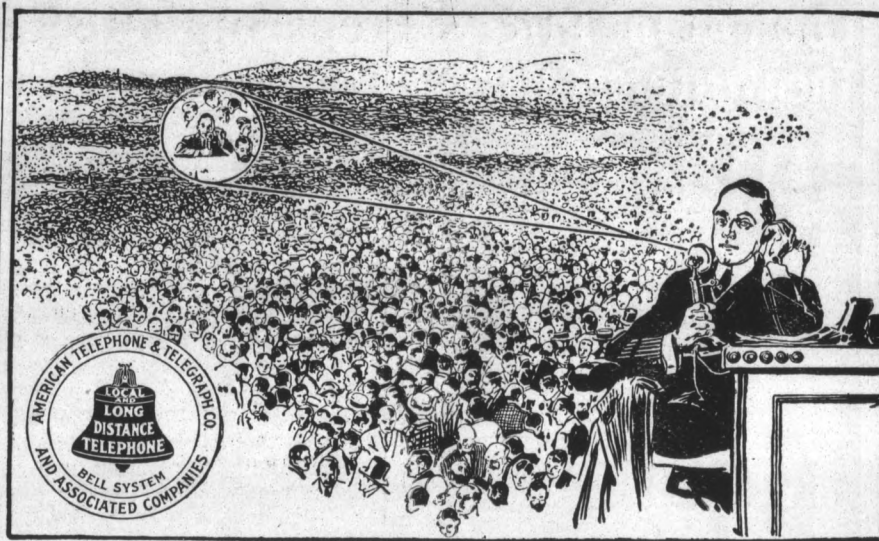
The earliest pioneers in this work within our state have long since passed from the scene of action, but in a few cases their sons took up the work where their fathers left it and have continued to build upon the same foundation until they, too, have earned the title of veterans in live stock and agricultural improvement, a work which merits more than passing notice and recognition from the present generation of beneficiaries.

Our thoughts are directed in this channel by a recent rural social event which marks the passing of an important milestone by one of the oldest living breeders of pure-bred live stock in the state from the standpoint of continuous work in this field of endeavor, brief reference to which will be of interest to many Michigan Farmer readers who have been identified with the progress of Michigan's live stock industry during the early part of the last half century. This event was the celebration on October 3, by Mr. and Mrs. A. D. DeGarmo, of Oakland county, of the fiftieth anniversary of their marriage. This golden wedding was remarkable from the fact that death has not broken the family circle during the half century, and that all of their eight children with their families, including eight grand-

from New York the red and white two-year-old bull, Lord Byron, bred near Rochester, N. Y., and exhibited him at the Michigan State Agricultural Society's fourth annual fair held at Detroit, winning first prize and receiving for same a silver medal issued by the agricultural society, which is still in the possession of his son. Further purchases of Shorthorns were made in Ohio in 1856, and in 1859, in company with Dorus M. Fox, of Ionia county, Mr. DeGarmo brought from Pennsylvania 18 head of pure-bred Shorthorns, a portion of which were brought with him to Oakland county in 1861 and formed the foundation stock of the herd bred on the DeGarmo farm for many years. Later, new blood lines were introduced by the son in the development of the herd which became one of the best in the state.

In addition to being a progressive breeder, Mr. DeGarmo has been—as is typical of breeders of pure-bred live stock in general—a progressive farmer who has been active in the introduction of improved seeds and crops of many kinds into his home community, as well as in the breeding of other lines of improved live stock. He was one of the first farmers in Michigan to experiment in the growing of alfalfa, and owned the first grain binder brought into the community, if not

(Continued on page 365)



The Man in the Multitude

That the human voice may be transmitted across our continent by telephone is the marvel of this age of wonders. Yet the full significance of the achievement is not realized if it is considered strictly as a coast-to-coast connection.

The Transcontinental Line not only bridges the country from east to west, but, by having finally overcome the great barrier of distance, it has removed the last limitation of telephone communication between all the people of the nation.

This means that the voice can be sent not only from New York to San Francisco, but from *anywhere to anywhere*—even from *any one to any one*—in the United States.

Wherever you are, it is possible to reach any one of our hundred million population. You can single out from this vast throng any particular individual with whom you desire to speak.

To bring this about, the Bell System has spent years and millions, extending its lines everywhere, anticipating the ultimate triumph. It has had the foresight and the courage to unite this great country, community by community, into one telephone neighborhood.

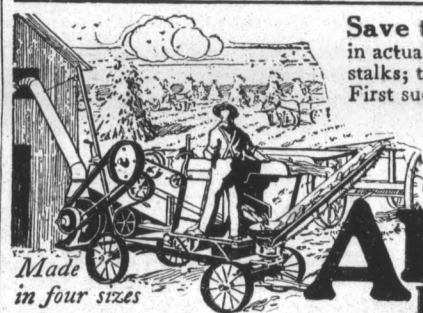
With the Transcontinental Line in successful operation, the established Bell highways make you the near neighbor of your farthest-away fellow citizen.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES.

One Policy

One System

Universal Service



Save the stalks!—they're half the crop in actual feed value. The Appleton cuts or shreds the stalks; the fodder saved paying whole operating cost. First successful machine husker made; built by Appleton Standards from 43 years experience in farm machinery making. Husks cleanest, shells least; equipped with most efficient corn saver. Sizes for 4 h. p. and up gasoline engine.

APPLETON Husker & Shredder

Guaranteed to do more and better work with less power than any husker of equal size.

Easiest and safest to operate. Gives years of service; yet one season's income from it pays its cost. Send now for free Appleton Husker Book. Appleton Mfg. Co., 520 Fargo St., Batavia, Ill.



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, Fulton Building, PITTSBURGH, PA.



SAVE-TH-HORSE

BOOK FREE

OUR Save-The-Horse BOOK is a Mind Settler; Tells How to Test for Bone Spavin—What TO DO for a Lamé Horse. It is our 20 Years' Experience and Discoveries. COVERS 58 forms of LAMENESS—WITH ILLUSTRATIONS. But write, BOOK, Sample Contract and ADVICE—ALL FREE (to Horse Owners & Managers). Address TROY CHEMICAL Co. 20 Commerce Ave., Binghamton, N.Y. Duggists Everywhere sell Save-The-Horse with COU-TRACT, or we send by Parcel Post or Express paid.

YOUNG Man, would you accept a tailor-made suit just for showing it to your friends? Then write BANNER TAILORING CO., Dept. 177, Chicago, and get beautiful samples, style and a wonderful offer

FOR SALE Of Interest to Feeders

One Hundred and Sixty Head
160 Selected Steers—Shorthorns and Herefords bought in Kansas City last May.
70 Head 2-year-olds, average 1050 lbs.
90 Head yearlings, average 750 lbs.
Have been run all summer in Iosco Co. on Miller Ranch, in prime condition. Phone or address

K. R. SMITH, Ionia, Mich.

LEARN AUCTIONEERING at World's Original and Greatest School. Every branch of the business taught in 5 weeks. Write today for free catalog. JONES' NAT'L SCHOOL OF AUCTIONEERING; 29 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

Look At The Prices Then Write For Catalog

98⁷⁵ A Galloway catalog in your home puts dollars in your pocket and cents out of yours. It tells you exactly what to buy, how to buy it, and why to buy it. It is a top-notch.

64⁷⁵ That's the price of a quality spreader. It means putting \$25.00 in your own pocket. A clear saving over what you would pay elsewhere. Special patented features, light weight, steel gears, flexible rake, split of heavy channel steel. Trussed like a steel bridge. A quality spreader at a low price.


My New Price on Separators The new separator is here. What every farmer needs. A price every one can afford. Close skimmer, easy to clean. Bath in oil gears. Sanitary base. A special bowl. Quality of materials, simple construction, wonderful improvements. Lowest price makes the biggest separator value in the world.

34⁵⁰ Get the big Galloway catalog full of remarkable bargains for farm and home.

W. M. CALDWAY COMPANY
Box 187
Waterloo Iowa

Free Try-On of the Aluminum Soled Shoes

with **Solid Rubber or Leather Heels and Rocker Bars**



Think of aluminum protection and lightness with the easy walking comfort of rubber or leather! No other metal soled shoe has these features.

You can now get our 1915 improved shoe. Water-proof—rain-proof—snow-proof—puncture-proof. Save \$50 worth of ordinary shoes—protect you from colds, rheumatism, lumbago, pneumonia.

Racine Aluminum Shoes keep your feet warm and dry anywhere. Positively the most comfortable shoe you ever wore. No metal can touch you. Made in every height from 6 to 16 inches. Every size from 1 to 13. Boys' shoes as well as men's. Prices surprisingly low.

Get our try-on, money-back proposition. Money cheerfully refunded if you are not entirely satisfied. Write today for illustrated free book, "Aluminum the Sole of Health." Address Racine Aluminum Shoe Co., 5812th Street, Racine, Wis.

Vetch Separator



The machine that will positively separate vetch from wheat, rye or oats successfully.

Send for Circular

The **Sinclair-Scott Co.**
Baltimore, Md.

Clearing Stumpland Is Easy If You Do It Right

Zimmerman Mighty Monarch Steel Stump Puller makes land clearing simple, easy, quick. Cheaper than dynamite. Much better because it gets stump roots and all. Disturbs less soil.

Valuable Book FREE Tells all about land clearing. Explains different methods, tells about various stump pullers, why the Zimmerman is best. All about its improvements so a boy can operate it. Why it clears larger area, why it's quicker and pulls larger stumps and plenty of proof why it's the only practical, inexpensive, satisfactory stump puller on the market. Write today for book. Address Zimmerman Steel Co., Bettendorf, Iowa, Dept. 117.

Preparing the Orchard for Winter

UP-TO-DATE farmers do not expect their orchards to produce profitable crops without giving them care, any more than they would expect it of their corn fields. They study the needs of the orchard and supply them, and then expect results with the same confidence they look for results from any other part of their farm. The American farmer as a class does not give any part of his farm the care he should, but he is learning, and the younger generations with their scientific training in their schools, and their practical training in their corn and tomato clubs, will be advancing much more rapidly than this.

There is much orchard work that should be attended to in the late fall or early winter. Many of the insect pests are carried through the winter in the trash and rotting fruit that is allowed to remain in the orchard. All this should be prevented, for it is not a difficult task. A little raking and burning will rid the orchard of all the trash, and leave the ground ready for the winter treatment.

Orchards need feeding. The manner of growth and fruiting can be your guide to a great extent in this work. If the trees grow luxuriantly, have dark green foliage and rather sappy wood there is an abundance of nitrogen in the soil, and its needs are not in that line. If the fruit does not set well it would indicate a lack of phosphates, and a rank soft wood would show a lack of potash. A properly balanced ration should produce a strong growth of firm wood and a crop of well formed and well colored apples.

Barnyard manures are preferred as

fertilizers for the humus is needed to keep the soil in good mechanical condition as well as to supply plant food. This manure is complete to a certain extent, containing some of all the elements necessary for plant growth, though nitrogen is somewhat in excess. After the orchard has been cleaned up and made ready for the winter, a dressing of manure should be given it. This gives several months for the plant food to leach into the soil, and the strawy material will decay to such an extent that it will be easily worked into the surface if summer cultivation is given the orchard. Better prune the orchard during the warm weather in winter, for in the spring when the busy season arrives you will rush it if you do it at all. If you take your time during the winter you will be sure to do a much better job. This is especially true if you will have much of it to do, like you will if you are intending to renovate old trees. Young trees need but little pruning, just enough to keep the limbs from rubbing and the head open. A thrifty tree grown on well balanced soil will seldom need any cutting done around it at all during its earlier life. It is the starved trees that grow gnarly and ill formed, with stubby crooked branches out of place.

If there is any danger of scale, better give a spraying with a lime-sulphur solution. It will do the trees no harm any way, and may benefit them in many ways. It is always best to be on the safe side, for a little prevention goes a long way in fighting fungous and parasitic diseases. Apply the spray with force and have it coarse enough so it can be driven into every crevice.

L. H. COBB.

50 degrees. Celery when dug is really transplanted as it has to be kept growing when in storage. Dig it with a good deal of soil on the roots and plant closely in sand or loose damp soil in a cool cellar or pit. The root crops keep best when buried in sand or soil in a cool place. The vegetables, excepting celery, will keep better if well dried in the sun before being stored.

TROUBLE DEPARTMENT.

Transplanting Fruit Trees.

I have two pear, four apple, and about a dozen plum trees set out three years ago at which time nurserymen claimed they were two years old. Will you please advise if these trees can be taken up and moved to my farm in Michigan this year with safety? If so, will you please advise best time and proper way to take up and move them?

Illinois. C. S. V.

We see no reason why you cannot successfully move your trees if you use the proper precautions in doing the work.

The best time to transplant trees, other than those received from the nursery, is in fall. The larger trees have a large root system and it is difficult to thoroughly firm the earth around the roots at planting time. By planting in the fall the trees are in place when the snows begin to melt, and the earth settles around the roots early in spring before the growth starts; this insures the trees a much better chance of starting. In setting the trees in fall it is quite essential to mound them with earth for a height of about a foot and a half; this is to keep the trees anchored against the winter winds.

In taking the trees up, as much of the root system should be left on as possible. None of the earth should be removed from the roots if the trees are to be transplanted to a place nearby, in fact, as much of the earth should be left on as possible; however, if the trees are to be shipped—as I judge these are—the earth should be shaken from the roots and the roots thoroughly packed in moist moss. Burlap sacking should be tied around the roots to keep the moss in place. It is best to pack the roots of each tree separately if the trees are of any size.

The places where the trees are to be set should be prepared beforehand. The hole should be plenty large and deep. It is better to have the hole deep enough so that the tree will set lower than it did in the place from which it was taken. The earth in the hole should be loosened up with a spade, and the thorough mixing of a little well rotted manure with it would be an advantage.

Another essential in having success in transplanting trees is the pruning of the top. Under normal conditions there is a certain balance between the tops and the roots, but when the trees are taken up a large share of the root system is left in the ground. It is therefore, necessary to cut back the top considerably in order to restore that balance. This pruning had better be done just before or right after the trees are taken up, as it will be more convenient to handle the trees.

In pruning the tree, the top should be cut down considerably, but care must be taken not to prune so that only large stubs of limbs are left. In order to have the tree leaf out easily in spring, some of the smaller limbs having leaf buds should be left. If these are cut off, the tree will have to force dormant buds, which will be an extra tax on the tree.

Fruits as an Agricultural Asset

No farm should be without an abundant supply of fruits. Most farmers realize that orchards and small fruit gardens are valuable assets when they wish to sell the place, but some still labor under the delusion that it means lots of labor and money to get a supply. It is true that fruit trees must be cared for if one would expect adequate returns, but the writer is not aware that anything of much value can be raised today without care. Hence fruit trees, vines and bushes pay as well as anything and they are a factor of untold value in making the old homestead more attractive to both old and young.

While it may not be advisable to set many trees in the fall, yet there is no better time to get the land ready, both for large and small fruits. Perhaps the ideal location for all kinds of fruits is a gentle hillside, not steep enough to cause serious washing and yet having slope enough to allow for air drainage. This latter is of the utmost importance in the case of peach, pear and plum trees and to a lesser degree with the small fruits. An easterly or northerly slope is considered best for tree fruits but any slope is better than level ground. By planting an apple orchard and intercropping for a number of years with small fruits, one may realize an income from the land almost from the first year.

fact that the ground is cleanly tilled and the fruit trees receive the benefit of the cultivation.

Aside from planting fruit trees as a commercial proposition, there are many old nooks and corners about the farm buildings which can be made attractive and productive by setting fruit trees and bushes. There is no better vine for covering a rustic arbor than a grape. Unsightly walls and fences may be hidden in the same way and return a profit at the same time. An untilled corner may be set to raspberry bushes and it will afford many delicious dishes of fruit for the summer table. To be sure, these half-wild bushes will not bear as well as carefully pruned and cultivated ones, but they are much better than a waste place. Be sure the home garden has a generous row of currant bushes. We would recommend both white and red sorts. Finally if you do not go in for commercial growing, have a half-dozen plum and cherry trees in close proximity to the house. Pears, both early and late, should be raised for home use. The farm thus supplied can be sold much more readily should occasion require, but after planting all these trees, we are sure the average man and woman will prefer to keep the place and enjoy it themselves.

New Hamp. C. H. CHESLEY.

STORING VEGETABLES.

Vegetables must be stored under the conditions that will keep them in the best condition for use. In the first place they should be handled carefully. Bruises form a place for decay germs to enter. The vegetables store best if a little immature. Cabbage, celery and root crops keep best at low temperature, with a fairly moist atmosphere and good ventilation. Onions keep best just above freezing in a dry atmosphere. Squash and pumpkins need a dry atmosphere at about

Just Renewed Subscription.

We like The Michigan Farmer because it applies to our everyday needs and teaches us many things that we, as farmers, should know. We missed it when it stopped, but were obliged to do without for a time.—Mrs. A. Hartwell.

Developing the Dairy Heifer

FRIEND CLAPP says that you can put more meat on a young animal with a pound of corn than you can put on an old animal with the same pound of corn. Professor W. A. Henry says the same thing, and I agree with both of them. We may well pursue this line of logic a little bit further and apply the same sort of sense to the developing dairy heifer. I well remember a lean scrawny calf we had at home and, as I remember it, this calf was reared on green grass and water. Because her appetite was so different from the rest of the herd, we kept her staked out separately and it was my daily task to lead this belching bovine to a brook some distance away. To say that I enjoyed it would be unnecessarily truthful. Nevertheless, Daisy grew to be a fine cow. Our neighbors were all very observing and told my father that it was the starvation this heifer experienced that made a good cow of her.

I never think of these comments without a smile and the folly of thinking that starving a young dairy heifer develops her maternal functions is ridiculous as well as ludicrous. This heifer developed in spite of the care she received. We need to apply exactly the same logic to the development of the young dairy heifer that we do to the development of the young meat animal. A pound of grain will put more growth upon the young dairy heifer than it will after the same heifer has reached mature age. Otis, of the Wisconsin Station, says: "The young calf makes better gains for the grain consumed than the older calf, which is an additional reason for giving it all it will eat. Limiting the grain causes a loss in gain and is seldom to be recommended. The calf is possessed of a good set of grinder teeth and when four to six weeks of age is able to do most of her own grinding." From this it will be readily seen that as soon as the calf is from four to six weeks of age she is able to eat any solid food and from then on, the dairy heifer ought to be fed rapidly because she will put on flesh at so much less expense.

There is, however, another point that ought to be mentioned in this connection and according to my notion, it is of great importance. If we let the heifer starve along she is likely to be a small individual by the time she is between 18 and 24 months of age and it is not advisable to breed a small heifer at that age. However, there is no objection to breeding heifers that young if they are of proper size. In fact, I think the cow is just a little bit better for having freshened early in life, provided she has almost attained her growth before she freshens the first time. The heifer must be fed well in order to be large enough to breed at 18 months. What happens if she is not bred then? It merely means that we go on feeding this undersize calf and with every day of added age the pound of feed that we give her is converted into proportionately less flesh or energy.

There is a farm management problem connected with the matter. We may well figure the money that we spend in feeding the embryonic cow as investment and interest on the investment must be deducted from the profits which she returns after she freshens. If she is three years old when she freshens, it means that we have lost a lot of money feeding her over this extra nine months, not to mention the fact that there is the interest on the investment to be reckoned. This is a feature that needs more attention than it often gets. The most economical method of developing the dairy heifer is that method which develops her rapidly at a tender age. In this manner she may be bred young and this means that she starts to re-

turn a profit on the investment much sooner than as though she were bred at a later date.

Ingham Co. I. J. MATHEWS.

ENSILOING SECOND GROWTH CLOVER.

I have a very heavy crop of second growth clover which, under present weather conditions will be hard to cure as hay. Would you advise putting it in silo, and if so would it not be a good plan to put some corn silage on top?

Arenac Co.

A. H. T.

Where possible I would advise making clover into hay. It is not a good crop to put into the silo. It is light and does not pack well in the silo and ordinarily it can be cured as hay with less loss of food value than by making ensilage of it. By cutting it fine and thoroughly tramping it and by adding water to make it pack and then by weighting it after it is in the silo, it can be made into good ensilage. It will be just the proper thing to do to put your corn in on top of the clover to weight it down.

Clover should be put into the silo when in full bloom or just before it comes in full bloom, before any of the sap has gone. If it gets beyond that stage it does not contain sufficient moisture to keep well. Then it must be wet to pack well, and it should also be weighted as much as possible. Corn is the best thing with which to weight it.

COW WILL NOT GIVE DOWN HER MILK.

Kindly give me a little advice concerning a cow who holds back her milk at every milking. What can I do about it? I have tried everything I can think of and have met with failures. Would a cow dry up after being fresh?

Macomb Co.

M. T. S.

The only way to get a cow to give down her milk is by getting her confidence, it cannot be done by force. No use in getting out of patience, this will do more harm than good. A cow yields her milk for the support of her calf. The person taking the place of the calf is the milker. We must work on the maternal instinct of the cow to get her to yield her milk. If the cow likes you, she will allow you to be substituted for her calf and will yield her best to give all that is needed. If the cow is afraid of the milker, she will not yield her milk. If the operation of milking hurts the cow, she objects. If the cow is abused in any way she will not respond by giving down her milk. Some cows are not good mothers, they will not respond to good use; they never will, they lack in capacity or in maternal instinct. These cows had better be disposed of.

Now the thing to do is, first of all to be kind to the cow. Pet her, make her like you. Then milk carefully; be sure you do not hurt her in milking, see that the teats are not sore. If she holds her milk up, rub her udder carefully and thoroughly and keep stripping her. Coax all the milk out you can. Usually it only takes a few days of this treatment before the cow will give her milk down freely. But if you cannot get next to her, better sell her.

Effect of Cow Catching Cold.

If a cow catches cold it certainly will affect the yield of milk. A severe cold may put her out of business entirely and stop the flow of milk completely. When she recovers from the cold the milk flow usually comes back in part; almost never does it come back to a full yield. A severe case of pneumonia (cold) may dry the cow off completely. Cows should be stabled nights when the weather is cold, in fact, every precaution should be taken to guard against their taking cold. Most cases of garget can be traced to the cow taking cold and the inflammation settling in the udder.

WINCHESTER



THE CALL OF THE WOODS IS A CALL FOR A WINCHESTER

HUNTING RIFLES

There are more Winchester rifles used for hunting than all other American makes combined. That is because they are so generally satisfactory. Experienced hunters know that Winchester rifles can be depended upon absolutely. Then again, they are made in all calibers and styles suitable for shooting any kind of game. For a good, reliable rifle, one that shoots strong and accurately, and gives years of service, no rifle equals the Winchester. No need of hesitating as to which make of hunting rifle to buy. Get a Winchester and you will never regret it. They are

THE FIRST CHOICE OF EXPERIENCED HUNTERS

HARRIS Barn Equipment

makes barn work easier. Our Feed and Litter Carriers easily do the most thorough work in the shortest time. If you take pride in a clean, orderly stable, investigate our Patented Stalls and Stanchions. Write for our large, illustrated catalog. It fully describes everything, contains many valuable hints. Mailed Free! Please ask for it on a post card today.

The Harris Mfg. Co., Box 230, Salem, Ohio

A Wonderful FEED

FOR DAIRY COWS

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

Larro-feed

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

THE LARROE MILLING CO., 1047 Gillespie Bldg., Detroit, Mich.

Only \$2 Down One Year to Pay!

\$24

Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 35 quarts per hour. Made also in four larger sizes up to 5 1-2 shown here.

30 Days' Free Trial Earns its own cost if saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

ALBAUGH-DOVER CO. (INC) 2195 Marshall Blvd. CHICAGO No. 54

Farmer Brand Choice Cotton Seed Meal. Highest grade manufactured—41 to 48% protein. Ask for price. BARTLETT CO., Jackson, Mich

THE HOOSIER Silo EXTENSION-ROOF

Roof Your Silo The Modern Way

The Hoosier roof is the kind of silo cover you have been waiting for. Don't roof your silo with any other roof until you have investigated the Hoosier. Between 5 and 10% of all the Hoosiers sold go to men that have stationary roofs on their silos and are replacing them with Hoosiers. Write TODAY for catalog and get the price of a Hoosier Roof to fit your silo.

Sheet Metal Specialty Co. 510 N. Y. St., Goshen, Indiana.

IT PAYS TO DEHORN

Dehorned cows give more milk; take less room; are gentle and easily handled. Dehorned steers fatten quicker and are not dangerous. Horns cost money; remove them with the new Improved Keystone Dehorner quickest, cleanest, strongest and most satisfactory. Clean, shear and sliding cut; no crushing; no bruising. Money back guarantee. Send for booklet.

M. T. Phillips, Box 126 Pomeroy, Pa.

CULL BEANS FOR FEED. Write if you can use a car or less. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

FOX, COON, SKUNK AND RABBIT HOUNDS Broke to gun and field. Prices right. Fox and Coon hound pups \$5 each. Stamp for reply. H. C. LYTLE, Fredericksburg, Ohio.

4000 FERRETS FOR SALE Price list free. C. J. DIMICK, Rochester, Ohio.

FERRETS FOR SALE. Catalogue free. C. D. MURRAY, R. 2, New London, Ohio.

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

Just Say—Saw your ad. in the Michigan Farmer when writing advertisers

Practical Science.

CANNED FOODS.

BY FLOYD W. ROBISON.

In no line of food manufacture has the effect of food law administration been so noticeable as in the condition of the canned food industries in this country. Very much has been written in the public press detrimental to canned food which was by no means warranted by the actual facts in the case. On the other hand, some of the real evils of the canned foods industry have been by no means understood by the public and it has taken the closest scrutiny and the most rigid application of sanitary rules and regulations to secure the abolition of the many evil conditions existing.

Canning Factories Maintain a High Standard of Sanitation.

It is a pleasure to be able to state at the present time that there is no food industry in the country in which sanitary control and sanitary efficiency plays such an important part as in the canning of food products. Sensational writers have drawn pictures for us which have been exploited in the magazines and in the public press showing the manifold evil conditions which existed in the cannery. Many of these lurid statements have been actually substantiated by my own personal investigations. It has been only within the last comparatively few years that these conditions have been abolished. A rather careful scrutiny recently conducted of conditions in a locality where the above mentioned undesirable conditions existed has revealed a complete revolution in the methods of handling foods used for canning. The installation of mechanical devices for washing, steaming and handling food products has had much to do with the great improvement in the conditions which now exist. Probably the best example may be shown by a somewhat critical study of the conditions in a tomato cannery.

How Tomatoes are Handled in a Modern Factory.

Tomatoes are an exceedingly perishable article of food and must be handled at the exact time they are ready for deterioration is very rapid indeed. Not only this, but the fruit as it grows on the tomato vines becomes covered with dirt and dust; there are cracks and crevices which permit the inroads of bacteria and molds, and any process which may be considered at all commercial is tried to the utmost to prepare this food in a condition fit for canning. Of course, there is a very great difference in canning factories that exist today, but on the whole there is no tomato pulp prepared at the present time which is anywhere nearly as bad as the major portion of the pulp of a few years ago. Food inspection methods at the factory and the more rigid attention to these products by the government inspectors and laboratories, coupled with a demand from the public for clean canned foods, is responsible for the marked change that has taken place.

At the present time a modern canning factory proceeds substantially as follows in the preparation of tomato pulp for the various manufacturing processes to which it is put. The tomatoes which have been carefully selected in the field are delivered in baskets to the manufacturing plant. After inspection at the entry door the tomatoes are dumped into a mechanical conveyor and are carried along upon an open belt for preliminary inspection. This belt moves at the rate of perhaps 10 feet per minute and inspectors on either side of the belt have an opportunity to pick out as the conveyor passes before them the more

undesirable tomatoes. This belt then runs over a roller where they are worked in a spray of water and the tomatoes are dumped from this roller into a large vat of water probably 12 feet in length. They are allowed to remain in this water until all of the hard dirt is loosened, when they are then drawn up at the further end of the belt or conveyor and passed under a strong spray of water which very thoroughly and quite effectively washes and removes any filth which may have passed through the washing vat. The tomatoes are now dumped onto another conveyor perhaps 25 to 30 feet long—in some instances this is extended—where they pass a more rigid inspection. Operators on each side of the conveyor have ample time to pick out the culls which passed through the first inspection. After this second inspection the tomatoes are again rinsed with a very forceful spray and are then carried up on an elevator to the cooking vat. Connected with this cooking vat is what is known as a cyclone, which removes the skins, the seeds and stems from the cooked pulp. This pulp is then carried through a glass-lined tube terminating in the vat in which the concentration takes place. It is then boiled down to the proper consistency and placed in sterile cans which are then sealed and the cans again sterilized by an appropriate steam treatment.

Good Catsup has but few Bacteria Molds and Yeasts.

This process has made it possible to prepare tomato pulp comparatively free from bacteria with no evidence of yeasts or molds into what makes some of the better catsups upon the market. Against this condition which we have just outlined is the condition prevailing still in many factories which permit particularly the occurrence of molds in the finished product. The appearance of mold in the finished pulp can be accounted for only through one or both of two underlying causes. The first and most prevalent one is the insufficient washing and cleaning of the raw fruit; the second, is inadequate sterilization. It is very nearly impossible to ship tomato pulp in tank cars or even in barrels and have it arrive at its destination and await manufacture into tomato catsup and still be in a condition desirable for the purpose intended. Sometimes when tomato pulp is sterilized thoroughly and put into the tank cars while still very hot, if there is no delay in transit the product will arrive at the manufacturing plant still warm and not in bad condition but while this may happen once in a half-dozen similar instances, delay on the road and other opportunities for contamination have caused the product to deteriorate decidedly. The more careful factories hold that the method outlined above with the filling of the pulp into the small five-gallon cans with subsequent sealing and sterilizing is probably the only sure way of preserving the original condition of the pulp. Of course, it is possible to make catsup keep, even though it is not good, for sterilization will accomplish this result and many manufacturers argue that there can be no harm from a large number of bacteria, molds, and yeasts in a product because they are all inactive. This brings us to another point in our discussion, and that is, what is the significance of molds and yeasts and bacteria in tomato pulp.

(Continued next week).

Sold Them All.

Please stop my advertisement (20 grade Guernsey bred heifers for sale). I sold the last of them yesterday.—E. D. Jessop, Lansing, Mich.

Heating Pipes Are Needless

(Copyright 1915 by The Monitor Stove & Range Co.)

When you fit your house with the Caloric Pipeless Furnace. It fits immediately under the floor and the warmed air from its single register circulates through the entire house.

You can install this furnace almost as easily as a stove and you do not have your cellar littered with a labyrinth of pipes. There being no pipes in the cellar this is the one furnace that will not spoil produce. The



is designed on new principles and has desirable features that cannot be found elsewhere. It is guaranteed to save 35 per cent of your fuel. This great saving is effected by means of our ribbed firepot, and the fact that there are no pipes running through the house and cellar to waste heat. The ribs ad-

mit free air circulation which causes the coal to burn thoroughly. No clinkers to lose you money. These ribs prevent ashes from forming on the firepot and retarding heat radiation. The Caloric firepot has 600 square inches greater radiation than the average firepot.

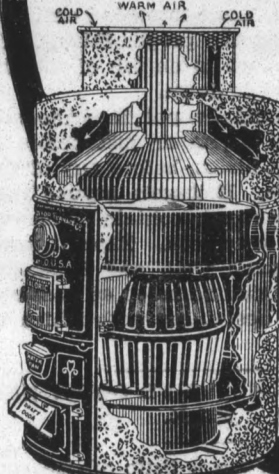
Install It Easily in Any House--Old or New

Nothing to do but cut one hole for a register. By digging a small pit you can even put the Caloric Pipeless Furnace in a house that has no cellar. It will burn coal, coke or wood. Bring city comforts to farm homes. Saves the labor of carrying fuel upstairs and ashes downstairs. The Caloric Pipeless Furnace lessens fire danger to house and children. It provides a healthful uniform heat for every room in the house.

Our Strong Guarantee

to prove our confidence. If the Caloric Pipeless Furnace is not entirely satisfactory we'll make it so any time within one year. If there is no dealer in your town to demonstrate this furnace write us for illustrated catalog.

The Monitor Stove & Range Co.,
206 Gest St., Cincinnati, O.

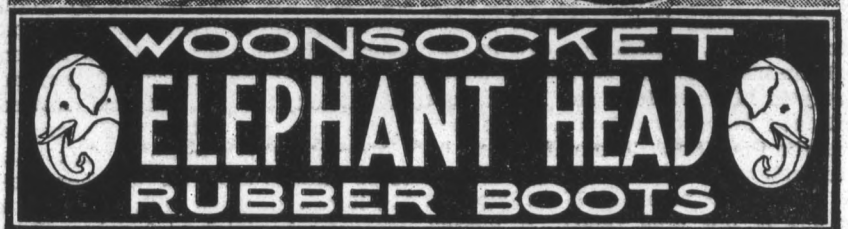


Cut Your Footwear Expense

Elephant Head Rubber Boots outlast the ordinary kind. You cut down footwear expense, because you buy less often.

Every seam and wearing point is reinforced. Made in all lengths. Always look for the Elephant's Head. Sold by square dealers.

WOONSOCKET RUBBER CO., Woonsocket, R. I.



Get The Best.

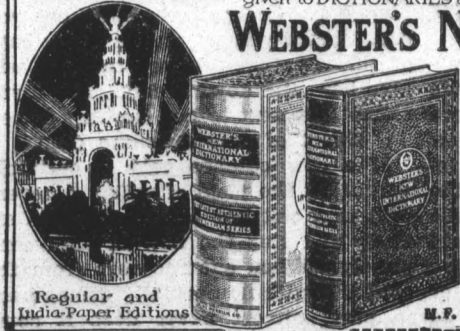
The Only Grand Prize (Highest Award) given to DICTIONARIES at the Panama-Pacific Exposition was granted to

WEBSTER'S NEW INTERNATIONAL

and the Merriam Series for Superiority of Educational Merit. This Supreme Authority contains a clear, concise, final answer to all kinds of puzzling questions. The type matter is equivalent to that of a 15-volume encyclopedia, a "Stroke of Genius." 400,000 Words. 2700 Pages. 6000 Illus.

G. & C. MERRIAM COMPANY, SPRINGFIELD, MASS., U. S. A.

Write for Specimen Pages and Free Pocket Maps



Regular and India-Paper Editions

Name _____

M.F. Address _____

Young Men On Farms:

Use your SPARE TIME selling AUTOMOBILE OIL, Separator Oil, Harvester Oils and Greases. Nearly every one of your friends has a car or uses Separator Oil, Harvester Oils and Greases. You can make from \$50.00 to \$150.00 per month. We will furnish you with sample case, and give you full information about our oil and selling talks that will help you. Address Dept. 8,

THE GLOBE REFINING CO., CLEVELAND, OHIO.

Auctioneers Firstst & Mokvacek. Our experience has proven success. If you have decided to quit farming, before billing your sale write for terms. Price reasonable, satisfaction guaranteed, live stock a specialty. Address Chas. Firstst, 478 Brush st. Detroit, Mich.

100 Apple trees only \$10 Now. Gobleville, Mich. Nurseries, Wholesale Dept. (Not in Nursery Trust.) Why wait and pay Trust prices? Write Sunday!

Just Say—Saw your ad. in the Michigan Farmer when writing advertisers

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The **FARM BOY**
and **GIRL**
SCIENTIFIC and
MECHANICAL

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

MINK are not strictly "water animals though they follow water courses as guides. Therefore, along creeks will be found the most successful course in which to set traps. There is a good profit in trapping for mink, and since they are a great enemy of the farmer, he in particular should desire to get rid of the "king of the chicken killers."

Mink are fond of such bait as fish, rabbit, squirrel, birds, mice and rats. They will eat the carcass of muskrat, but the other meats are best. Minks are not large, but quite strong. Some have used the number "O" trap with

Trapping the Mink

By EARLE W. GAGE

success, but trappers state that the number "1" is best all around trap. As a certain scent will attract mink, it is best to use a number of different type of traps, such as steel traps, both bait and blind sets, as well as deadfalls.

The trapping season for mink for the northern trappers opens about November 1, and continues until Febru-

ary 15, or until winter opens to spring weather.

After the trapper has become accustomed to the traits of mink, they are easy to trap. If you should find where he has left his burrow do not take the trap away, for he will return in a few days. When finding a place where the mink has laid up for a rest, do not trap on the trail he has already trav-

eled, for when he comes out he will be sure to go straight on just as if his journey had not been interrupted; so set the traps and bait accordingly and when he comes out he will be very hungry and will bite your bait.

Minks are not as original as some animals. They are in the habit of traveling same courses day after day, as between two swamps, and thus they make a well-defined runway through the snow or grass. This makes it easy for the trapper in snowy weather. In swimming from one side of a stream to another, they are sure to land in the identical spot each time,

WORLD EVENTS IN PICTURES



Mrs. Norman Galt, whose Engagement to President Wilson is Announced.



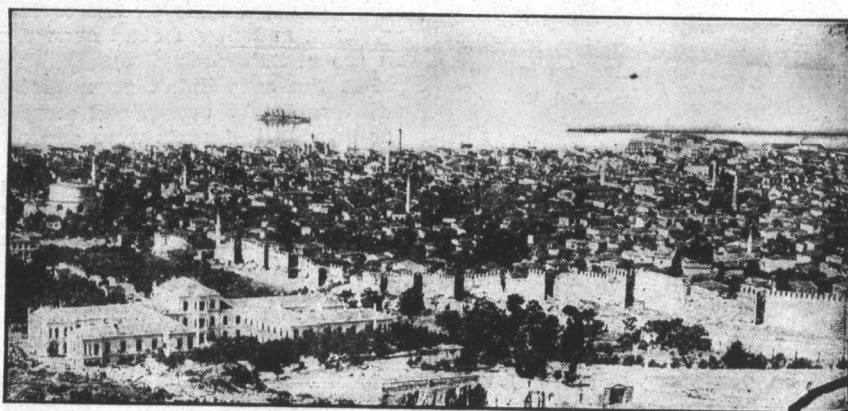
Bulgarian Transport and Convoy of Infantrymen Near Serbian Border.



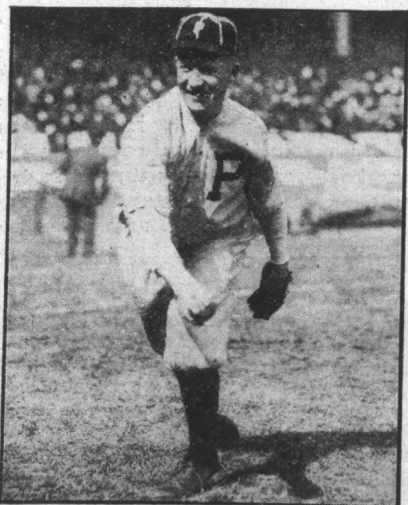
This New Hat has a Chic Air Despite its Simple Lines.



Panama Canal Almost Completely Blocked by Successive Land Slides North of Gold Hill.



Salonika, the Grecian Port on the Aegean Sea where the Allies have Landed Troops to Strike at Bulgaria.



Pitcher Alexander was Unnecessarily Feared by the Red Sox.



The U. S. Naval Advisory Board Composed of America's Most Noted Inventors and Scientists.



Ex-President Taft Feels Obligated to Work Hard on the Golf Links.

which makes it easy to catch them on landing.

Minks are able to scent iron traps. The traps should be boiled in ashes, and kept clean and dry and there is every chance of making good with the traps. For shy animals never use bait of any kind, but set the traps where they are sure to go, and you will be able to catch the shyest mink. The places where mink are sure to go are into holes, dens, hollow stumps and logs, and to make a success the traps should be set at all the places. The most successful trappers have covered the traps with feathers. The mink, seeing these and scenting what he supposes to be a weasel, will dig up the whole works. He is trapped ere he is aware of the presence of an enemy.

Mink trapping, like any other following, is not interesting unless it be paying. In most regions there are a sufficient number of the animals to make it worth while. Along one creek, for instance, five different men were trapping. Each one got as many as four hides per morning, while one of the number brought in 13 hides in one day.

The fur is not saleable before the middle of November in the latitude north of Iowa. It would be a waste

of time to worry and fret the animals before this date.

When you see signs of mink set the traps as near the water's edge as possible, whether ditch, spring or creek. Make a steep bank a foot or more high. Here dig a hole in the bank six to eight inches inward and low enough to let the water flow in. Get a forked stick, cut off one fork about one inch long, the other six to eight inches long. Sharpen the end of the long fork and run it through the bait, which is fresh, up to the fork. The bait is now fastened on the stick and run it into the bank back as far in the hole as possible.

The first mink to happen along will be sure to find it. Therefore, set the trap near the entrance, but always in the current of the water. Take weeds or sticks, say a foot in length, stick these in the mud, making a fenced lane so that the mink will be obliged to pass over the trap in order to get the bait. This is an old trick in trapping mink. It was first instituted by the Indians. It has caught more mink than most of the other common traps with mink. The best advice to young trappers is not to set the line of traps where you think a mink may go, but to set it where you know he is going.

Land O' Nod Stories.

By HOWARD T. KNAPP.

The Blades of Grass Were as Trees to Billy.

AS Billy Be Bo By Bum swallow-brew Tinker Teedle Tee had ed the last drop of the magic prepared, the merry little elf flew around his head seven times singing, Riggety, Jiggety, Wiggety, Fig., Big is little and little is big; Queen o' the fairies heed my call, Make Billy Be By Bo Bum very, very small.

Then he tapped Billy lightly on the head with his magic wand and flew around him seven more times. As Tinker completed the last circle, Billy felt a funny, prickly feeling run up and down his back. And then what do you suppose happened? Everything about him seemed to be growing bigger and bigger. A daisy, nodding at his feet, suddenly shot up in the air, growing taller and taller until Billy had to bend his head back until his neck ached before he could see the top. In the twinkling of an eye, a stalk of golden rod had become a gigantic tree, and even the blades of grass were way above his head.

The truth of the matter was that Billy was getting smaller and smaller. He shrunk and shrunk until at last he was no larger than Tinker Teedle Tee, and he, you know, was only about as big as a minute. Billy was rather frightened at first and had just about made up his mind to cry when he saw the elf, all doubled up with glee, laughing and chuckling until it seemed as though his sides must surely burst. So Billy laughed, too, and forgot all about being scared.

"Gee, willikins, but I feel funny," said Billy, climbing over several twigs no larger than match sticks and sitting down on a pebble that a minute before he could have put in his vest pocket and never have known it was there. "At first I was afraid I was going to keep right on getting smaller and smaller until there wasn't anything left of me but a grease spot. And how you have grown Tinker. Why only a few minutes ago you were so small you could sit on my thumb, but now you are as large as me."

"I am exactly the same size as I was before," laughed the elf, "only you have been growing smaller. But you will soon get used to it. Now it's

time to set out for Antland, so come along."

Billy had grown so small the grass and weeds looked like trees, the oat field had become a great forest and the hundreds of ants swarming over the ground seemed as large as horses. As for the cookie, it had become an island of cake many times thicker than Billy was tall, and so large that it took Billy several minutes to walk around it.

"This certainly does beat me," said Billy after he had tried to climb to the top of the cookie and had tumbled onto the ground. "Only a few minutes ago I was carrying this cookie in my hand and now I can't even climb on top of it."

But the ants didn't seem to have any trouble, for scores and scores of the busy little insects were swarming over the cake, tugging and biting at it until they tore off a piece which they pulled to the ground and dragged off through the grass. It was not easy work, for the cookie crumbs had to be lifted over many twigs and sticks and stones that were scattered about on the ground. Sometimes an ant would try to go between two blades of grass but the cookie crumb it was carrying would catch on the stalks. Then it would back out and try some other way.

"Where are they taking the cookie crumbs?" asked Billy.

"Suppose we follow and find out," suggested Tinker. "Careful now, and watch where you are going," he warned as Billy plunged pell mell into the grass forest. "The first thing you know you will be tripping over a tree trunk and breaking your neck."

"I don't see any tree trunks around here," replied Billy.

"Call them blades of grass then," replied Tinker, "but remember that a little twig is as big to you now as a tree trunk was before you drank my magic brew," and before he had gone very far in the grass forest, Billy was having as hard a time scrambling over twigs and daisy stalks and pebbles as he had ever had in the thickest sure 'nough woods.

And next week I'll tell you about the road to Antland.

Experiments with Plants

By ALONZO L. RICE

PLANT life affords ample opportunity for many pleasing and instructive experiments.

It is the nature of all plants to rise and to seek the light. It may be well to place special emphasis on the words "to rise" and "to seek the light." Plants want to "come up," which is clearly set forth in the following experiment: A gentleman sowed a quantity of beans with their eyes placed in different directions, in a tub, which he afterwards inverted, so that the bottom was turned uppermost, while the mold was prevented from falling out by a fine net. And, in order that the under surface might possess a stimulus of light and heat superior to the upper, he placed looking-glasses around the mouth of the tub in such a way that a much stronger light was reflected upon the inverted mold than that of the direct rays of the sun; while at the same time he covered the bottom of the tub with straw and mats to prevent the mold in this direction from being affected by solar influence. Yet the same instinctive law of ascent prevailed. After waiting a considerable length of time, and perceiving no shoots had protruded through the lower surface of the mold, he examined the contents of the tub, and found that they had all equally pressed upward, and were making their way through the long column of mold above them, towards the reversed bottom of the vessel; and that when the eyes had been placed toward the fine net the young shoots turned in the opposite direction.

As one experiment leads to another he determined to try placing seed of the same kind in a tub to which a rotary motion was given so that every part of it might be equally and alternately uppermost, and the seeds should have no advantage in one direction over another. Here, as we often behold in other cases, the instinctive principle was baffled by a superior power, and the different shoots instead of ever turning round, uniformly adhered to a straight line, except where they met with a pebble or any other resistance, when they made

a curve to avoid such obstruction, and then resumed a straight line in the direction into which they were thrown without ever endeavoring to return to the original path.

Thus much for light. Now in regard to moisture, without which scarcely any plant can live.

It has been ascertained that a sunflower three feet high transmits in twelve hours one pound and four ounces of fluid; that as soon as the dew falls it suspends evaporation and absorbs two or three ounces of dew. An inverted glass vessel, of the capacity of twenty cubic inches, was placed over grass which had been cut during a very hot day, after many weeks without rain, and vapor filled the glass in two minutes, and trickled down the sides in drops. On this has been based an estimate, showing that an acre of grass land transpires, in twenty-four hours, not fewer than 6,400 quarts of water.

The great absorbing qualities of plants are nicely set forth in this interesting experiment. Two hundred pounds of earth were dried in an oven, and afterwards put into an earthen vessel; the vessel was then moistened with soft water, and a willow tree weighing five pounds was placed therein. During the space of five years, the earth was carefully watered with rain water or pure water. The willow grew and flourished, and, to prevent the earth being mixed with fresh earth, or dust blown into it by the winds, it was covered with a metal plate perforated with a great number of small holes, suitable for the admission of air. After growing in the earth for five years the willow tree was removed, and found to weigh one hundred and sixty-nine pounds. The leaves which fell from the tree every autumn were not included in the weight. The earth was removed from the vessel, again dried in the oven, and afterwards weighed; it was discovered to have lost about two ounces of its original weight. Thus one hundred and sixty-four pounds of woody fiber, bark, etc., were certainly produced from the air.

Most Men Shun Facts

By DR. L. K. HIRSHBERG.

IT is perhaps correct to say that even the sane are often insane; it all hinges on knowledge, and what are facts.

A man of knowledge is stronger than Titan, Hercules or Willard. The popular fallacy, however, that knowledge is only available to those "who can afford it" is silly. Knowledge is available to all men and women, as well to those who stop school at the fifth and sixth grades, as to those who have university degrees galore.

Knowledge means the aggregation and collection of facts either in your thoughts and on the tablets of memory, or near at hand, where you find them, should you need them.

There are no insurmountable difficulties in the acquisition of knowledge. Only one essential is called for, for instance, inclination.

You may not realize it, but the wish to acquire knowledge is eternal in children, and almost eternally absent after the twelfth to fourteenth year. Why does it disappear?

What is the physiological and psychological explanation of this adult abhorrence, so often present even as a form of ingrained obstinacy? At first blush, Jim Smith whom we accuse of this, will deny it. He will say: "I read the headlines in the paper and several magazines and I am trying to obtain knowledge all the time wherever I am." But is he?

True enough, he will seek some

kinds of knowledge, but he hates and shuns facts which might awaken him from numberless prejudices, cults, theories, and superstitions—the accumulation of inaccurate observation, superficial reading, partial memory, and humdrum noisy repetition.

It is not only ignorant, unlettered and unschooled persons who dislike knowledge constitutionally. Doctors, editors, governors, office holders, clergymen, financiers, and others more or less successful in a set way, are particularly disdainful of more facts than they already have.

Juvenal said that from heaven descended the precept, "Know thyself." This inscription was chiseled upon the temple of Apollo at Memphis, and Apollo, Chilo, Plato, Socrates, Thales are each given credit by many writers for its origin. It was coupled with the platitude, "To know thyself is difficult, to give advice easy." This, to be sure, applies to me, as well as to you. At least, I try to keep it always in thought.

Learning itself, received into a mind, by nature weak, or viciously inclined, serves but to lead philosophers astray. Where children would with ease discern the way.

The answer to the question, "Why do men and women shun knowledge?" rests upon the fact that they mistake idle thoughts, vain mental vaporings, guesses unfounded and confounded, and mere opinions with knowledge.

(Continued on page 365)

Holland Farmers are Progressive

By WM. B. HATCH, Michigan Member of American Commission.

PASSING from Belgium into Holland one is immediately reminded that he has arrived in the country of black and white cattle, windmills and wooden shoes. Americans naturally like the Dutch. They seem to have been always friendly. The thrift of the Dutchmen is noticeable on every hand. He, however, borrowed his co-operative finance from Germany and went to Denmark to see it applied in agriculture, especially dairying, then came home and inaugurated it throughout The Netherlands.

Michigan is nearly five times as large as Holland though Holland has nearly twice the population of Michigan. One of the co-operative enter-

prises which first challenged the attention of the Commission was in a suburb of The Hague. It was a co-operative vegetable auction market. The Hollanders are great gardeners as well as great dairymen. They not simply follow intensive methods in producing large crops of vegetables, bulbs and flowers in the usual way but they are large growers under glass. Grapes as large as a shucked walnut and peaches are profitably raised in this way and find a ready market in London and New York at a long price. The co-operative auction differs from anything we saw elsewhere. While there are splendid roads in Holland the impression you naturally get in going about is that the roads in Holland are canals. The canal fur-



One of the Many Co-operative Creameries in Holland.

to bid, he presses a button which is attached to his seat and connected to the dial machinery. This quietly completes the sale to him of that boat load. Clerks record it in the records of the association and also quickly enter it in the book belonging to the farmer who consigned that boat load. The book is thrown onto the deck of the boat and the boat passes out and another boat follows, making an almost continuous procession. The purchaser goes outside and settles with another member of the co-operative organization and takes his produce away. The seats are assigned to certain persons or representatives and they always occupy their own seats, which is known by number. The farmer simply comes down town once a

week or at his pleasure, goes into the office of the organization of which he is a member, and gets his money. It is possible in this way to make a satisfactory sale of every bit of produce raised. The view of some of the canal boats just before the auction illustrates a variety of long cucumbers. It is said that several carloads of these cucumbers went to Germany from this sale that evening, arriving there the next day. It is claimed that the Dutch Friesian cattle have been bred up as the practically exclusive breed in The Netherlands for a thousand years. The meadows or grass lands are largely below sea level and are probably the best examples of rich grazing land in the world. One of the commissioners see



How the Hollander Ensiles Grass for Winter Feeding.

nishes a ramifying system of transportation. It is astonishing how skillfully a man who knows how can handle one of those Dutch canal boats. The farmer remains on his acres supervising the most important part of his work. The hired man takes the boat load of vegetables and goes down one of the many canals which converge at the auction market. Here is a substantial brick building with a slate roof constructed over one of the canals. The farmers who have organized themselves on a co-operative basis built this building and have paid for it.

A committee inspects each boatload of vegetables before the auction sale begins. The farmer who sends the vegetables to market has a record

Guarantee
We guarantee Hanes Underwear absolutely—every thread, stitch and button. We further guarantee to return your money or give you a new garment if any seam breaks on any piece of Hanes Underwear.

"Cold? I should worry"

Save Half Your Underwear Money—Look at these Extras!

Why pay one cent more, when you can buy this soft, smooth, fleecy-warm winter underwear at only 50c a garment or \$1.00 per union suit? This is great stuff, men! Substantial heavy-weight underwear—the kind that will keep the body heat in and the cold winter air out. Look at these extras—and not a penny extra for you to pay. Read them all, then go and see the Hanes dealer in your town and lay in a good winter supply of

50c per Garment **HANES** \$1.00 per Union Suit

ELASTIC KNIT UNDERWEAR

Hanes Union Suits have a closed crotch, pearl buttons, an elastic shoulder with improved lap seam which keeps the sleeve in place and affords ample room without binding. Form-fitting anklets prevent the wind whistling up your legs. Just as big value in the single garment. For instance, they have an elastic collarette that snugly fits the neck. Pearl buttons. Improved cuffs that hug the wrist and won't flare out. Staunch waistband, stoutly stitched and well finished.

And every garment and suit is sold under a positive guarantee that every Hanes seam is unbreakable. Read our guarantee above. Hanes winter underwear is sold by most dealers. If not at yours, write us.

HANES

Buy none without it

Warning to the Trade
Any garment offered as "Hanes" is a substitute unless it bears the "Hanes" label.

P. H. HANES KNITTING CO., Winston-Salem, N. C.

For your winter's comfort get a

Summit Knit-Nek Vest

Designed especially for the man who must be outdoors during the cold, windy days of winter.

You simply can't get cold in one of these strong, light weight, cold-proof garments.

Made to keep you warm where you need it most—at the throat and the wrists.

You can see how effectively the patented Knit-Nek fits around the throat, keeping out the cold and wind.

The wool wristlets do the same to your arms.

The leather lined body and leather sleeves are great cold resisting features.

Why not get one of these comfortable garments?

Write today for our interesting style book and give your dealer's name.



GUITERMAN BROS., Maker 360 Sibley St., St. Paul, Minn.

KEEP YOUR MONEY SAFE BUT KEEP IT WORKING

Safety for your surplus funds is, of course the first and greatest consideration, but to secure safety you do not need to sacrifice income.

You can obtain both of these necessary features by purchasing **4% TO 6% MUNICIPAL BONDS**

many of which are tax free. The bonds are in denominations of \$100, \$500 and \$1,000 and can be bought either for cash or on easy payments. Send us your name and address for our interesting free booklet "Bonds of Our Country."

BOND DEPARTMENT
THE NEW FIRST NATIONAL BANK, Columbus, O.

When Writing to advertisers please mention The Michigan Farmer.

The red-striped PRESIDENT ticket guarantees you satisfaction or money back.

Good, old, trusty friends to clothes and shoulders too—the real, original

Shirley President Suspenders

50¢

PRESIDENT and the buckle makes you sure of getting the kind you've always worn.

No imitation gives you such free, easy shoulders, such comfort, style and service. Get PRESIDENTS—the kind you've always worn. Make sure by looking for PRESIDENT on the buckles. It's on the red-striped "money-back" tickets, too. The cleverest counterfeiter can't fool you if you just

Remember PRESIDENT!
PRESIDENT SUSPENDER CO. SHIRLEY, MASS.

Look for  on the Buckle

Santa Fe Farmers' Tour of California Farms & Fairs Nov. 4th

Leave Chicago 10:30 P. M. Thursday, Nov. 4th and Kansas City 10:45 A. M. Friday, Nov. 5th.

Same itinerary as our previous Tour which left Chicago Oct. 14th.

Stops will be made at Grand Canyon of Arizona, San Diego Exposition and many points of Southern California and San Joaquin Valley where you will be guests of local communities on auto trips to see the farms and orchards.

Low cost trip covering California's farms and two fairs for one fare. Party reaches San Francisco Exposition Nov. 19th. Tickets good for return to Dec. 31st.

This is the last Farmers' party. Make reservations at once.

Write

C. L. Seagraves, Gen. Colonization Agt., AT&SF Ry. 2564 Ry. Exch. Bldg., Chicago

DON'T Put Your NEW CORN Into a RAT House

Ordinary wood cribs harbor rats, mice and other vermin which destroy thousands of bushels of corn every year. These pests are disease carriers as well as robbers. Starve them out and save your corn by putting up

Marshall's Iron Corn Cribs

These cribs cost no more than wood—last a life-time. Made of rust-proof, perforated, galvanized iron. Come in sections. Easily put up.

FIRE-PROOF—RAT-PROOF

Lightning proof, weather proof, bird-proof, thief proof, Marshall's Crib gives perfect protection—cure corn better, keep drier; free from mould; prevents germinating in crib. Round or Shed styles. Many sizes. \$47.50 and up—freight paid. Write for Free catalog. Box 100

Iron Crib & Bin Co. Wooster, O.

Prompt Shipment Guaranteed

Boston Garter

FOR MEN

GEORGE FROST CO. BOSTON, U.S.A.

Sample Pair Silk 50" Lisle 25"

The BEST Light

The problems of adequate illumination vanish when you install a "Best" Light system. More than 200 styles are pictured in our catalog—every one of them guaranteed to give a clear, radiant white light at lower cost than any other illumination you can use. Agents wanted.

THE BEST LIGHT CO. 280 East 5th St., Canton, O.

ing some white clover growing in the pasture asked the farmer who was showing us over his farm and showing his herd of cattle, how often the land had to be reseeded. The farmer replied that he presumed it had never been reseeded for 1,000 years. They do not raise corn. They pasture one season and mow the next. The cut showing the Holland silo is, of course, a scheme for siloing green grass and they claim this is very satisfactory. The view of the meadow, with the typical Holstein cow in the midst of it shows land which was being rented at \$60 an acre per annum. This farmer and his two sons had rented it at that rate for a number of years and were very well satisfied with the price they were paying. They were large exporters of Dutch Friesian cattle and were carrying 200 head on 175 acres. An adjoining farmer had a few little knolls in his meadows. A little narrow gauge railroad had been run into one of them and little steel cars holding a cubic yard or two were being used to convey this mound dirt away as fertilizer. This farmer had sold twenty thousand dollars worth of it, and had in all one hundred and fifty thousand dollars worth to sell. He simply cut and lifted the sod and as the knoll was leveled placed the sod back in place and in a year or two his land

but because the local minister or priest naturally has the confidence of the large part of the community and furthermore he has the education and training to make him an efficient helper. He serves without pay, often keeping the books for the local organization until someone else is trained to relieve him of this work. It undoubtedly aids the minister in ministering spiritually to thus get better acquainted with and on more familiar terms of appreciation with the members of his church and the community. It, of course, also aids indirectly in promoting financial support for the church in proportion as the members and friends of the church become more thrifty and prosperous. It is believed that the clergy in America can well help in such organization in the back districts at least.

Land Credit.

A large part of the savings deposits are invested in long term mortgages and mortgage banks have been organized for this kind of credit. The mortgage bank of Eindhoven, for example, has a capital of \$500,000, \$100,000 of which was subscribed by the Central and Local Savings Banks. As a rule mortgages are not issued for more than fifty per cent of the assessed valuation of the land, but where the local savings bank is willing to endorse



Dutch Friesian Cow in her Native Pasture which has not been Reseeded for a Thousand Years and Rents at \$60 an Acre Per Annum.

was as good as ever. Needless to say, this farmer owned his own farm. While removing this rich deposit a considerable number of pieces of ancient pottery were unearthed.

While riding on the cars in this vicinity, which is in the Province of Friesland my attention was challenged to the large number of cows pasturing in the fields. I counted from the car window on one side of the train while running for five minutes at probably not over thirty miles an hour, four hundred of these attractive black and white cattle. This prompted the inquiry as to the number of cattle in this little province. The statistics gave the number of cows and bulls at 306,574. At Leuwarden, the capital of this province, under the shade of the trees in the park is maintained a cattle auction market. Here is regularly held auctions of Dutch Friesian cattle; sometimes as many as 3,000 cows may be seen here for sale at a single auction. The cuts of the typical Dutch Friesian cow is of interest to those raising these cattle in this country, especially those who have followed the "more light than dark" fad. The type which the Dutch who originated the breed adhere to still does not encourage the predominance of white, nor the multiplying of small spots in place of large patches of black and white.

Agricultural Credit.

The credit side or co-operative finance was recognized in Holland the same as in other European countries as an indispensable accompaniment of any comprehensive system of promoting agriculture. In Holland as in most of the European countries the clergy aid in this organization, not seemingly to link the church with it,

the mortgage the amount may be raised to sixty-six per cent. The mortgagor being obliged to pay in, at least, one per cent of the principal annually, but also having the privilege of lifting any part or all of the mortgage at any time. The rate of interest is 4.25 per cent, including .25 per cent expenses of administration; no commissions and only the most necessary expenses, such as taxes and postage, are incurred. Most of the local banks pay interest on deposit of three per cent. The interest charged for loans is generally one per cent higher than that paid to depositors; it varies from 3.75 to 4.5. The state only puts yearly a relatively small sum at the disposal of the banks to meet the expenses of inspection of the local banks and of the central banks themselves and of an accountant appointed by the government. It does not supply capital. The goal toward which Holland is working is "a peasants' bank in every village."

In the domain of co-operative sale and distribution, naturally societies for the disposal of fruit, vegetables and dairy products are the most numerous. There are about one hundred co-operative societies for the disposal of fruit and vegetables alone in The Netherlands. A large export trade is thus promoted and maintained.

The Hollander is also well organized co-operatively for the purchase of his necessary supplies, such as feed-stuffs for his stock and the necessary requirements of his family. He does not buy balanced ration feeds mixed what he wants. He buys what he wants in the natural state and balances his own rations. In this way he knows what he is feeding and how much. He buys shelled corn and oth-

er grains in America and in the Argentine and grinds it in his own mills in Holland. He buys shiploads of oil cake and other protein feeds from America and prepares and mixes these in Holland and feeds them there to further enrich Holland soil and further deplete the fertility of American acres. Then he takes the manufactured product and ships it to other countries, much of it coming back to America. This little thrifty country has redeemed most of its limited area from the North Sea by dykes. The Zuyder Zee, as you will recall, extends from the North Sea down into Holland like a great human stomach. These courageous and thrifty Hollanders now propose to put a dyke across the oesophagus inlet from the North Sea and thus redeem this large area to agriculture. The state recognizes agriculture more nearly in the spirit in which it ought to be recognized and promoted, hence it has made rapid strides in the last few years, and promises a continuance in the future. The lesson for America from Holland is that Holland thrift and organization realized here would make American agriculture the peer of any in the world. Both should go together and both are lacking now, when we compare efficiency.

THE FARM HOUSE CELLAR.

When building the new home or remodeling the old home one should provide cellar room under the whole house. For years we lamented the lack of cellar room and finally were forced to excavate under the remainder of the house. This is a rather disagreeable task, but a paying investment. The farmer needs every bit of cellar room obtainable for the storage of vegetables, fruits, etc.

It is best to have the cellar divided into three individual parts all connected with good doors. The supply of winter vegetables and fruits can be kept in one along one side of which is located a tank for a water pressure system. The cool tank aids in lowering the temperature of the room in summer.

Room ought to be provided for a furnace whether one anticipates putting one in or not. Some day the owner will want a furnace and room for fuel. The even flow of heat under the house warms the floors and contributes materially to fuel economy. It is well to make the furnace room long, but that is all a matter of preference and depends somewhat on the plan of the house. Provide access for daylight in all the rooms if it is possible to do so. Window shades or shutters will serve to keep them darkened when necessary. The majority of cellars are as dark as dungeons, which is really a very objectionable feature. Daylight and fresh air are necessary in cellar rooms, being conducive to cleanliness and a healthful atmosphere.

Ventilation in the cellar is of vital importance. An unventilated cellar becomes damp and clammy and odors forming in it ascend to the rooms above and are conducive to rot in vegetables and fruits and mold in jellies. The bottom of the cellar should be high enough to provide good drainage under it. Two parallel six-inch drain tile eight feet apart, with openings filled with coarse gravel or stone every few feet, should be put about four inches under the floor. By keeping the floor dry the atmosphere retains just that degree of moisture which preserves stored stuff without causing it to mold or give off offensive odors.

A seven-foot cellar is about the right height for all general purposes. All the doors should be wide, really wider than those ordinarily found in the average home. The entrance is best made long to facilitate the handling of boxes barrels, etc. Entrance should be provided to the cellar from both outside and inside the house, with

concrete steps which are permanent and secure. A stairway with a sharp incline is dangerous and cramping it into small space does not pay.

Digging the cellar after the house is built is an undertaking that should be under the supervision of a man skilled in that class of work. Mistakes are very expensive here. If the foundation is not removed and rebuilt to the bottom of the cellar a retaining wall will have to be built against the inside to support the old foundation, and as his masonry will extend in a foot or more on all sides it will reduce the size of the room considerably.

Indiana. J. L. J.

MOST MEN SHUN FACTS.

(Continued from page 362).

Juries at times are unable to disentangle an insane person from one full of wild guesses, theories and vain imaginings.

Yet a simple test shows that the former has knowledge and deludes himself, while the latter simply rejects the knowledge and the facts, which go counter to his emotions and his third floor back musings. Often the latter band themselves into groups, cults, societies, reforms, and new religions. The insane act for themselves alone.

Knowledge is merely the conformity of the outer world with the inner man and his mind. Faddists simply top off the world as it actually is, independent of themselves, and are quite content with their own vaporings, quotations, antiquities, half-facts, and sentiments.

In deference to the senses, which the Creator bestowed upon man for the purpose of getting at facts, it must be acknowledged that there are lots of facts pleasant and unpleasant, which will inevitably make their way into the mind willy-nilly.

Frankly, most people are not fools enough to resist this knocking of the real world at the door of the mental world. The human spirit, the intellect, can only grow on what it feeds from its facts of reality.

Your common sense was created to tell you that something exists apart from you.

MARKING A HALF CENTURY.

(Continued from page 357).

into the county, the machine using wire instead of twine to bind the bundles.

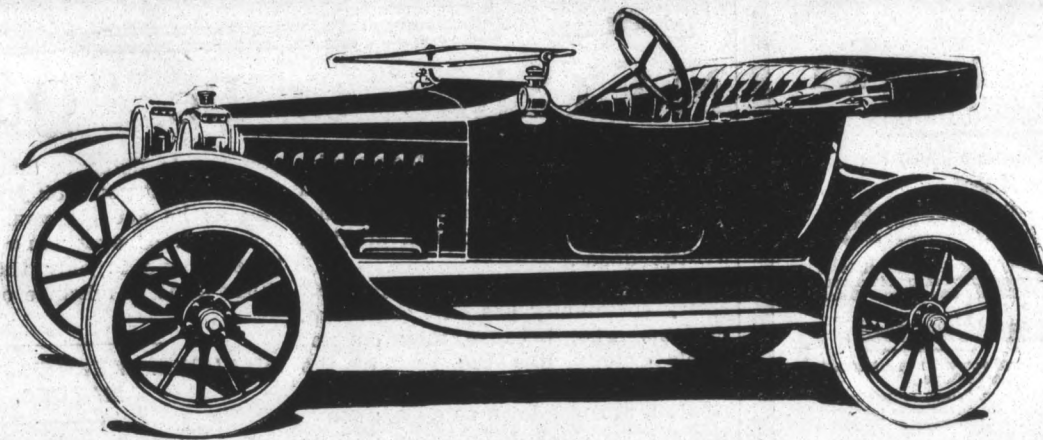
Two of his sons are engaged in the business of farming and breeding pure-bred live stock. One of the regrets of Mr. DeGarmo's life has been that he could not interest more young men with whom he came in contact in the breeding of pure-bred live stock. Perhaps a review of this brief story may inspire many of the younger generation of Michigan Farmer readers to interest themselves in some department of this line of agricultural effort and advancement, taking advantage of the opportunity to build upon the foundation which the veteran patrons of our pure-bred flocks and herds have laid for them.

MICHIGAN VICTORIOUS.

BY JOHN C. WRIGHT.
Michigan, the glorious,
Is again victorious,
Smiles and gleans,
Getting means
From its beans!
Plenty room for more of us!
Crops are fine,
Tree and vine
Right in line—
How the showers pour for us!
Apple Jack,
Lips to smack,
Nuts to crack—
Heap 'em on the floor for us!
Pumpkin pie,
Cakes to try,
Cider—My!
All the things in store for us!
Come along,
Sing the song—
Sing it strong:
Life is not a bore to us;
Michigan, the glorious,
Is again victorious!

SAXON ROADSTER \$395

Costs less to run than horse and buggy



The only car under \$400 with these modern features

3 Speed sliding gear transmission
—used on all high priced automobiles.

Modern high speed motor
—provides flexibility, quietness and power to go anywhere.

Honeycomb radiator
—assures perfect cooling; finest type of radiator made.

Timken axles
—we know of no other axles so good.

Graceful, roomy, streamline body
—distinctive, stylish, classy.

Dry plate clutch
—\$2000 cars use the same type.

Vanadium steel cantilever springs
—easiest riding type of spring suspension.

Saxon is the only car selling at less than \$400 that is absolutely modern in design. Yet it contains no experimental features. There is nothing freakish about it. Saxon is a proved car. It has been tried in

the hands of many thousands of users, in engineer's tests, in public contests. Everywhere it has made good.

Because Saxon is light in weight and so well built, it gets over the roads—not through them. It goes anywhere any car can go and lots of places where big cars sink down in mud and sand, or have to turn back. Saxon is the ideal car for country use.

And don't overlook the Saxon virtue of economy. Saxon costs least to run of any car yet produced. It takes you long distances without filling up again on gasoline and oil. You don't have to be paying out money all the time for fuel. Half a cent a mile is the Saxon average for car operation—one-fourth of a cent per passenger.

Saxon dealers are everywhere. See one nearest you and have a Saxon ride. Dealer's name on request. Also copy of "Saxon Days" with information about the New Series Saxon Cars. Address Dept. 19.

New Series Saxon "Six" \$785

When you buy the New Series Saxon "Six" touring car, you get a roomy, powerful, comfortable 6-cylinder car for the whole family—fully equipped in every detail—the finest touring car value, dollar for dollar, that has yet been produced.

"Four" Roadster	\$395	"Six" Touring Car	\$785
With detachable Coupe top	455	With detachable Limousine top	935
Delivery Car	395	"Six" Roadster	785



Saxon Motor Company, Detroit

(170)



Service First

You do not buy shoes just for the sake of possessing the shoes, but for the service they will give you. It is service, not ownership you seek.

It is service we deliver when the workingman buys our

Rouge Rex Shoes

How do we do it? By the constant application of every faculty we have to the production of leather in our tannery that will stand the knocks that the workingman's shoes are sure to get, and by careful selection of all the other materials used by our factory in the production of the finished shoe.

Every shoe has a solid leather insole, counter and heel, and they are made over full,

roomy lasts that insure the utmost comfort to the wearer. No. 481 is our 16 inch tan Jersey Grain shoe with welt sole, bellows tongue, double toe cap.

Ask your dealer, or write us for descriptive book and nearest dealer's name

HIRTH-KRAUSE COMPANY
Hide to Shoe Tanners and Shoe Manufacturers
GRAND RAPIDS, MICHIGAN



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.

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.

maloney's TREES
Fruit and Ornamental trees, vines, shrubs, etc. for fall planting, in small or large lots at wholesale prices. Grown and guaranteed by the largest Nursery in New York. Write for free catalog. Maloney Bros. & Wells Co., Box 35, Danville, N. Y.

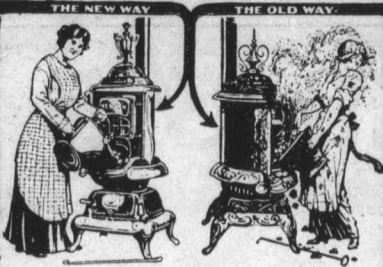
WINTER VETCH
NEW CROP MICHIGAN GROWN
YOUNG-RANDOLPH SEED CO., Owosso, Michigan

Hairy Vetch Seed For Sale
150 pound, \$8.00 bushel. Sacks free.
DORR D. BUELL, Elmira, Michigan.

VETCH AND MAMMOTH WANTED
also red alsike and timothy. Send samples and prices to O. M. SCOTT & SONS CO., 16 Main St., Marysville, Ohio.

WANTED—RYE and VETCH MIXTURE SEND SAMPLES FOR 1 ID TO YOUNG-RANDOLPH SEED CO., Owosso, Mich.

For Sale One New High-power Rifle, Remington slide action, 30-30 caliber, fine checkered stock with pistol grip and 40 rounds of ammunition, for \$16.00. Just the thing for Deer and Bear. Address A. L. Kern, No. 240 1/2 Bethune Ave., Detroit, Michigan.



Don't Feed a Soft Coal Fire Upside Down!

Feed it Downside Up by the Underfeed Method

It is the only way to avoid smoke, gas, dust, soot. The only way of feeding soft coal that doesn't smother the fire.

The Renown Underfeed principle is the only real improvement in stove-building for twenty-five years. Use a

Renown Underfeed

for soft coal and you will never tolerate any other soft coal stove.

For the Renown is not only cleaner but it positively saves you 25% in fuel. No doubt about it. It burns what others waste.

For durability and beauty of design Renown Ranges and Heaters are in a class by themselves and have more labor-saving devices than any other line on the market.

Get Catalog Now

Send for catalog showing complete line of stoves, ranges and heaters.

Independent Stove Co.

Owosso, Michigan
Established 1905



Getting Home at Night

When you get back home after dark and have to put up the horse—that's just one of the many times you'll find it mighty safe and convenient to light your way with an

EVEREADY FLASHLIGHT

a real necessity wherever there's darkness—a complete electric light that you can carry with you everywhere. Wind and rain can't put it out; it can't cause fires or explosions even if upset; it does away with all the danger and bother of matches or old fashioned oil lamps and lanterns.

Seventy-five styles to pick from, selling at 75c to \$7.50. No. 2632, illustrated, is nickel plated tubular light, 11-2x8-1-2 inches, and sells at \$1.75 in the U. S. and \$1.95 in Can.

Ask your dealer to show them to you and write us for complete illustrated Catalogue No. 43.

American Ever Ready Works of National Carbon Co.
Long Island City, New York

No. 2632



FREE!

—Just send me a post card with your name and address and I'll send you my big new buggy book with the most surprising, money saving announcement any manufacturer ever made. I'll show you how my sensational 6% Profit Offer has split prices on my famous Split Hickory buggies.

SPLIT HICKORY

—the niftiest, strongest and most stylish buggies that ever rolled over the road. 150 styles to choose from—all guaranteed and shipped on 30 days free road test. More than 200,000 now in use. Write for big free buggy book today. Special Part Wagon and Farming Catalogs also sent free on request.

H. C. Phelps, Pres.
THE OHIO CARRIAGE MFG. CO.
Station 53
Columbus, Ohio

\$39.25 and up

THE TURES LAMP



400 Candle Power of the finest, whitest, softest light at a cost of 1/4 cent per hour. Burns common gasoline—simple and safe—AGENTS can secure good territory and steady income selling the wonderful TURES Lighting Systems, Portable Lamps, Safety Lanterns and self-heating Sad Irons.

Write for catalogues, terms, etc.
TURES MFG. CO.
390 Sixth Street Milwaukee, Wis.

AN OPPORTUNITY

to represent a well established house (manufacturing Stock and Poultry Medicine) is open to first class men who have standing with farmers in their territory. No investment necessary. For further particulars address THE SAL-B-VIM CO., Inc., Painsburg, Pa.

Mention The Michigan Farmer When Writing Advertisers



Woman and Her Needs
At Home and Elsewhere

No Crime to Be "Queer"

WE all know the old Quaker who said to his wife, "All the world is queer except thee and me, and sometimes I think thou art just a little queer."

And we all know "queer people." Every community has one, some two, persons, who, because they do not think exactly like the rest of the neighborhood and act according to pattern, are put down as queer; sometimes even dubbed "a little off," or "cracked." Thinking contrary to the rest of your community is dangerous, for, of course, one could not be right and the rest all wrong.

There was a queer woman in our village when I was a child. She positively insisted upon having a white cloth for her table, when oilcloth was plenty good enough for anybody; and it was darkly rumored about that she used a napkin! She took three real magazines, besides the farm and the church papers and, not satisfied with the county paper, which told all the news anyone would want to know, she up and signed for a city daily. She had all kinds of books, not just the county atlas and a family Bible and Pilgrim's Progress. And the thing that made you most uncomfortable and that most surely marked her as not being just quite right, she actually talked about the things she read in those books. If a person was all right they could find enough to talk about in the crop situation and their neighbors' business, without reading up in books to make conversation. There was nothing for it, that woman was daffy.

We children used to stare at her in wholesome awe when she appeared on the streets. We shied away from all her attempts to make friends and could not be hired to go by her house alone after dark. She was left pretty much to herself with her books and magazines, though one or two bold and venturesome spirits did make friends with her and reported that she was "nice," even if she was queer.

As mysterious as Barrie's "Painted Lady" was to "Tommy" and "Grisel" was this "Queer" woman to us youngsters. Imagine our sensations when we grew up and got out into the big world outside and found out that the "queer" lady was the normal one in our community and the rest of the folks were the odd ones.

As a matter of fact, people are "queer" just in proportion as they differ from our own standards of living. Each little community has its own manners and customs, and the outsider coming in who does not conform to them is all too often made to feel his dereliction. We forget that the nature which decreed that no two leaves on the same tree should be exactly alike used the same rule in fashioning folks. And we who most loudly shout that the other fellow is "Queer" all too often are farthest removed from the general type.

It's a good thing we aren't all alike, that some of us are "queer." Nothing is so tiresome as sameness, and the "queer" one in the community could often do a heap of good if he got the chance. Many of his ideas would work a revolution if they were taken up instead of being sneered at because they are "different."

Give the "queer" one in your neighborhood a hearing. Even if you can't agree with all his ideas it won't hurt

you any to listen to them. And bear in mind that you look just as queer to him as he does to you. Ninety-nine cases out of every one hundred the "queer" one is only thought so because he is in advance of his fellows.

DEBORAH.

MILLICENT KEENE'S GREEN TOMATOES.

BY MRS. M. KENNEDY.

Few people seem to realize that the green tomato has even greater possibilities than the ripened article.

Green tomato mince pie is something rarely ever met with and has been pronounced the "best ever" by all who have partaken of it. To make, allow seven pounds of green tomatoes, chopped, to three pounds of brown sugar and one pound of raisins, one glass of apple or grape jelly, one-fourth cup of boiled cider and one pint of either canned currants or cherries. Add salt, pepper and spice to taste and a very little vinegar.

Green tomato sauce is made as follows: Add enough water to four pounds of sugar to make a heavy syrup, boil well and add two pounds of ripe grapes, and four pounds of green tomatoes cut in small pieces, add one small teaspoon of salt and boil one half hour, seal up.

To make green tomato preserves take seven pounds of sliced green tomatoes and cook up in very heavy, hot syrup made from four pounds of granulated sugar. Season with one-half teaspoon each of salt, ground allspice and cinnamon, also one tablespoon of mustard seed. Cook till thick and transparent, put in jelly glasses and cover with paraffin.

A green tomato chopped pickle that will keep in jars is made as follows: One peck of green tomatoes, chopped, sprinkled lightly with salt and let stand over night. In the morning, drain, add six large onions, six large green peppers, chopped, scald up in two quarts of water to one quart of vinegar, cooking about 20 minutes. Drain well and season with two table-spoons each of ground mustard, ginger, allspice and cinnamon. Add two pounds of brown sugar, one-half cup of white mustard seed and vinegar to taste. Pack in crocks, cover with a thin cloth, cotton batting and heavy paper, tied tightly.

For green tomato pickles, slice green tomatoes as thick as desired, scald up in salted water, drain carefully and cook a few at a time in syrup, made of four cups of sugar to every two cups of vinegar, seasoned with mixed spices to taste. Skim out into jars and boil syrup down and pour over them. These keep well without canning.

Green tomato pickles that are not so rich are made about the same, allowing three pounds of brown sugar and one cup of vinegar to seven pounds of sliced green tomatoes. Season with one-half teaspoon each of ground cinnamon, cloves and allspice, also one small red pepper. Place in cans and seal while hot.

A NEW PATCHWORK BLOCK.

BY ELLA L. LAMB.

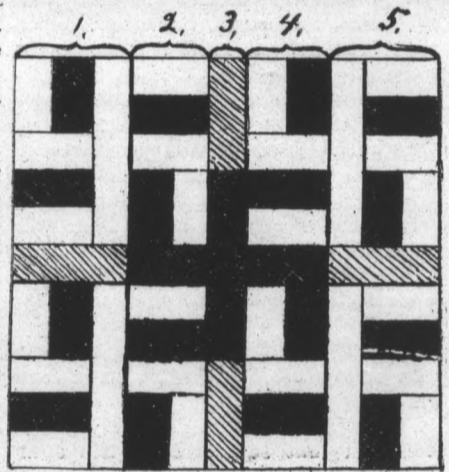
This ancient orinetal amulet of "good luck" may be developed in either silk, woolen or cotton material. In a quilt, either with alternating plain

and pieced blocks or sash work of strips the same width as those of the blocks, it is both handsome and striking; while one block of pieces an inch wide without seams allowed, finished with a border, makes a novel pillow cover.

To make the block, as illustrated, cut 51 pieces as follows, always allowing one-fourth inch on all edges for seams; four light strips, five times their width; one dark strip, five times its width; four strips, three times their width, of a neutral shade or like the material of the plain blocks or sash work, with which the blocks are to be set together; 18 dark strips, twice their width and 24 light strips, also twice their width.

To make the block, the pieces are first set together in strips as indicated by the vertical panels marked 1, 2, 3, 4 and 5, and then sewed to one another to form the block.

The work is more quickly done if long strips of proper width are seamed together by machine in groups of two



and three, with light and dark shades arranged properly, pressed and then cut into correct lengths to be sewed into panels.

CURE FOR CHAPPED HANDS.

I am compelled to write a little appreciation of some of the less used conveniences of the kitchen by a little experience I had last winter. Hoping that some other girls and women on the farm may profit by my example.

Chapped hands have been a bugbear with me for many years and as everyone knows, creams, etc., applied only help for a short time. I sat down one night with red, swollen, cracked and bleeding, hands and decided to face the situation and find a remedy.

"The only way is to keep my hands out of water, and how can I do that with dishes, scrubbing and other things having to be done?" was my discouraged thought. However, a little calm thinking decided me to try some of the helps for the housewife that I had heard of.

I straightway invested in two dish mops, one for the dishes and one for the sink, a soap shaker and a mop wringer. With these one does not need to keep the hands in water, and by using boiling water on the floor, and ammonia and cleanser on the sink, everything about the kitchen looked quite as clean as usual. While my hands in a very few days improved and still keep in a condition very satisfactory indeed.

Aside from the discomfort saved, I think these good investments, for who does not feel any social gathering spoiled for one by having to conceal, as well as may be, their hands, swollen and discolored.—M. Mc.

HOME QUERIES.

Household Editor:—Could you tell me how to take care of the following ferns: Boston, Roosevelt, Whitman, Teddy Junior?—Subscriber.

Ferns require a little special care when grown in houses in order to grow most successfully. A moist warm atmosphere with plenty of light but not direct sunlight are the most ideal conditions. Unfortunately, these are not the conditions that prevail in the average home. The air, especially in rooms heated with a hot air furnace, is dry and somewhat dusty. The temperature instead of being quite uniform, varies considerably from noon through the night. Under such conditions it is impossible to get the best results from ferns, but knowing the ideal conditions, one should endeavor to approach them as nearly as possible. Place the ferns preferably between two windows in a corner of the room where there will be plenty of indirect light but no sunlight. Water regularly but not so heavily as to keep the roots flooded with water. Wash the foliage frequently and feed the plants regularly. Manure water made by taking a sack of decomposed manure and placing it in a barrel of water is one of the best materials for feeding ferns. These plants should be fed with this fertilizer about once a week. A very common mistake made by people in handling house plants is in placing them close to the windows where the temperature is the highest at noon and the lowest after sundown. A uniform temperature with not more than a difference of ten degrees between the day temperature and the night temperature is especially required for the best results with ferns. The soil for ferns should be very loose and friable, leaf mold mixed with equal parts of decomposed sod and manure being an ideal soil.—C. P. Halligan.

Household Editor:—Will you or some reader please give a recipe for graham bread, made with sour milk and molasses, that will not be soggy and heavy when it is baked? Mine will raise up nice and light and then it always falls again.—Mrs. F. C. H.

The following is a tested recipe for brown bread: One pint of sour milk, three cups of graham flour, one cup of white flour, one-half cup of molasses, one-half cup brown sugar, one teaspoon of soda, two heaping teaspoons of baking powder, a little salt. Bake one hour in a moderate oven. You can use a whole cup of sugar instead of molasses. Thank you for the recipe for fried lunch rolls and for your kind words.

Household Editor:—Having seen Mrs. A. P.'s request for fried lunch rolls, I thought I would send mine, which we like. Take a piece of bread dough about the size of a loaf of bread and to that add three-quarters of a cup of granulated sugar, two heaping tablespoons of shortening, one large or two small eggs, one and one-half cups of flour, or enough to make it as stiff as good bread dough. Mix all together, then roll into a sheet about half an inch thick, cut in strips one and one-half inches wide by three inches long, let them lie on mixing board until bread is ready to bake, then fry in deep, hot fat until brown and cooked through. Let cool and frost one side with the following: Two cups of dark brown sugar, half a cup of hot water. Boil until it hairs well, take from the fire and add three tablespoons of sweet cream, a piece of butter size of an egg, five drops of maple flavor or any extract liked. A little chocolate makes a good change. This recipe makes about six dozen rolls. I always make them when I make bread; it is lots handier.—Mrs. F. C. H.

SHORT CUTS TO HOUSEKEEPING.

It is very hard to keep a round crocheted yoke, without a high collar, in shape after it has been laundered. There should be crocheted along the

neck edge a tight row of single crochet stitches. Then the yoke looks as if it had been gathered. Crocheted work should never be ironed flat on a hard board; it should be done on several thicknesses of goods or a Turkish towel. Or, if one prefers, do not iron it at all, just pull it out when nearly dry. The rows of stitches should be left in the dress for a mark to be sewed on in the same place, then pull out the ones that should happen to show. When fitting the yoke on the above way, you can tell how near right you have it, after being laundered.—M. A. C.

To remove mildew from linen, mix soap and powdered starch, half as much salt and the juice of one lemon. Rub linen well and put outdoors on the grass for a day and a night.—S. B.

It is sometimes very difficult to wash a finely knitted or crocheted shawl without tearing it. The following is a very good plan: Make a lather of soap and warm water, in which you can comfortably bear your hands, and squeeze the shawl in this until it is clean. Soap should never be rubbed on knitted or crocheted articles of any description. Then rinse it in several waters of about the same temperature as the suds, squeeze the water out or run it through a wringer (don't wring it with the hands), and let the shawl lie in a heap on a clean cloth to dry. Move it about now and then. When it is nearly dry spread a clean sheet on the floor and pin the shawl out on this to its proper size. It will dry to whatever shape and size you pin it. When dry it will be as soft and fluffy as when new. Never hang a shawl on a line to dry, as this will stretch it.—M. A. C.

Rub cold ripe tomatoes with back of knife first, and they will peel much easier.—A. E. L.

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. 1085—Ladies' Apron. Cut in 3 sizes, small, medium and large. It requires 5 1/4 yds. of 36-inch material for a medium size. Price 10c.

No. 9939—Ladies' House Dress. Cut in 6 sizes, 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 4 3/4 yds. of 44-inch material for a 36-inch size. The skirt measures about 1 1/2 yds. at the foot. Price 10c.

No. 1293—Childs' Bonnets. Cut in 3 sizes, 6 mo., 1 and 2 years. A one-year size will require 5/8 yd for No. 1, of 30-inch material, 1 1/8 yd, for No. 2, of 20-inch material, and 5/8 yd of 20-inch material for No. 3. Price 10c.

No. 1057—Boys' Suit with Trousers. Cut in 4 sizes, 3, 4, 5 and 6 years. It requires 2 7/8 yds. of 44-inch material for a 4-year size. Price 10c.



Fleece-lined for Warmth

Elastic-ribbed for Comfort

Soft as Velvet—And Wonderfully Elastic

VELLASTIC is the supreme luxury in winter underwear. Its fleecelining has the warmth of heavy underwears, and the patented ribbed fabric gives it an elasticity that insures perfect fit and comfort.

VELLASTIC Elastic Ribbed, Fleece-Lined UNDERWEAR

VELLASTIC is splendidly made and carefully finished in every detail. It fits you when you buy it and keeps its fit for years. Seams are flat and smooth, the garments are re-inforced throughout; buttons are big and strong, and the buttonholes are the wonderful Reis patented kind that do not rip or enlarge. VELLASTIC Union Suits are great.

VELLASTIC is the scientific underwear, preventing colds and grippe with its hygienic, dry inner fleece. It is cheaper than doctor's bills. Buy VELLASTIC—for every member of the family. Ask your merchant.

UNION SUITS \$1.00 For MEN, WOMEN and CHILDREN SEPARATE GARMENTS 50c

If not at your dealer's, write for Bodygard Book No. 23 and we will have you supplied

UTICA KNITTING CO., Makers

Utica, N. Y.



Get Wholesale Prices

We Pay the Freight and Ship Within 24 Hours

on stoves, ranges, base-burners, cook stoves, gas stoves, etc., from Kalamazoo factory.

WRITE for 1916 catalog—see new styles—1916 prices. 300,000 satisfied customers endorse Kalamazoo offer—low wholesale price—30 days' trial—year's test—cash or easy payments—\$100,000 guaranty. We pay freight and start shipment within 24 hours. Mail postal today for catalog—also receive new 1916 souvenir, "Recipes in Rhyme." Both free. Ask for Catalog No. 113

KALAMAZOO STOVE CO., Mrs., Kalamazoo, Mich. We manufacture stoves, ranges, gas stoves, furnaces and white enameled metal kitchen cabinets and tables. Mention which catalog wanted.

A Kalamazoo Direct to You

DON'T PAY TWO PRICES HOOSIER Stoves Ranges Heaters FREE

To try in your own home for 30 days. Show your friends. Freight paid by us. Send it back at our expense if you do not want to keep it. You can buy the best at Actual Factory Prices. Are heavily made, of the highest grade selected material, beautifully finished, with improvements that absolutely surpass anything ever produced. The Best in the World. Guaranteed for years by a Two Million Dollar Bond. No matter where you live, you can try a HOOSIER in your own home thirty days, without a penny's expense or obligation to you. You can save enough on a single HOOSIER STOVE to buy your winter's fuel. Write or send postal today for Large Free Catalog and prices showing large assortment to select from. No Obligations.

HOOSIER STOVE COMPANY, 131 State Street, - MARION, IND.



BOYS WATCH.

Every boy, young or old, would be proud to carry one of these watches. It is 16 size, with a nickel case. Stem set and wind. Regular watch movement with hair spring. Guaranteed by the makers and repaired free of charge for one year, if given ordinary care. Any boy who really wants a watch can easily earn one in one afternoon.

The watch alone free for sending three subscriptions to the Michigan Farmer.

When writing advertisers please mention The Michigan Farmer

Ask Your Dealer



Guaranteed for 100 Hours of Open Circuit Work

RED DRY BATTERY SEAL

For Ignition
High Amperage

How To Run the Gas Engine Simplified

FREE to Engine Owners, Tractorers and Motorists

Send for it today. Book contains 64 pages brimful of Hints and Helps to Successful Operation of Gasoline Engines.

Tells How to Get Good Service from Your Gas Engine, What To Do In Time of Trouble, etc.

We send this valuable book FREE because it contains a few pages advertising

Red Seal Dry Batteries

For Gas Engines, Tractors, Automobiles, also for Phones, Bells, Hand Lanterns, etc.

The Guarantee Protects You Ask Your Dealer

MANHATTAN ELECTRICAL SUPPLY CO.
104 S. Fifth Ave., Chicago
New York, St. Louis, San Francisco
Factories: Jersey City, Cincinnati and Ravenna, O.

GRIND 150 BU. PER HOUR
LESS THAN 1¢ PER BUSHEL!



Bowsher Mills often reduce the cost of grinding one-half. That's because they are light running with perfect conical shape grinders, different from all others.

BOWSHER FEED MILLS


(Sold with or without elevator)

Crush ear corn (with or without shucks) and Grind all kinds of small grains. Handy to operate. 10 sizes—2 to 25 H. P. Also sweep grinders.

FREE Send for folder on values feeds and manures.

D. N. P. Bowsher Co., South Bend, Ind.


SOLD ON TRIAL



ROSENTHAL CORN HUSKER & SHREDDER

Handles your corn crop economically. Sizes to run with from 6 to 20 H. P. Engines. ROSENTHAL Huskers, Shredders, Feed Cutters and Silo Fillers, have been giving satisfaction for years. Free Book. Get this Free Book about corn husking and shredding, and details about the Rosenthal. Give H. P. of your engine. We will also send Free Farmers Account Book. ROSENTHAL CORN HUSKER CO. BOX 2 MILWAUKEE, WIS.

KELLY DUPLEX GRINDING MILLS



made with a double set of grinders or burrs. Have a grinding surface of just double that of most mills of equal size, therefore,

Do Twice as Much Work.

Grind ear corn, shelled corn, oats, rye, wheat, barley, kafir corn, oat-tan seed, corn in shucks, wheat oats, or any kind of grain, coarse, medium or fine. Require 25% less power. Especially adapted for gasoline engines. Write for new catalogue.

Free Catalogue

Duplex Mill & Mfg. Co., Box 306 Springfield, Ohio

MAPLE SYRUP MAKERS
The Grimm Evaporator



used by principal maple syrup makers everywhere. Saving of time and fuel alone will pay for the outfit. Write for catalogue and state number of trees you tap.

GRIMM MANUFACTURING CO.
169-621 Champlain Ave., N. W. Cleveland, Ohio.

KEEP THE TOLL YOURSELF



Use the time for the drive to mill in grinding feed and corn meal. One horse can do it. We guarantee capacity, material and workmanship in Star Sweep Grindstones. Big returns from little investment. Kar corn and small grains ground. Saves you money. Free catalog. Write Star Mfg. Co. 11 Depot Street, New Lexington, Ohio

Farm Commerce.

Marketing Now the Big Question

MORE attention should be given to the question of marketing than to that of increasing crop yields, for farming should be not only a scientific occupation but a successful business. The officials of the Department of Agriculture now are of that opinion. Conditions today on the farm are such that both producers and consumers feel there is something radically wrong with the business of marketing farm products.

For many decades in this country cheap virgin soils made cheap production possible so that farmers have felt only the need of concerning themselves with matters of large production. But higher land values, higher paid labor, the call for expensive fertilizers, and the increased expense of fighting diseases and insect and fungus pests, together with decreased yields in some cases, have emphasized the need of a radical change in business methods.

Large Crops Give Smallest Returns.

The contention is made by one class that the land is not being properly farmed and that what is needed is to make the land produce more to the acre. While it is desirable to increase production, the mere doubling of production will not necessarily greatly improve the conditions of the farmer or relieve the burden of high prices to the consumer, is the statement made by officials of the Office of Markets. It is a matter of record, they say, that the largest apple crop, the largest corn crop, and the largest cotton crop in the history of the nation have yielded the producers of those crops a less amount of profit than has been obtained in certain years of less production; and it is also known that in these years of enormous crops the prices paid by consumers in most sections have not reflected, in a proper degree, the low prices paid to the farmers.

To the careful student of the problem it seems evident that it is the lack of an efficient system of distribution and marketing that causes much of the trouble, and it is because of the lack of a marketing plan that the present-day average farming can not claim to be a business, but simply an occupation.

The average American manufacturer is successful because he gives as much—if not more—attention to the question of distribution as to that of production; but where would he land if his sole thoughts be on the production of products and none on the distribution and selling. The farmer of today is in a similar position to that of a manufacturer, but when the manner of selling his products is observed, the conclusion is formed that his marketing methods are not worthy of the name as they consist chiefly of "dumping" rather than of marketing.

Middleman Not to Blame.

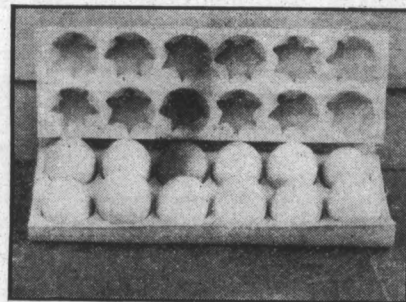
Many reformers attribute marketing difficulties to the presence of so many speculators and middlemen; but it must be remembered that these agents have come into existence to perform services that the farmer fails to perform for himself. If the farmer will not, or can not, arrange to finance his business, he must expect to pay others to do it for him. If he will not or can not store his crops and hold them until the markets are ready to use them, he calls into existence a class of speculators who demand and receive a liberal price for taking the chance and performing these services. If he is unable personally to distribute his crops and deal direct with the con-

sumer, he must employ agents or commission men to do this work for him. All of these agents must be paid, and most of them are in a position to collect their charge whether or not the consignor realizes anything at all. Working alone, the average farmer is practically helpless to develop an efficient marketing system.

Co-operation the Remedy.

The farmers are now beginning to be convinced that the co-operative plan of doing farm business is the most satisfactory method. Like the European farmer, the American farmer is being driven to co-operation by necessity. In the United States the necessity arises chiefly from the costly, clumsy, and unbusiness-like methods of distributing food products, resulting in an abnormal discrepancy between the price paid to the producer and the cost to the consumer. By selling co-operatively the farmers will not only be able to offer a standardized product and reduce the cost of marketing, but they will be able to furnish this better article to the consumer at the same or even a lower price, thus stimulating consumption. But any system of marketing that does not hope to give better service or better prices to the consumer, and, at the same

time, secure for the producer a greater net return, is founded on improper principles. No co-operative marketing association should be attempted unless the prospective members feel that it will do the work better or at a less cost than any existing plan. The object must be to eliminate or reduce waste.

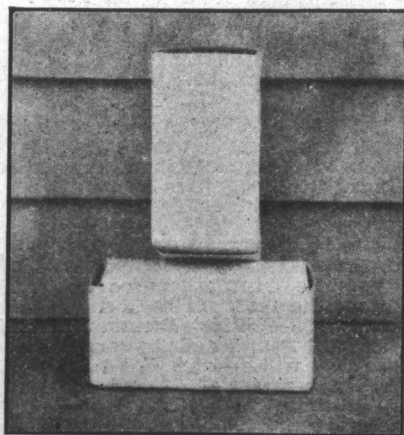


Eggs Carry Best when Shipped in the One-dozen Egg Carton.

Farming communities co-operate in church, politics and schools. If they are willing to leave their religion, their politics, and education to co-operation, why should they hesitate to leave the marketing of their farm crops to a co-operative system that has passed the experimental stage?

PACK PRODUCTS WELL.

The person who undertakes to sell his products directly to the consumer will attain success much quicker if he puts those products in packages that are inexpensive, neat and convenient



Customers Usually Prefer Shipments of Butter in Pound Containers.

to handle. City people are in the habit of getting their purchases from the retailer well-wrapped and if the farmer will render this same service he will have less difficulty in getting a start and holding his trade.

In handling butter, for instance, we have learned that the pound packages are generally liked best. This may be on account of precedent, as grocerymen send out butter in such cartons, but the convenience in using from pound molds is probably the biggest factor. In the shipment of eggs the containers holding a single dozen not only are easier to handle but experience over a long period of shipments has clearly demonstrated that fewer eggs are broken in such containers than in the old style.

Wayne Co.

W. TRUB.

HANDLING DAMP WHEAT.

Experiment Demonstrates that Damp Wheat May be Put in Good Condition by Mixing with Dry Wheat.

Much of the new crop of wheat as delivered from the farm this year has a high moisture content which, if put into storage without special treatment is very likely to cause trouble by becoming musty and hot.

By mixing high-moisture and low-moisture wheat together, a method whereby part of the damp wheat of this year's crop can be put into good condition was demonstrated in an experiment at Baltimore which was directed by a grain-standardization specialist of the agricultural department in co-operation with a milling concern.

The experiment described was performed to determine if it would be possible or feasible to handle damp wheat in such a way that it would not be necessary to put it through a commercial drier and yet insure its keeping safely in storage or during shipment.

For this experiment one car of Pacific coast white wheat containing 1,098 bushels was mixed with one car of eastern red winter wheat containing 1,126 bushels, and put into storage in an elevator bin. On July 29, samples taken from the white wheat while it was still in the car tested 9.7 per cent moisture. Samples taken from the red wheat on July 31, while this wheat was also still in the car, tested 15.1 per cent. These wheats were thoroughly mixed on August 3 and the mixture was then put into storage in an elevator bin and allowed to remain there until August 6, when it was transferred to another bin. Samples taken from the wheat at the time it was transferred tested 12.9 per cent moisture for the red wheat and 12.2 per cent for the white wheat. The wheat was allowed to remain in the second bin until August 10 when it was transferred to a third bin. Samples taken at this time showed that the moisture content of the red wheat was 12.5 per cent and of the white wheat, 12 per cent. While the grain was still in the cars the red wheat tested higher in moisture by 5.4 per cent than the white wheat. By August 6, or three days after the wheats were mixed, enough of the moisture from the damp wheat had been transferred to the dry wheat so that the difference in their moisture content at that time was only seven-tenths of one per cent. By August 10, or one week after the wheats had been mixed, the difference in their moisture contents had been reduced to only one-half of one per cent.

In order to have a record of the temperature changes in the grain during this experiment, four electrical thermometers were placed at different depths in the bin into which the mixture was run. No appreciable change in temperature was noticed during the transfer of the moisture from the red to the white wheat.

The mixing of damp and dry wheat will facilitate the handling of the wet

wheat this year. The miller who buys wet wheat and has some dry wheat to mix with it can obviate some of the extra work in handling the damp wheat to keep it in condition and also get it in shape for milling by mixing the two wheats together for a few days. This will also do away with part of the extra work in drying. One car of wheat can be dried down to a low moisture content and time and labor be saved. If the mills or elevators are equipped so that they can mix and dry at the same time, this method will greatly increase their capacity for taking care of large quantities of damp wheat.

While this experiment was conducted primarily to assist grain dealers there are many farmers who may find the suggestions advantageous.

CO-OPERATION IN MICHIGAN.

The Muskegon County Celery Growers' Association has been launched at Muskegon with the following officers: President, Fred Wierenga; vice-president, Peter Bush; treasurer, Jerry Vandermolen. A sales manager will be employed with a view to better distribution of the Muskegon grown product in various markets. At present the bulk of it is dumped on the Chicago market on a consignment basis. Growers are having a bad year. Besides black rot the blight has attacked many celery fields, greatly reducing the yield.

L. R. Walker, county agriculturist of Marquette, is organizing farmers' clubs. One was formed recently in Republic township, with officers as follows: President, Victor Maki; vice-president, Bert Barton; secretary, Thos. Chenhall; treasurer, John Leyone. The objects are, to encourage raising of pure-bred stock and the elimination of undesirable types for commercial purposes; to give special attention to seed improvement and dissemination; to encourage correct cultural methods; to assist in guarding against plant diseases; to promote better sorting and grading of farm crops.

The Marquette County Potato Growers' Association has adopted the Green Mountain as the standard variety for that section.

Kent Co. ALMOND GRIFFEN.

Crop and Market Notes.

Ohio.

Hardin Co., Oct. 11.—Corn is being harvested and is a fair crop. Wheat yielded around 25 to 30 bushels per acre. Potatoes a small crop, late ones being small and rotting badly. Apples very plentiful. Clover seed poor yield. Wheat \$1; oats 32c; potatoes 50c; butter 26c; eggs 28c.

Clermont Co., Oct. 12.—Corn is being cut and is in good condition. Potatoes rotted to some extent; however, there is the largest crop this county has harvested for years. The usual amount of fall grain is being sown. Apples and pears large crops. Apples 25c; potatoes 50c; onions 25c per bushel; wheat \$1; corn 50c; young chickens 13c; butter 20c; eggs 25c.

Holmes Co., Oct. 14.—Fair weather with hard frost October 8. Wheat all in, corn about all cut and is a good crop. Yield of wheat and oats good. Clover seed a light yield. Early potatoes good and late ones a failure. The average amount of wheat sown. Apples plentiful but few picked as yet. A considerable amount of cattle and hogs on hand. Wheat \$1.03; corn 80c; potatoes 40c.

Guernsey Co., Oct. 13.—Wheat made 18 bushels and oats 30 bushels per acre; clover seed about one peck per acre; corn is drying out nicely and potatoes not rotting now. Wheat seeding is late, owing to wet weather. We have had three weeks of fine weather and the roads are hard and smooth. Apples are about one-third of a crop. Small crop of pears; threshing, hay baling, sowing wheat and hauling coal is now being done. Mines are mostly working pretty good. Wheat \$1; potatoes 50@60c; apples 50@75c; eggs 30c; butter 25@30c.

Indiana.

Wells Co., Oct. 11.—The first frost came October 10. Corn most all cut and eared well. Wheat yielded from

20 to 40 bushels. Oats good but too much rain at harvest time to save all the crop. Early potatoes good though rotted some; late ones about half a crop. Plenty of fall and winter apples, and market very poor.

Wayne Co., Oct. 15.—Seeding is all done but the acreage is not as large as usual. Wheat yielded from 18 to 30 bushels and oats about 50 bushels. Prospects for clover seed not good and the most of the crop was cut for hay or pastured. Corn is maturing nicely and will be a good crop. About the usual amount of fodder is being cut. Early potatoes were good but late potatoes almost a failure and much damage reported by rotting. About the usual amount of feeding stock on hand. An unusually large apple crop and some pears. Pastures are good and all stock doing well. Wheat \$1; oats 30c; potatoes 50c; apples 50c; hogs \$8 per cwt; chickens 12c; butter 25c.

Illinois.

Marion Co., Oct. 11.—Weather cool and dry, and we have had killing frosts. Yield of wheat 10 to 30 bushels, and both grains damaged by wet weather. Corn a fair crop. Silos all filled. Potatoes good; about half the usual amount of fall grain sown. No feeding stock on hand. There is an immense crop of apples. Wheat \$1; potatoes 50c; apples \$2 per bbl.

Wisconsin.

Pierce Co., Oct. 12.—A heavy frost on September 30 caught much corn, roots and fruit. Potato yield below normal and some rotting, while prices are low. More wheat being sown than usual. Apple crop heavy and not marketed to advantage except where co-operative associations exist. The onion crop is poor; cabbages headed out well. Tomatoes almost a failure where grown as a field crop. Wheat 85c; oats 28c; corn 65c; rye 80c; potatoes 35c; hogs \$6.25@7.25; fowls 10c; eggs 22c; creamery butter 31c.

Wausahara Co., Oct. 13.—Oats yielded well, 50 to 60 bushels being quite common; rye about 15 bushels; corn injured by frost, and a great amount of soft corn. Clover seed about a third of a crop. Potatoes badly blighted, which followed by wet weather caused them to rot badly. Apples plentiful, and bring only 50c per cwt; potatoes 35c per bushel; eggs 22c; wheat 90c; rye 86c.

Iowa.

Osceola Co., Oct. 12.—Threshing is very much delayed. It will take five or six weeks of good weather before the grain will be threshed. Most of this second crop of clover was cut for hay; there is no seed in it. We have had two or three heavy frosts, the first was about September 15. The corn was very immature and the past week of dry weather has been shrinking the ears to nubbins. No fall grain sown. Farmers are keeping all feeding stock to feed the corn to. We have a good supply of apples. Potatoes are mostly all dug and not a very good crop, many of them rotting in the ground.

Nebraska.

Cass Co., Oct. 15.—Wheat is being sown; acreage will be decreased one-half or more; threshing mostly done; yield of wheat 12 to 30 bushels; oats 20 to 40 bushels. Potatoes generally a poor yield. Corn maturing very slowly and none fit to crib yet. Had a killing frost the night of October 4. Very little feeding stock on hand. The yield of apples was good; sales slow and prices low, 40 to 50c per bushel at orchards for best varieties. Wheat 90c@1; oats 30c; corn 55c; hogs \$7.75; hay \$5; potatoes 50c; poultry 9@11c; eggs 20c; butter 25c.

Knox Co., Oct. 11.—Weather cloudy, with several frosts, which injured corn to some extent. There is some soft corn. Spring wheat yielded 20 bushels; fall wheat 30 bushels; oats 40 to 50 bushels. The usual amount of small grains sown. Apples are a large crop. About the regular amount of feeding stock on hand. Wheat 85c; potatoes 50c; apples 50c; hogs \$7; eggs 19c; butter 20c; butter-fat 23c.

Kansas.

Lincoln Co., Oct. 15.—Farmers still sowing wheat, the first sowing is up fine. There is a big portion of wheat to be threshed yet. Corn will yield from 40 to 60 bushels; late corn was caught by frost. Almost every farmer will feed some cattle this winter. Hay and feed is plentiful. Hogs scarce. Apples are good and sell at 50@75c per bushel. Potatoes 80c; wheat 95c; cream 25c; eggs 20c.

Idaho.

Minidoka Co., Oct. 11.—Wheat good and yielding on irrigated land about 50 bushels per acre; barley 60 to 70 bushels. Potatoes good; sugar beets good. Not much fall grain sown except a little wheat. Corn a fair crop. Not very much live stock being fed at present. Wheat \$1.30 per cwt; potatoes 70c; apples \$1 per bushel; butter 25c; eggs 25c.



Shorten the time between you and your market

It's the time you spend on the road—hauling your milk, fruit, or general produce to market—that cuts into your profits—for your time means money. With a good practical, low-priced auto truck you can cut hours of your hauling time. And every hour saved means more money clear. Besides—if you have a good truck—you don't have to take your horses from field work.

And there is no better place to go for auto trucks or auto truck information than the nearest dealer in GMC Trucks or the GMC factory, the largest exclusive truck plant in the world. We make everything in the line of trucks from 1000 pounds to 6 ton capacity.

Our best all round farm truck is the 1500 lb. gasoline model shown above. On Sundays or holidays it can be fitted with seats for passengers and serves all the purposes of a family auto.

Write for our free booklet 10. It tells all about this truck and gives truck information every successful farmer ought to have.

GENERAL MOTORS TRUCK CO
Pontiac, Mich. (42)

Without Paying More

you can forget spark plug trouble by using AC—the plug that is adopted for regular equipment by the leading manufacturers.

Apperson	Enger	Lambert	Paige
Brockway	Federal	Lexington	Peerless
Truck	Glide	Howard	Pierce-Arrow
Buick	G. M. C.	McFarlan	Pilot
Cadillac	Haynes	Moline-Knight	Reo
Chalmers	Harley	Monroe	Saxon
Chevrolet	Davidson	Moon	Scripps-Booth
Cole	Hudson	National	Stutz
Commerce	Hupp	Oakland	Vellie
Dodge Bros.	Jackson	Olds	Westcott
Dort	Knox	Packard	Wilcox Trux

There are a few large manufacturers, however, such as Ford, Overland, Maxwell and Studebaker who do not use our plugs, but there is an AC plug made for each one of these cars which will give the user greater efficiency and a better running car.

Champion Ignition Company, Flint, Mich.

AC Spark Plugs

Guaranteed Gas-Tight

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 \$139.50; 12 H-P \$197.00; 16 H-P \$279.70; 22 H-P \$359.80. 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 one 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,
2193 Oakland Avenue,
Kansas City, Mo.
2193 Empire Bldg.,
Pittsburgh, Pa.

CASH OR EASY TERMS

FURS and SKINS

Send us your Raw Furs and Hides and let us tan and make them into nice coats or fur sets (for men and women) robes, rugs or gloves. We guarantee best workmanship at lowest prices. Write for catalog. References: any bank.

JOHN W. MERCKEL & CO.,
Mnfg. Furriers. Breitmeyer Bldg., Detroit, Mich.

WANTED—AN IDEA: Who can think of simple thing to patent? Protect 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.

PATENT WANT OVEN PATENTS. Manufacturers want Owen Patents. Send for 3 free books; inventions wanted, etc. I market your invention without charge.

RICHARD B. OWEN, 117 Owen Bldg., Washington, D. C.

WANTED—A farmer or small farm connection with a children's Home. Apply, Good Will Farm, Houghton, Mich.

Mention The Michigan Farmer When Writing Advertisers

Markets.

WEATHER FORECAST.

For week beginning October 20, for region of Great Lakes. There will be rain Wednesday over the northern portion of the upper lake district, extending Wednesday night and Thursday throughout the lake region generally. After Thursday the weather will be generally fair with somewhat lower temperatures for a day or two.

GRAINS AND SEEDS.

October 19, 1915.

Wheat.—Wheat dealers have been operating on a higher basis of prices the past week. On Monday, however, there was a slight reaction due to heavy deliveries at northwestern markets, which deliveries consisted largely of spring wheat. The general conditions, however, do not show a great deal of change from a week ago. Liverpool continues firm and the United Kingdom reports small stocks. The continental markets are in great need of wheat, and are buying flour from England. There is a growing belief that farmers over the country have less merchantable wheat to sell than would be expected from the large crop. An unusually high percentage of the grain will have to be used for stock feed. Generally speaking, mills are anxiously buying all the good wheat they can put their hands on. Flour is in heavy demand all over the country. The visible supply for the United States shows an increase of 642,000 bushels for the week, while wheat in bond increased 2,739,000 bu. Most of the foreign buying thus far has been from the Canadian provinces. One year ago No. 2 red wheat was quoted at \$1.13½ per bushel. Quotations for the week are:

	No. 2	No. 1	Dec.
	Red.	White.	
Wednesday	1.15½	1.12½	1.19
Thursday	1.15½	1.12½	1.18½
Friday	1.17	1.14	1.19½
Saturday	1.18½	1.15	1.21
Monday	1.17½	1.14½	1.21
Tuesday	1.17½	1.14½	1.20¼

Chicago.—December wheat 1.06¼; May \$1.07¼.

Corn.—Prices for this grain have advanced with those of wheat, and a similar reaction occurred on Monday. The weather has been favorable for securing the crop in most sections, which will add to the percentage of merchantable grades. The visible supply of corn decreased 197,000 bushels during the week. A year ago No. 3 corn was quoted at 74c per bushel. Quotations are as follows:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	66	67
Thursday	66	67
Friday	67	68
Saturday	68	69
Monday	67½	68½
Tuesday	67½	68½

Chicago.—December corn, 58.6c; May 60.1c per bushel.

Oats.—Quotations show an advance of 3c for oats in the past week. Farmers are bringing the grain to market but little faster than it is being absorbed by the buyers. The visible supply in the United States increased 424,000 bushels the last seven days. Standard oats a year ago were quoted at 50c per bushel. Quotations for the week are:

	Standard.	No. 3
		White.
Wednesday	40	38½
Thursday	40	38½
Friday	40	38½
Saturday	40	39
Monday	42	40½
Tuesday	42	40½

Chicago.—December oats 38.6; May 39.6 per bushel.

Rye.—Cash rye has gone above the \$1 mark since a week ago, with the trade holding steady. Cash No. 2 is quoted at \$1.01 per bushel.

Barley.—Malting grades are steady at 53@63c per bushel at Milwaukee and 52@63c at Chicago.

Peas.—Dried field peas have a strong market with the new crop quoted at \$2.15@2.25 per bushel, sacks included.

Beans.—Further advances are reported in the bean deal. Cash beans are now on a \$3.50 basis at Detroit, while October are quoted at \$3.35. The Chicago market is firm and stocks are small with a moderate demand; prices are advancing rapidly. Pea beans, hand-picked, good to choice are quoted at \$3.80@4; common to fair \$3.50@3.75; red kidneys \$3.50@4. At Greenville the elevators are offering \$2.90 per bushel.

Clover Seed.—Prices are advanced with prime spot quoted at \$12.25; October \$12.75; prime alsike \$10.25. At Toledo, October is \$13.05; March at

\$12.65; prime and October alsike at \$10.30.

Timothy Seed.—Higher at \$3.60 for prime spot.

FLOUR AND FEEDS.

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

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$28; standard middlings \$24; fine middlings \$32; cracked corn \$24; corn and oat chop \$31.60 per ton.

Hay.—No. 1 timothy \$17@18 a ton; standard timothy \$16@17; light mixed \$16@17; No. 2 timothy \$14@15; No. 2 mixed \$12@13; No. 1 clover \$10@11.

Chicago.—Market firm and supply of good hay is light. Choice timothy \$18@19; No. 1 do. \$17@17.50; No. 2 do. \$14@15; No. 3 do. \$11@12 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—A moderate supply and active demand holds market firm at last week's prices. Extra creamery 28c; do firsts 27c; dairy 21c; packing 19c.

Eggs.—The advance of last week brought a movement of short-held goods which brought a decline of ½c. Receipts of fancy goods not large. The price, based on sales, is 27½c.

Chicago.—The feeling is easy and prices are slightly lower. Demand is rather tame. Extra creamery 27c; firsts 26c; extra dairies 26c; packing stock 19@19½c.

Eggs.—Current receipts are improving in quality and have advanced ½c. Canded firsts declined ½c. Market is firm. Canded firsts 26½c; current receipts 25½c.

Chicago.—Strictly fresh eggs are firm and higher. Storage stock is steady. Firsts 26@26½c; ordinary firsts 25@25½c; miscellaneous lots, cases included 20@26c.

Poultry.—Market is overstocked and only good stock sells. Turkeys 14@15c; spring turkeys 18c; fowls 9@12½c; spring chickens, general run 13½c; ducks 14c; geese 13@13½c.

Chicago.—Supply is liberal but demand is good. Spring chickens are lower. Quotations: Turkeys 10@14c; fowls 10@12½c; springs 13c; ducks 12@13c; geese 8@13c.

FRUITS AND VEGETABLES.

Apples.—Market higher with the demand good. Fancy \$2.75@3.25 a bbl; common \$1.25@1.50. At Chicago the demand is good for all kinds of stock. No. 1 Wealthy, Wolf River and Alexander \$2.50@3; Jonathans No. 1 \$3@3.50; Snows and Spies \$2.75@3.25; Greenings \$2.50@3; Wagener \$2.50@2.75.

Potatoes.—Market is steady with Minnesota offerings at 80c and Michigan 60@65c per bushel. At Chicago increased receipts brought lower prices. Michigans not quoted. Prices range from 40@48c. At Greenville the price has dropped to 45c. Receipts are light on account of lower prices.

WOOL.

Boston.—The trade has recovered from its worry over the raising of the embargo on English wool, and there appears to be further improvement in the market. As usual the season just now is dull because manufacturers are working up stocks secured earlier in the season. There is strong faith in higher values later on, and dealers are not at all disposed to cut prices in order to move their holdings. Fleeces are becoming more active and prices are firm. The foreign markets are strong. Both South American and Australian prices are high. Boston quotations for Michigan unwashed delaines are 28@29c; do. combing 2@37c; do. clothing 24@30c.

DETROIT EASTERN MARKET.

There was a good market Tuesday morning and prices were generally satisfactory to the farmers. Potatoes are coming a little more freely and sell at 90c@\$1 per bushel; apples are moving fairly well with prices ranging from 75c@\$2, according to variety and quality; cabbage 40c for white, 60c for red; peaches 75c@\$1; carrots 60c; parsnips 70c; pears \$1; onions 90c; eggs 38c; loose hay coming in slowly with prices ranging from \$18@22 per ton.

GRAND RAPIDS.

Potatoes are off about 10c since last week, due to large receipts following the recent advance in price. Reports of rot continue and this situation is causing many growers to unload on the present market. Growers who are sure they can keep their tubers until spring will undoubtedly make good money by doing so. Prices of potatoes at Greenville, Cadillac and other

places are now around 40c. The egg market has gone still higher, with market for fresh stock at 27@28c. Vegetables on the city market bring the following prices: Turnips 40@50c; carrots 35c; cabbage 25@35c; celery 15@20c. Grain prices at the mills are: Wheat \$1.10; oats 38c; rye 80c; buckwheat 70@80c; corn 75c; white beans, new crop \$2.90.

LIVE STOCK MARKETS.

Buffalo.

October 18, 1915.

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

Receipts of stock here today as follows: Cattle, 287 cars; hogs, 131 d. d.; sheep and lambs, 60 d. d.; calves, 1,200 head.

With 287 cars of cattle on our market here today, the good cattle sold from 15@25c per cwt. higher; the medium cattle from steady to a shade lower; the good butcher cattle steady, and the common kind from 15@25c per cwt. lower. Good cows sold steady, and the common cows from 25@50c per cwt. lower. Stockers and feeders sold about steady. About everything sold at the close of the market. We look for the good cattle to sell at steady prices, and if the runs let up they will probably go higher. There were a good many Canadians here today and the top on them reached \$8.75, but most of the good ones sold from \$8.25@8.50. We had one load of Ohio cattle that sold for \$8.85, which was the top.

We had entirely too many hogs here today and too many of the one kind, quality was very poor and good hogs were very scarce. While there were a few loads that weighed above 200 lbs., the quality was not very good, and the light weights of good quality were preferred to the common classes weighing above 200 lbs. Yorkers and light mixed sold at \$8.40 generally, with a few lots up to \$8.50. The strictly choice medium weights quotable as high as \$8.75; light yorkers \$7.50@8; pigs \$7.25@7.50; common and skippy kind around \$6.50; roughs \$7.50; stags \$6@6.50. Quite a good many hogs arrived late and are going over unsold, and while we look for a little stronger market tomorrow, do not think we will get much advance before the middle of the week at the earliest, and would caution buyers against common grades of hogs, too many of this kind coming at the present time.

The lamb market was active today, prices 10c lower than the close of last week. All sold and we look for about steady prices balance of the week.

We quote: Lambs \$8.80@8.90; cull to fair \$7@8.75; yearlings \$6.75@7.50; Bucks \$4@5.25; handy ewes \$5.75@6; heavy ewes \$5.25@5.50; wethers \$6.50@6.75; cull sheep \$3.50@4.75; veals, good to choice \$11.25@11.50; common to fair \$8.50@11; heavy calves \$6@9.

Chicago.

October 18, 1915.

Cattle. Hogs. Sheep.
Receipts today...14,000 23,000 17,000
Same day 1914...30,005 33,252 35,556
Last week.....59,590 94,874 69,904
Same wk 1914...53,022 106,165 179,388

Hogs received last week averaged but 204 lbs., much the lightest yet seen, and light hogs made up the greater part of the receipts today. Trade was animated at firm prices, sales ranging at \$8@8.95. Cattle were so scarce that killers paid early advances of 15@20c for butcher stuff, and steers looked all of 10@15c higher on an average. Sheep and lambs were slow and largely 10@15c lower.

Cattle were received last week in the largest number for any week of this year, with a Monday run of 27,121 head, and prices underwent serious declines, as there was no increase in the demand from any source. In fact, the shipping demand was so insignificant as to cut no figure, quarantines cutting it off almost completely, and local killers had things break their own way, even choice beeves going lower, although the most serious breaks occurred in the cattle on the grassy order, which greatly predominated all the week. The bulk of the steers sold at \$7.50@9.75, with prime heavy beeves selling on Monday up to \$10.45, while on the same day 1,293 to 1,350-lb. steers brought \$10.20. On Wednesday prime yearling steers brought \$10.25, the same as on Monday, while prime 1,324 to 1,449-lb. steers sold for \$10.25. Inferior to plain grass steers sold during the week at \$4.50@6.45, the poorer lots being canners. Common to medium warmed-up steers sold at \$6.50@7.50, medium to good handy steers at \$7.60@8.45, good to choice corn-fed steers at \$8.50@9.45 and choice to prime heavy steers at \$9.50@10.25. Common to fair yearlings sold at \$7.25@8.65, with sales all the way up to \$9.50@9.75 for fat lots, while the best brought \$10@10.25. Butchering cows and heifers were fairly active at the materially

reduced prices, selling at \$4.40@8.25, the best cows going at \$6.75@7, while cutters brought \$3.80@4.35, canners \$2.75@3.75 and bulls \$4@7. Calves had a fair outlet, with prices ruling at \$4@9 for the heavier lots, while desirable light vealers brought \$10.50@11.75. Western range cattle comprised the usual proportion of the receipts, and they shared in the decline in prices, steers being salable at \$6.75@8.60 and cows and heifers at \$3.75@7. It is extremely unfortunate that so many stockmen should persist in rushing partly fattened cattle to market. The week's decline amounted to 25@50c in steers and bulls, about the same in rangers and 35@75c in cows and heifers.

Hogs were in good local demand last week, the large demand for fresh and cured hog meats acting as a powerful stimulus, but there was no shipping demand worth mentioning. Prices underwent further good advances, with an \$8.90 top for prime medium to heavy weights day after day, and values were the highest of the year, as well as much higher than at corresponding dates one and two years ago. Unfortunately, the general quality of the offerings was remarkably poor, with common grassy hogs in large supply, the bulk of the receipts being on the mixed order. A little more corn fed to the hogs would do them good and assure their owners of more satisfactory prices. Pigs were surprisingly plentiful, and as they were generally healthy, it seems strange that so many owners should let them come so early to market. Some little roasting pigs brought \$7.50@8 per 100 lbs. At the week's close prices were at their highest, hogs selling at \$8@8.55 for heavy packing lots, \$8.60@8.85 for heavy shipping, \$8.70@8.95 for selected butchers and \$5@8 for pigs. A week earlier hogs brought \$7.60@8.75. The present range of hog prices is the narrowest of the season.

Lambs, yearlings and ewes were marketed last week in far smaller numbers than a year ago, while wethers were hardly marketed at all. No shipments were made from here, and this caused some weakness in prices for the less attractive offerings, but prime live muttons were usually good sellers. The continued lack of an outlet for feeders was a bearish factor, so far as thin flocks were concerned. At the week's close lambs sold at \$7@9.05, with top natives at \$8.85, and prices 10@25c higher than a week ago. Yearlings remained firm at \$6@7.65, and sheep were 25@40c higher than a week earlier, wethers going at \$5.75@7, ewes at \$3.50@6.40 and bucks at \$4.25@5.

Horses were marketed last week in the usual large numbers and met with the customary liberal demand from agents representing the allied powers. All horses that came up to the required army standard sold readily at firm prices, and many rejected animals were auctioned off for \$85@100. Farm horses were quoted at \$100@175, mares selling the highest, while commercial chunks brought \$160@250. Prime heavy drafters were scarce and firmer at \$255@290.

LIVE STOCK NEWS.

Silage is being used for fattening cattle and other live stock this year far more generally than ever before, and its use is increasing rapidly in parts of the corn belt where the high price of land has tended to discourage fattening cattle for the market. Silage has proved a wonderful economizer of money and labor, and through its use farmers can produce the same results on smaller farms as on much larger farms. On the big farm owned by John J. Lawler in the northern part of Indiana, which embraces some 28,000 acres, not a single acre is devoted to pasture, and all the cattle are held in feed lots in summer and winter alike. The principal feeds used include corn silage, with alfalfa or clover hay, while cottonseed meal is used quite largely.

It is one of the peculiar features of the sheep industry that at a time of materially decreased production of mutton and unusually high prices for prime range and native lambs, so many stock feeders should persist in marketing half-fat lambs. These flocks are hard to sell, and many of them have been disposed of on the Chicago market recently below their first cost as feeders. Within a short time prime range lambs have brought as high as \$9.25 per 100 lbs., while feeding lambs from the ranges have sold at \$8.25 in feeding sections not far from Chicago. The range shipping season is nearing a close, and for the remainder of the year farm-fed flocks will come to the front. The high prices of 1915 have attracted many farmers to feeding lambs, but profits cannot be obtained unless the industry is conducted properly, and owners should understand this. Expenses of marketing thin lambs are just as high as when fat stock is shipped to market.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

October 21, 1915.
Cattle.

Receipts 2,304. There was another heavy run of live stock at the local yards in all departments this week and very poor time was made by all roads entering Detroit, and a large amount was not unloaded in time to sell on Wednesday. Everything seemed to be brought in at about the same time, making the yarding a difficult job.

In the cattle division the quality was very common, nothing in the receipts being good enough to bring over \$7.50, and few at this figure. The general market was dull at last week's decline on everything but canners, which were fully 50c lower. Demand for the country was good and the farmer was again a wonderful help. The close was dull and 15¢ lower on everything but extra dry-fed stuff than at the opening Wednesday. Best dry-fed steers \$7.50@8; best handy weight butcher steers \$6.50@7.25; mixed steers and heifers \$5.50@6; handy light butchers \$5@5.50; light butchers \$4.50@5; best cows \$5@6; butcher cows \$4@5; common cows \$3.75@4.25; canners \$2.50@3.50; best heavy bulls \$5.75@6; bologna bulls \$5@5.50; stock bulls \$4@4.50; feeders \$6@7; stockers \$5@6; milkers and springers \$4@90.

Bishop, B. & H. sold Hammond, S. & Co. 11 steers av 1113 at \$7.25, 1 do wgh 1170 at \$6.50, 2 do av 870 at \$5.75, 4 do av 837 at \$6, 6 canners av 830 at \$3.75, 3 steers av 953 at \$7.50, 2 do av 860 at \$6.25; to Parker, W. & Co. 9 canners av 1000 at \$4; to Sullivan P. Co. 2 cows av 1290 at \$4.50, 3 do av 1020 at \$5.50, 1 bull wgh 1380 at \$6; to Newton B. Co. 17 steers av 997 at \$7.50, 1 do wgh 860 at \$6, 1 cow wgh 1100 at \$5.20, 2 do av 1260 at \$5.50, 3 heifers av 917 at \$6.50, 2 cows av 1235 at \$5, 2 do av 1210 at \$5.60, 3 do av 1083 at \$5.35; to Rattkowsky 9 butchers av 812 at \$5.10, 5 cows av 1044 at \$5; to Riley 6 feeders av 872 at \$6.85; to Sullivan P. Co. 4 cows av 1087 at \$5; to Hammond, S. & Co. 4 heifers av 772 at \$6.25; to Reardon 3 feeders av 763 at \$7; to Merritt 9 do av 706 at \$6; to Hammond, S. & Co. 4 steers av 737 at \$7; to Sullivan P. Co. 10 do av 948 at \$7, 2 do av 1000 at \$7.10, 4 cows av 937 at \$5.35; to Rattkowsky 3 cows av 1060 at \$5; to Parker, W. & Co. 5 canners av 896 at \$3.75, 3 do av 910 at \$3.75; to Fromm 12 butchers av 946 at \$6.75; to Merritt 9 do av 600 at \$6.

Veal Calves.

Receipts 857. The veal calf trade opened dull and lower on Wednesday and was \$1 lower at the close, but they braced up again on Thursday and were about steady with last week selling best \$10.50@11; others \$6@10. Bishop, B. & H. sold Parker, W. & Co. 3 av 175 at \$11, 5 av 210 at \$11, 3 av 185 at \$11, 2 av 165 at \$10.50, 2 av 205 at \$10.50; to McGuire 11 av 175 at \$11, 5 av 150 at \$7.50.

Sheep and Lambs.

Receipts 9977. The sheep and lamb trade was active at Wednesday's prices but were 10¢ to 15¢ lower than last week. Swift, Armour, and S. & S., of the Chicago yards all had representatives here and with the Nagle P. Co., of Jersey City, there was an abundance of buyers and a good strong market as follows: Best lambs \$8.25@8.40; fair do \$7.50@8; light to common lambs \$6@7; fair to good sheep \$4.50@5.25; culls and common \$3@4. Reason & S. sold Nagle P. Co. 39 lambs av 70 at \$8.35, 75 do av 78 at \$8.35; to Sullivan P. Co. 14 do av 55 at \$7.50; to Nagle P. Co. 45 sheep av 115 at \$4.50, 8 do av 105 at \$3.75, 18 lambs av 65 at \$7.50; to Armour & Co. 109 lambs av 80 at \$8.25, 41 do av 65 at \$8; to Nagle P. Co. 102 do av 70 at \$8.25; to Costello 23 do av 65 at \$6, 18 sheep av 105 at \$4.75; to Mich. B. Co. 34 lambs av 50 at \$6.50; to Nagle P. Co. 94 lambs av 70 at \$8.25. Roe Com. Co. sold Nagle P. Co. 99 lambs av 80 at \$7.50, 56 do av 80 at \$7.75, 32 do av 75 at \$7.75, 23 sheep av 125 at \$4.75, 24 do av 100 at \$4.75, 8 do av 140 at \$4.50, 21 lambs av 90 at \$7.75, 6 do av 75 at \$7.25, 7 sheep av 130 at \$4.50, 9 do av 90 at \$4, 50 lambs av 80 at \$7.75.

Hogs.

Receipts 9138. About the worst break in hogs known here in a long time took place this week, the market breaking 50¢ to 75¢ per cwt. since Monday. On Wednesday the extreme top was \$7.75 and Thursday, although none have been sold at this writing, look like \$7.25 for the best grades, with pigs at \$6@6.50.

STATEMENT OF THE OWNER-SHIP, MANAGEMENT, ETC.

of the Michigan Farmer, published weekly at Detroit, Mich., required by the Act of August 24, 1912.

Name and Postoffice Address.

Editor, I. R. Waterbury, Detroit, Mich.; Managing Editor, M. J. Lawrence, Washington, D. C.; Business Manager, E. H. Houghton, Detroit, Mich.; Publisher, Lawrence Publishing Co., Detroit, Mich.

Owners, (if a corporation, give the names and addresses of stockholders holding one per cent or more of total amount of stock):

M. J. Lawrence, Washington, D. C.
M. L. Lawrence, Cleveland, Ohio.
P. T. Lawrence, New York City.
E. H. Houghton, Grosse Pointe, Mich.

F. H. Nance, Lakewood, Ohio.
Neff Laing, Philadelphia, Pa.
E. D. Pope, Cleveland, Ohio.

Nellie J. Lawrence, Cleveland, Ohio.
Citizens Sav. & T. Co., Cleveland, Ohio, Trustee under the will of M. W. Lawrence, (Beneficiaries, Nellie J. Lawrence, Mary Lawrence and Mortimer Lawrence).

Nellie J. Lawrence, Guardian, Cleveland, Ohio, Guardian of Gains J. Lawrence.

Mrs. G. B. Rogers, Cleveland, Ohio.
Lillian Cotton, Cleveland, Ohio.

R. M. McConville, Cleveland, Ohio.
G. J. Munsell, Detroit, Mich.
J. F. Cunningham, Lakewood, Ohio.

Known bondholders, mortgages, and other security holders, holding one per cent or more of total amount of bonds, mortgages, or other securities: None.

EDGAR H. HOUGHTON, Secy. (Signature of editor, publisher, business manager, or owner).

Sworn to and subscribed before me this Seventh day of October, 1915.

CLARENCE E. HAMLIN, Notary Public, Wayne County, Mich. (My commission expires October 12, 1917).

(Seal).

LIVE STOCK NEWS.

After the many months of a most determined fight maintained by the United States and various state authorities against the hoof-and-mouth disease, the recent fresh outbreaks in different parts of Illinois, mostly near Chicago, are extremely discouraging, having caused most of the states to quarantine against all live stock in Illinois. Large herds of dairy cows of high-class owned by Arthur Meeker and Samuel Insull have been slaughtered, their owners offering no objections, unlike Mrs. Durand, the owner of a herd of cows near that city, she having obtained an injunction against their slaughter. With scarcely any points left where Chicago could ship cattle, hogs or sheep, shipments from that great market have fallen to insignificant numbers, hogs being shipped out the most freely, and hence the making of prices was left mainly to local packers and the smaller city butchers. In such circumstances it was extremely fortunate for sellers of live stock of various descriptions that stockmen throughout the territory commercially tributary to the Chicago market at once recognized the importance of cutting down supplies to the smallest possible limits, as this was the only course open for preventing the worst kind of a slump in prices. As it was, some good prices were paid for fat cattle, lambs and sheep, despite some declines, while hogs of the better class had some big advances that placed them at the highest level seen at any time during the present year.

One important result of the quarantine against Illinois live stock has been to divert shipments from that state from Chicago to the Missouri river markets, giving such markets as Kansas City and Omaha a decided boom. Never before did the river markets boom as big as they are doing this year, and on a recent Monday Kansas City reported receipts of 35,000 head of cattle, while on the same day Omaha received approximately 38,000 sheep and lambs. Omaha has been getting the larger share of the traffic in range feeding lambs and sheep, big numbers having been shipped from that market to feeding districts. But it has been utterly impossible to fill anywhere near the enormous feeder requirements, because of the falling off in the offerings compared with recent years. The combined receipts of all descriptions of sheep, yearlings and lambs in Chicago and the five leading Missouri river markets for the expired nine months of 1915 fell 1,700,000 head short of such supplies for the corresponding months of 1914, and the proportion of feeders fell off materially. Of late feeding lambs have been selling on the Omaha market for \$8.15 to \$8.50 per 100 pounds—prices that are considered as dangerously high. There is, at the same time a persistent demand for the

better class of breeders, but these are scarce and held at extremely high prices, most of the offerings consisting of western range ewes. They are largely of Merino blood, and the western range ewes will raise good spring lambs when mated with rams of good mutton type.

Since the latest state quarantines against Illinois live stock the Chicago packers have been purchasing fat cattle of the lighter and medium weights, especially yearling steers and heifers, quite freely, with the object of slaughtering them and shipping the carcasses to various eastern markets that hitherto have been receiving live cattle unrestrictedly. There has also been a good deal of buying of fat cattle in Iowa and Indiana stock feeding districts for shipment to eastern points.

Last year James J. Hill imported and presented to farmers of Minnesota, the Dakotas and Montana, 50 young dairy Shorthorn bulls for the purpose of popularizing this class of cattle in the northwest. Good results are reported from various sections. Such cows are good milkers, and dairy Shorthorns are the farmers' cattle in Great Britain.

There has been a really remarkable falling off of the average weight of hogs marketed recently, the average weight of hogs received in the Chicago stock yards being only 214 lbs., or 13 lbs. less than a week earlier. At the opening of September the hogs arriving there averaged 244 lbs., while the receipts a year ago averaged 237 lbs. and two years ago 207 lbs., but at that time hog cholera was devastating the hog supply everywhere, causing owners to sacrifice their little pigs and underweights. Because of the great predominance of light hogs and pigs in the market, hogs of rather strong weights are selling the highest, with the best light hogs going at a decided discount. Pigs are showing up in much the largest numbers seen in a

long period, and pigs of all weights are seen daily, ranging from lots weighing up to around 130 lbs. down to lots averaging around 60 lbs. While the range of prices of pigs is very wide, even the most desirable offerings are selling at a big discount from prices paid for matured hogs. The recent average weight of the hogs and pigs marketed in Chicago was the lightest seen at any time since the latter part of November last year. Notwithstanding the fact that scarcely any hogs have been purchased in the Chicago market recently by eastern shippers, because of the quarantines made necessary by fresh outbreaks of the hoof-and-mouth disease, good local buying has put prices up to the highest figures recorded in more than a year. Fresh pork is in active demand, despite its advance in prices, while provisions are in very large domestic and export demand. Provisions have been advancing along with hogs, and while prices are still much lower than a year ago, pork advanced \$1.40 per barrel in a recent week. Within a short time hogs sold up to \$9 per 100 lbs.

The Iowa Beef Producers' Association expects to see great results from its newly planned scheme for encouraging the production of baby beef. The premiums to be paid for exhibits of young cattle in local and county fairs will undoubtedly help to attract attention of farmers, and furthermore a system of information as to methods necessary for successfully marketing prime little yearlings has been arranged for. While baby beefs are everywhere extremely popular, a majority of stock feeders have never had a clear conception of how to accomplish the best results, and only about one-fourth of the yearlings sold in the markets of the country come up to the right standard. Strictly prime yearling steers and heifers are great favorites and outsell the best heavy steers.

Ask for the RED-LINE

Buy boots that won't leak, peel, crack or split apart!

Goodrich "HIPRESS"
THE ORIGINAL
Brown Rubber Boots and Shoes
"With the Red-Line 'round the Top"

Made of the same, tough, wear-resisting rubber that's used in Goodrich Tires—by the famous Goodrich "HIPRESS" process—the new method, originated, perfected, and used only by Goodrich—that welds fabric and rubber under enormous pressure into one solid piece that stays together.

Goodrich "HIPRESS" footwear fits your feet while you're working—because it's shaped to the foot.

"HIPRESS" boots and shoes outwear leather—and they never need half-soles!

Sold and recommended by over 27,000 dealers. Do not be misled by color imitations. The genuine "HIPRESS" has the "Red-Line" 'round the top.

Dealer: If not stocked, write for samples and prices. This line sells fast.

THE B. F. GOODRICH COMPANY
"Best in the Long Run"
World's Largest Rubber Factory, AKRON, OHIO

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

Tell number of trees you tap

FARMERS—We are paying from three 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.

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.

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

HAY OUR NEW LOCATION—623-625 Wabash Bldg., Pittsburgh, Pa.
Daniel McCaffrey's Sons Co.

FRUIT Growers, we want your entire crop. Highest market prices. Write for stencil. **THE E. L. Richmond Co.,** Detroit, Mich.

Help Your Hens Moult. Tone Them Up

GILBERT HESS
M. D., D. V. S.



The quicker you get your hens over moulting, the sooner they will get on the job laying eggs. Moulting saps a hen's strength; to force out the old quills and grow new feathers needs lots of energy. Help your hens along with a tonic. In Dr. Hess Poultry Pan-a-ce-a you have a scientific preparation that puts vigor and health into your flock—it will aid their digestion, build them up, give your hens the vitality to ensure quick feather growth, tone up the dormant egg organs and help them lay.

Dr. Hess Poultry Pan-a-ce-a

A Tonic—Not a Stimulant
Formula printed on every package

My Pan-a-ce-a contains tonics, blood builders and internal antiseptics; it is formulated after a prescription of mine which has had a successful record for 22 years. In this prescription I have combined scientific knowledge with poultry culture; behind it is my long experience as a veterinarian, doctor of medicine and successful poultry raiser.

My Pan-a-ce-a is easy to feed—put it in the mash wet or dry. Pan-a-ce-a is sold by a reliable dealer right in your home town whom you know. Read my guarantee.

My new Poultry Book tells all about Pan-a-ce-a. It's free. 1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50 (except in Canada and the far West). Pan-a-ce-a costs only 1c per day for thirty fowl.

Dr. Hess Stock Tonic
Expels Worms
It's almost a certainty that your hogs are wormy right now. I guarantee that my Stock Tonic will positively rid your swine of worms, tone them up and help them put on fat. I advise you also to feed my Stock Tonic to your horses, sheep and cattle as they go from pasture to dry feed. It will keep them in fettle, enrich their blood, keep the bowels regular and is a splendid aid to digestion. But especially as a hog worm expeller it will pay you to feed my Stock Tonic now and all winter. 25-lb. pail \$1.60; 100-lb. sack \$5.00. Smaller packages as low as 50c (except in Canada and the far West and the South). Why pay the peddler twice my prices?

Dr. Hess Instant Louse Killer
Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or keep it in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy, sitting-top cans, 1 lb. 25c; 3 lbs. 60c (except in Canada and the far West). I guarantee it.

DR. HESS & CLARK
Ashland, Ohio

Fall Care of Weak Colonies

WEAK colonies of bees are seldom carried through the winter successfully, or made to produce anything like a satisfactory return the following summer. It may happen that they will come through the winter, but they will be so weak they will hardly build up enough before the honey flow to gather any surplus. You can, of course, help them along by taking some frames of brood from your strong colonies, but unless you are working for increase especially it never pays to do so. The stronger you can make your strong colonies the more surplus they will yield, and weakening them to help weak colonies will take more from their surplus than you can hope to have the weaker colonies produce. Weak colonies invite, also, all the ills that bees are heir to, and should be avoided on this account.

While, as I have stated, I would not advise keeping weak colonies over, yet there are times when it is desirable to do so from some special cause, but then we should make an effort to strengthen them as much as possible. In the fall while the fall flow is on and the strong colonies are rearing brood rapidly they will not feel the loss of a few frames, and in this way the weak colonies can be quickly built up. Take only fully matured capped brood for this purpose, though, for the queen in the weak colony will lay all the eggs the nurse bees can care for herself, so it would help none to take a frame of larva or eggs. The bees in the frame you use should be past the stage where they would need any attention. These bees will be quickly available for nurses and the queen can provide additional brood herself, and if the colony is fed some right up to cold weather it will stand a good chance of going into the winter strong. Such colonies have so many young active bees they hold quickly in the spring and build up more rapidly, often, than stronger colonies.

The greatest trouble in keeping weak colonies or trying to build them up in the fall is their liability to attacks by robbers. After the honey flow stops robbers get busy, and weak colonies are their prey, especially if they are attracted by getting a taste of the feed you are giving the others. Feeding should only be done at night, and care be taken to prevent any syrup being spilled outside. When robbers get started the average unprofessional bee-keeper will work in vain to stop as often as they succeed in saving the attacked colony. If there is a fair fall honey flow there is little danger from it. Experienced bee-keepers fail about robbing, for bees seldom rob when they can get honey from the flowers.

When it is found best to unite the colonies two or three can be united, or the weak ones can be given to other strong ones. Either way the procedure is the same. Take the weak colony and place it over the colony to to which it is to be united, first spreading a newspaper over the frames in the lower colony. If the colonies are allowed to run together at once the bees will fight and kill each other badly, but by having to gnaw their way through the paper first they will usually mix with but little fighting. Later, when the brood in the upper hive has all hatched, remove it, shaking all the bees down in front of the lower hive. Should you find that the queen has gone up into this hive you can take the frames having brood in them and put them below, being sure the queen is on one of them, and then put a queen excluder between the hives, leaving the one on top until the frames and any brood remaining are cleaned up. If the empty frames have any pollen stored in them you must look out or the moth will ruin them. If you have many frames that you wish to keep over you can kill the

moth by placing the frames in hive bodies set over each other and closed tightly and setting a saucer of bisulphid of carbon on top of the tier and covering. Bisulphid of carbon is poisonous and an explosive, so be careful in handling it around fire.

You can generally tell if the colonies are going to be too weak to winter shortly after the honey flow is over, and the sooner you unite them the better for the united colony should be ready for the winter in time for the bees to arrange their winter clusters before it freezes up. Disturbing bees after they have prepared themselves for cold weather is apt to make them winter less securely.

Kansas. L. H. COBB.

VENTILATING THE POULTRY HOUSE.

I have a 13x34 ft. henhouse, 7 1/2 ft. high in front, with a shed roof. It has five 4-ft. windows in front, the top-half muslin, and two small muslin ventilators near the roof, but does not give the required ventilation. I wish to know how to ventilate this building at a nominal cost.

Calhoun Co. L. O. W.

Your poultry house is damp because it is not ventilated properly. The majority of people think that it is most essential to have the ventilators on top, whereas, in order to take off the foul and damp air it is necessary to have the ventilators in the lower part of the coop, as both damp and foul air are heavy and will settle to the floor. As your coop is now ventilated, the pure heated air is all that escapes, and the foul air is left.

I would suggest that you close the ventilators near the top and take out the lower sash in all the windows and replace them with muslin curtains. If your coop is entirely light on all sides but the front, having the upper and lower sashes of all the windows covered with muslin will not be too much.

Sometimes, however, it does not permit of enough light, and it is necessary to either put in extra windows or leave part of the sash in the present windows, or the muslin curtains can be so arranged that they may be left up at all times except during very stormy weather. It might be an advantage to have every other window entirely covered with muslin and the others with just the lower sash so covered.

Occasionally coops are damp on account of their location. Very often there is considerable moisture that comes up through the floor, especially if it is an earth floor, or if it is a cement one which is laid directly on the earth. In order to make cement floors dry they should have a foundation of cinders, and an earth floor should be quite a little higher than the ground outside.

CURING SUNFLOWERS FOR CHICKEN FEED.

How can I cure sunflowers to be used as chicken feed? I have tried hanging them up in bunches and they would mold in the heads.

Van Buren Co. R. S.

The method you have used for curing sunflowers is the proper one, but probably due to the large amount of wet weather we have had, you had difficulty in getting them to dry out in the ordinary way. It is sometimes necessary to hang the flowers where there is artificial heat, especially when the weather is damp and muggy.

It may be that you have hung them together in too large bunches, or another probable cause of their moulding would be that they were picked before being thoroughly ripened. I am quite sure that these suggestions will lead you to the cause of the moulding, as we know of no better way of curing sunflowers.

BIG FOUR SUCCESSFUL POULTRY JOURNAL
The Practical Poultry Paper for Practical Poultry Raisers, devoted to the poultry interests of Michigan, Ill., Ind., and Wis. It should be your paper. Bright, Snappy and Alive. 50c 1 year, 3 years \$1.00. Send 12c in stamps for three months trial. Big 4 Successful Poultry Journal, 443 1/2 Plymouth Ct., Chicago, Ill.

BELGAIN Hares fine pedigree, bucks 4 months \$2.50 each. Utility bucks \$1.00 each, fine healthy stock. No Does for sale. Rose Comb White Leghorn Cockerels \$1.00 S. S. Hamburg Cockerels \$1. Riverview Farm, R. S. Vassar, Mich.

POULTRY.

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

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

BIRD LAWN BUFF ROCKS, 'S. O. Buff Leghorns B and Blue Orpingtons. Chicago, Madison and Minneapolis winners. Show birds after November 1 a few Black Orpington cockerels and pullets for sale at \$1.50 to \$4 each. Bird Lawn Farm, Lawrence, Mich.

FERRIS WHITE LEGHORNS FOR EGGS

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

Pine Crest White Orpingtons, birds ready for fall shows, pullets, and cockerels and Belgian Hares Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Rose Comb Brown Leghorn Cockerels from Mad. Sq. winners \$1.00 each. CLAUDIA BETTS, Hillsdale, Michigan

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

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

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

White Wyandotte a fine lot, male and female at low price and write your wants. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

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

FOR SALE—Thoroughbred White Plymouth Rock F and pullets. Fishel strain. Prices on request. WHITE ROCK POULTRY FARM, Gaines, Mich.

LET US TAN YOUR HIDE.

Cattle or Horse hide, Calf, Dog, Deer or any kind of skin with hair or fur on. We tan and finish them right; make them into coats (for men and women), robes, rugs or gloves when ordered. Your fur goods will cost you less than to buy them, and be worth more. Our illustrated catalog gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request. It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process which is a tremendous advantage to the customer, especially on horse hides and calf skins; about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address. The Crosby Frisian Fur Company, 571 Lyell Ave., Rochester, N. Y.

LET 'ER RAIN
If you've a man's work to do wear TOWER'S FISH BRAND REFLEX SLICKER \$3.

A. J. TOWER CO. BOSTON

TOWER'S FISH BRAND

FUNSTEN PAYS CASH FOR FURS
PRICES MUCH HIGHER

Bigger Money this year than ever in trapping coon, skunk, fox, mink, muskrat, etc. You can trap furs—we teach you how. Write for free book.

FREE 3 books in one. (Trappers Guide—Supply Catalog—Game Laws). Gives full information. Fur price lists and shipping tags—all FREE. Write today.

Funsten Bros. & Co., 655 Funsten Bldg., St. Louis, Mo. Largest in the World in Our Line

TRAPPERS
We want your furs—we pay highest prices—WE CHARGE NO COMMISSION. Send today for FREE price list and particulars of our FREE GIFT to Trappers.

HILL BROS. FUR CO. 362 N. MAIN ST., ST. LOUIS, MO.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
 Overseer—C. H. Bramble, Tecumseh.
 Lecturer—Dora H. Stockman, Lansing.
 Secretary—Jennie Buell, Ann Arbor.
 Treasurer—Frank Coward, Bronson.
 Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

INGHAM COUNTY POMONA MEETING.

Ingham County Pomona Grange was cordially welcomed to White Oak Grange by the Worthy Master, T. J. Gillam. The master of Pomona Grange being absent, ex-Master J. M. Bedell was called to the chair. Mr. Bedell thought that the meeting partook of the nature of a "family gathering" as all present seemed so glad to be at White Oak and enjoy the bounties of its hospitable patrons and feel the influence of the congenial spirit that pervaded the meeting throughout. The essential features to maintain a standard Grange were discussed by several members and proved a very interesting and helpful topic to the enthusiastic and tireless workers who are endeavoring to comply with the standard requirements.

The subject of providing a fund and establishing a scholarship at M. A. C. was taken up and valuable information given along these lines by Mrs. Florence Goodhue, of Lansing, and Miss Beryl Gillam, of Ypsilanti, who, as members of their respective alumni have come in close touch with this very commendable work. The time being limited it was decided to postpone the matter until a subsequent meeting, when a committee would be appointed for the purpose of getting necessary data and formulating plans whereby some of our deserving young people may be aided in their college work. Miss Gillam also gave a splendid discourse on the resources and possibilities of California, describing very vividly the leading features of the exposition, the natural beauties and wonders of the great west, and gave a graphic and humorous description of the trip across the continent and return, in company with her parents, making the trip in an automobile. This delightfully entertaining program of travelogue and new features of Grange effort, was interspersed with music and readings and the day will long be remembered as one of pleasure and profit to all who were present.—Mrs. E. J. Creyts.

AMONG THE LIVE GRANGES.

Vermontville Grange held their October meeting with a small attendance owing to the busy season. After the first of November the meetings will probably be changed back to Saturday afternoon when it is to be hoped that the attendance will be better. For the lecturer's hour a discussion on the benefits of a silo was opened by Master Patterson, with remarks by Bro. Gehman and others. A reading, "My Way of Husking Corn," by Sister Patterson, and another, "Our Parents," by the lecturer, closed the program. Needmore Grange met in regular form October 2. Master Glenn Earl and wife were elected delegates to the county convention and Mr. and Mrs. Henry Bedford. The program for the lecture hour, which was to have been given was carried over to the next meeting, which will be held October 30. Mr. and Mrs. Glenn Earl had a little surprise in store for the members by presenting them a fine motto, framed, which was hung on the wall, after which they were given a rising vote of thanks.

Suffering overcomes the mind's inertia, develops the thinking powers, opens up a new world, and drives the soul to action.—Anthony D. Evans.

Farmers' Clubs

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

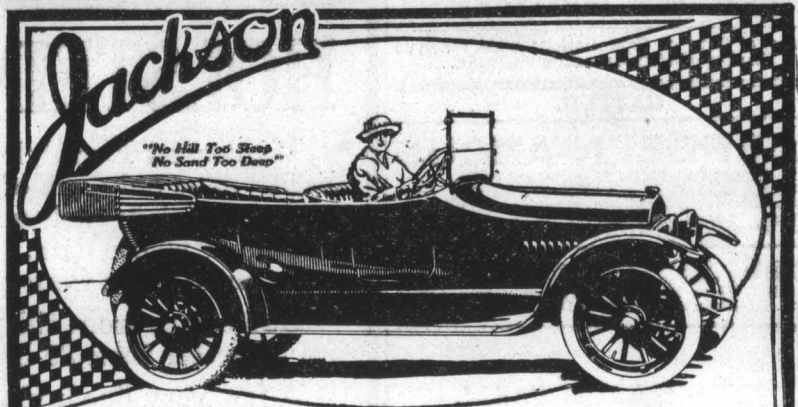
CLUB DISCUSSIONS.

Begins Active Season.—The Salem Farmers' Club is again holding regular monthly meetings, after an enforced vacation due to prevailing epidemics. The September meeting was held at the pleasant farm home of Mr. and Mrs. Walter Rorabacher. A goodly number assembled and a pleasant day was spent. A paper on "Reliability" was read by Mrs. Robt. Ross. Several good readings and recitations were given by members of the Club. Good music, vocal and instrumental, was given by the young ladies present.

Advocate Public Rest Room.—The Salem Farmers' Club held its October meeting at the home of Mr. and Mrs. Charles Ross. This meeting proved to be quite a gathering of old friends and members of the Club who had not met for some time and was greatly enjoyed. A beautiful dinner was served, and readings, recitations and music made the afternoon an enjoyable one. The subject of a rest room in the court house at Ann Arbor was discussed. Voted that a letter be sent to our supervisor asking him to use his influence in its favor. Club then adjourned.—Reporter.

Favor a One Week Agricultural School.—Clover Leaf Club held its regular meeting at the home of Dr. Chas. Smith the evening of October 12. After the business meeting was over the president brought to our attention that under certain conditions we could secure an agricultural school for one week in December. Many seemed in favor of fulfilling the conditions. An excellent program was given, including readings, recitations and musical selections. The question box contained many amusing and instructive questions, and the president appointed Mrs. O. S. Howe and Mr. Eugene Springer to answer them. A discussion was held on the possibility of obtaining a waiting room at the local crossing on the electric road. At the conclusion of the program partners were found for supper by the unique method of matching sections of cut post cards. The refreshments consisted of sandwiches and coffee. All pronounced the meeting a success and Dr. and Mrs. Smith royal entertainers. We will meet again in two weeks at the home of Mrs. Fred Weatherwax.—Mrs. Starr Fenner, Cor. Sec.

Man's vs. Woman's Work.—There was a good attendance at the October meeting of the Ingham County Farmers' Club in spite of the busy season, caused by so much unfavorable weather. "The Maples" never looked better and everyone there felt better for the outing, and surely Mr. and Mrs. Davis knew how to help people have a good time. After the inner man was fully satisfied, President Ives called the meeting to order and all joined in singing. "Is a woman's work more monotonous than a man's?" was the subject ably handled by Mrs. Lucy Jennings, who thought if woman's work was monotonous in preparing three meals a day, seven days in a week, 52 weeks in a year, man's work was equally monotonous in eating those 21 meals a week and 52 weeks in a year. Attending a meeting of the Farmers' Club was one of the best entertainments, then there were the ladies aid socials, fairs and so many things to go to, to break the monotony. Man's work had been monotonous this year for they had been in the oat field six times to cut the grain. If woman wants to be out of doors more, let her dig dandelions, dock or even Canada thistles. Mrs. Freer thought there was much difference in the environment. Man's work shop was out of doors and was interesting to plant the seed, watch it grow and to harvest the crop, while to market it he would touch elbows with his neighbor, while woman's work was largely within the walls of the home, the monotony being broken by visits of the groceryman and the gatherer of cream and she wondered why there was not one day in seven to fast as well as to rest. Mrs. Haskell thought that man's work in doing chores, the same thing over and over, was fully as monotonous as getting meals and washing dishes. Mrs. Davis thought the work this year had not been monotonous, at least it had been different from any other year. Mr. Swift gave the familiar quotation, "Man's work is from sun to sun, woman's work is never done."



Model 34 New Jackson Model "34"—112 inch wheel-base; 32x4 in. tires, fully equipped, including one-man top, electric lighting and starting system and Stewart Vacuum Fuel System. Motor 3 1/2 ins. x 5 ins. **\$985**

A Special Invitation to Readers of This Paper

We cordially invite you to visit our plant at Jackson, Mich., and see just how Jackson automobiles are made.

Come and get a first hand idea of the quality of materials used, the quality of workmanship, the thoroughness of construction and the great care exercised in finishing that gives Jacksons such permanent and lasting beauty.

We believe that the three new Jacksons are the best Jacksons we have ever built. We would like you to know the facts on which our conviction is founded. Come, see the

Three New Jackson Models

Model "34" Four \$985 Model "348" Eight \$1195
 Model "68" Eight \$1685

You will find that in every quality Model "34" outclasses any four or "six" you ever saw. It is really a wonderful car. Its smoothness and flexibility are simply astounding. It has one of the finest high duty balanced motors ever built. You will discover that it is one of the great successes of the year because it is one of the great values of the year.

Investigate all three models before you buy any car. And by all means write at once for the new Catalogue giving full information about the Jackson line.

Jackson Automobile Company

1508 East Main St., Jackson, Mich.

978 Woodward Ave., Detroit, Mich.

Solve This Puzzle and Win a Prize



Here are seven sheep in a pen. By drawing three straight lines you can put each one in a pen by himself. If you can do this we will send you as a prize, a packet of five beautifully embossed postcards lithographed in rich colors, and also a certificate of entry in our grand contest for a Ford Automobile. All you have to do is to enclose a two cent stamp in your letter to pay postage and cost of mailing.

Ford Auto Given Away

Remember the Ford will absolutely be given away at the close of the grand contest. In case of a tie a Ford will be given to each person so tied. Send at once so you can be entered in this great contest. Full particulars by return mail.

PEOPLE'S CO., 527 Popular Bldg., Des Moines, Iowa

ENGINE BUYERS! BE UP-TO-DATE

Why be satisfied with an old-fashioned, out-of-date engine when you can get a 1916 Ellis—"the engine ahead"—on a 30-day Free Trial and with a 19-year guarantee? Delivers full power on cheap kerosene; always on the job; never has to be potted or coaxed. 1 1/2 to 18 h.p. Interesting booklet, "Engine Facts," FREE. Don't miss it. ELLIS ENGINE COMPANY, 2862 E. Grand Blvd., Detroit, Mich.

Can You Sell Fertilizer?

Local representatives or traveling men familiar with the fertilizer trade in Michigan offered exceptional opportunity to act as representatives of long established company making a complete line of high-grade fertilizers. Write SALES MANAGER, Box 102, care MICHIGAN FARMER, Detroit, Mich.

Bean-Pickers—Try one of our \$4.00 bean-pickers which do the work automatically in the anthracnose spot so the operator can see it. Save big money by hand picking your unmarketable beans. Address JUDSON MICHIGAN CO., Durand, Michigan.

AGENTS WANTED

to represent a reliable concern canvassing among farmers in your own neighborhood or elsewhere. No experience necessary. Liberal pay, and supplies furnished free to right parties. Reference required. Address,

ADVERTISER, CARE THE MICHIGAN FARMER, Detroit, Michigan

Don't Miss the Big Money
 THE virgin soil that the stumps keep out of cultivation in the best soil you have. You can pull out an acre or more of stumps in a day at a cost of from 3c to 5c per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation.

HERCULES Triple Power Stump Puller
 Let us send you proof that thousands of farmers have made big money by the Hercules. Get our money saving proposition. HERCULES MFG. CO. 137 24th Street, Centerville, Iowa

We Make Portable Hand Pullers

BREEDERS' DIRECTORY.

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

CATTLE.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. TROJAN-ERICAS and BLACKBIRDS only. Also breeders of Forcheron, Hackney and Saddle Horses. Young bulls and Percheron stallions for sale. WOODCOTE STOCK FARM, Ionia, 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

The buyer of breeding stock should know that the herd from which he buys is healthy. We believe the Beach Farm Herd is as near perfect health as is possible. The tuberculin test does not show the least sign of reaction. We never had a case of contagious abortion. Have want a whole year without calling a Veterinary or giving a dose of Medicine.

WE OFFER FOR SALE

Registered Guernsey Bulls Very High Bred Grade Guernsey Cows Bred Heifers, Open Heifers and Heifer Calves. CAMPBELL & ANGEVINE, Coldwater, Mich.

GUERNSEYS—REGISTERED BULL CALVES

Containing blood of world champions. HICKS' GUERNSEY FARM, Baginaw, W. S., Mich.

GUERNSEY BULLS FOR SALE, ready for service from A. R. Dams. If you want the right kind write for price and breeding. BYERS & BARNES BROS., Coldwater, Michigan.

REGISTERED Young Guernsey Bulls, great grand-sons of Gov. Chene. Servicable age nicely marked, exceptional breeding. Avondale Stock Farm, Wayne, Mich.

FOR SALE A choice lot of Registered Guernsey cows, heifers and bulls of May Rose breeding. H. W. WIGMAN, Lansing, Michigan.

FOR Sale: 2 Registered Guernseys Male Calves 7 months old. J. O. CHALMERS, ANN ARBOR, MICH. R. F. D. 8.

Guernseys registered, for sale at Watervliet, Mich. May Rose breeding. Seven A. R. O. cows in herd. Address J. K. Blatchford, Auditorium Tower, Chicago, Ill

REGISTERED Holsteins—Herd headed by Alma Bonte Butter Boy. His dam has A.R.O. records as follows: at 2 yrs. milk 430, but or 18.85; 4 yrs. milk 604.8, butter 27.03; at 6 yrs. milk 620, butter 28.55 lbs. W. B. READER, Howell, 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 1/2 % 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.

I don't want to sell anything but HOLSTEIN BULLS

and I have some bull bargains. Don't buy a bull until you know I have not got what you want. Come and see bulls. L. E. CONNELL, Fayette, Ohio.

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.

Espanore Farm, LANSING, MICHIGAN.

Offers for sale, registered Holstein Cows bred to the great bull Pledge Spafford Calamity Paul. If you need a bull, write for prices and pedigrees of our bull calves.

CHASE S. OSBORN, ADAM E. FERGUSON, Owners.

Choice Holstein Bull Calves: One to 20 months old. Sired by Smithdale Alcatraz Pontiac, whose dam is the famous Alcatraz Polkadot, and from good A. R. O. dams. Will sell at reasonable prices. Come or write your needs. Farm 3/4 mile from Court House. SETH B. RUBERT, Howell, Michigan.

Top Notch Holsteins!

Before buying your bull look ahead and think of the fine herd you hope to own in a few years. Fifty per cent, or over, of its value depends on your bull. Therefore, get a good bull. And don't be too particular about the price if you can be sure of the quality. McP. Farms Co. sells bulls of strictly high quality. There use insures a successful, profitable herd. Write your wishes to McPherson Farms Co., Howell, Mich.

MONTH old registered Holstein heifer. Sire is son of former state champion cow, 32.94 lbs. of butter in 7 days. Very nice every way. \$100 brings her right to your station, safe arrival guaranteed. Write for pedigree. ROBERT W. FAY, MASON, MICH.

HOLSTEIN-FRIESIANS

Maplecrest Korndyke Hengerveld at the head of the herd. The only sire of the breed in service whose dam and grand dam each made over 1200-lbs. of butter in a year, and whose dam, grand dam and great grand dam each made more than 30-lbs. of butter in 7 days.

Bull calves from this great sire for sale, from cows up to better than 30-lbs. of butter in 7 days.

A few very fine heifers and young cows in calf to this bull for sale, at reasonable prices.

D. D. AITKEN, FLINT, MICHIGAN.

Duroc Jersey Boars and Sows

The Record of this Herd at Detroit Proves Conclusively that Our Durocs Have the Individuality and Blood Lines that Insure Good Results.

Choice Spring Pigs and Mature Stock. A large herd gives ample opportunity for selection. Send for our new circular and state your wants. Write, or better come. Swine Dept., Brookwater Farm, Ann Arbor, Mich.

Holstein Bull Calf 6 mo. old, 30 lb. sire and from a promising 2 yr. old dam \$60 with all papers. Elmer E. Smith, Redford, 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 4.15; 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.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

Reg. Holstein Friesian Bull Calves From heavy producing dams. Bargain prices. DEWEY C. PIERSON, Hadley, Michigan.

HOLSTEINS AND GUERNSEYS

Our Holsteins combine the blood of Belle Korndyke and DeKol 2nd. Our Guernseys are strong in Lady Gempsey, Glenwood Boy of Haddon, and Stranford's Glenwood of Pinehurst blood. Some fine bull calves of both breeds for sale. Boardman Farm, Jackson, Mich.

REGISTERED HOLSTEIN BULL, calved Jan. 2, 1914. Send for description. W. C. TAYLOR, Milan, Mich.

HOLSTEIN CATTLE and Duroc Jersey Swine. Choice pigs of both sexes now ready to ship. Prices reasonable. E. R. CORNELL, Howell, Michigan.

REGISTERED HOLSTEIN FEMALES. Choice 1 yearlings—Two year olds and matured cows. Haven't the room for them, must sell before winter. If interested come and see them. They are good stuff, in nice condition. J. M. WILLIAMS, No. Adams, Michigan.

We will take your note for one year at 5%—then why not buy a

Holstein Bull

at once, and get pick of 12 from best Breeding in Michigan. Send for prices and pedigrees. LONG BEACH FARM, AUGUSTA, MICH.

Purebred Holsteins Young bulls of best individuality and breeding at reasonable prices. Write us. G. L. SPILLANE & SON, R. D. 7, Flint, Mich.

For Sale Registered Holstein bull calf born Sept. 28, 1915. Dam's record 23.66. Inquire of Will Chrischinske, Imlay City, Michigan.

LAST BULL Sold to Mr. A. Fleming of Weidman, Mich. Just one bull left, age 10 mo. He's a bargain at \$200, breeding conformation considered. Brother to former world's record 3 1/2 yr. old Holstein. M. L. McLaulin, Redford, Mich.

MAPLE Lane R. of M. Jersey Herd. Tuberculin tested by the U. S. Government. For sale R. of M. cows, bull calves and heifer calves from R. of M. dams and grand dams and Hood Farm Sire. IRVIN FOX, Allegan, Michigan.

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. Herd headed by Majesty's Wonder 90717, one of the best sons of Royal Majesty. The daughters of Majesty's Wonder are mated to a son of Majesty's Oxford King. Herd tuberculin tested. We have for sale a few choice young bulls for fall service from high producing cows. Alvin Balden, Capac, Mich.

FOR Sale—Mature Jersey cows also heifers, fresh or to freshen soon. Heifer calves, 6 mo. to 1 yr. old. Also ready for service bulls. All from Reg. of Merit Stock. Waterman & Waterman, Meadowland Farm, Ann Arbor, Mich.

Jerseys. Bulls ready for service, extra quality sired by Jacobs's Fairy Emanon, No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

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

HILLSIDE Farm Jerseys, yearling bulls, solid in color, half brothers to ex-world's-record senior 2yr old and from R. of M. dams, with records from 400 lbs. to 800 lbs. C. and O. DEAKE, Ypsilanti, Michigan.

Milking Shorthorns 1 bull 8 months old \$125, 2 cows. DAVIDSON & HALL, Tecumseh, Michigan.

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

Shorthorns For Sale 8 young bulls also female, farm 1/2 mile east of Davis crossing, A. A. B. R. W. B. McQUILLAN, Howell, Mich.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered Bulls, Cows and heifers, Scotch-topped roans, and reds for sale. Farm at N. Y. Central Depot. also D. T. & I. R'y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

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

Dairy Bred Shorthorns of best Bates Strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

POLLED DURHAMS, milking strain, young stock. Mule none better. FRANK BARTLETT, Dryden, Mich.

Stockers-Feeders For Sale

100 head Heifers in good grass condition. Will weigh about seven hundred. Good colors, mostly red. Address Richardson Lumber Co., Alpena, Mich., or see the cattle at our headquarters, 14 miles east of Wolverine, Mich., which is on M. C. R. R. in Cheboygan Co. There has never been any hoof and mouth disease within over a hundred miles from where these cattle are located.

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.

Berkshires. Two fall gilts bred for Aug. & Sept. farrowing and a choice lot of April gilts for sale. A. A. PATTULLO, Deckerville, Mich.

Royalton Bred Berkshires—April boar well marked, also the fine mature boar Royalton Emperor. Both registered with papers at fair price. Write to D. F. Valentine, Supt., Temperance, Mich.

Registered Berkshires sold by the pound and shipped on approval \$30 each. Also Holstein bull one year Oct. 6. H. G. KEESLER, Cassopolis, Mich.

DUROC JERSEYS—A few choice spring BOARS ready to ship. Carey U. Edmonds, Hastings, Mich.

Duroc Jersey—March pigs either sex, also am booking orders for fall pigs for Nov. shipment. Inspection invited. E. D. Heydenberk, Wayland, Mich.

Capitol Herd Duroc Jersey Swine. Established 1888 Spring pigs for sale, satisfaction guaranteed. Express prepaid. J. H. Banghart, East Lansing, Mich.

Duroc Jerseys—Big Type, Heavy Boned Boars ready to ship. Volunter Grand Champion, F. J. Drott, R. 1, Monroe, Mich.

Durocs of the best of breeding. April farrow either sex or pairs for next 30 days \$20 each. Two fall boars. Oct. farrow \$30 each. Also Holstein bull one year Oct. 6. H. G. KEESLER, Cassopolis, Mich.

DUROC JERSEYS—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

DUROC JERSEY BOARS a choice lot of spring boars, not akin. W. C. TAYLOR, Milan, Michigan.

J. W. KEENEY, Erie, Mich. Breeder of Duroc Swine D. M. & T. local from Monroe or Toledo, Keeney Stop.

DUROC Jersey, Mar. & Sept. pigs either sex sired by a son of Volunter, Champion of 3 State Fairs and Chicago Show in 1912. E. H. MORRIS, Monroe, Mich.

HAMPSHIRE Swine—Breeding stock of all ages from most popular strains. Write for breeding inspection invited. Floyd Myers, R. 9, Decatur, Ind.

Big Type, O. I. C.'s and Chester White Swine.

400 fall pigs either sex, special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig, all our stock is good enough that I will ship O. O. D. and reg. free in the O. I. C. or Chester White Assn. We won, more prizes than all other breeders put together, at Ill., and Wis. State Fairs. Write for Show record.

ROLLING VIEW STOCK FARM Cass City, Michigan.

Chester Whites—Special prices on March boars for next 30 days. Fall Pigs. F. W. ALEXANDER, Vassar, Michigan.

O. I. C. SWINE—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept.? If you are, write me, I have them. A. J. GORDEN, R. No. 2, Dorr, Michigan.



I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10, Portland, Mich.

O. I. C. Serviceable boars, choice Gilts not bred, Spring pigs not akin, also Toulouse Geese. Write for low prices and photo. Alvin V. Hatt, Grass Lake, Mich.

O. I. C. GILT BRED SPRING PIGS ready to ship. H. J. FERLEY, Holt, Michigan.

O. I. C.'s—Bred sows, bred gilts, spring pigs both sex. Service Boars. Price low. A. R. GRAHAM, Flint, Michigan.

REGISTERED O. I. C. BOARS & GILTS High class fall pigs at reasonable prices. J. CARL JEWETT, Mason, Mich.

O. I. C. SPRING BOARS of good type and Red Polled bull calves. John Berner and Son, Grand Ledge, Mich.

O. I. C. SERVICEABLE BOARS. Priced to sell, and recorded in buyer's name. H. W. MANN, Dansville, Michigan.

O. I. C.'s STRICTLY BIG TYPE. March, April and May pigs Sired by Longty Prince, White Monarch and Frost's Choice, all big type boars and sows weighing from 600 to 700 lbs. with quality second to none. Can furnish in pairs not akin. Prices reasonable. Newman's Stock Farm, Marlette, Mich. R. 1.

O. I. C.'s two yearling boars and a lot of last Spring pigs not akin. Also a lot of this fall pigs \$10 each at 8 to 10 weeks old. Good stock. 1/4 mile west of depot. Otto B. Schulze, Nashville, Mich. Citizens phone 124.

O. I. C. Choice eighteen mos. old boar. Grand Champion at West Michigan State Fair 1915 and Mar. and Apr. gilts, also fall pigs. A. J. BARKER, BELMONT, MICH. R. No. 16.

O. I. C.'s Spring Boars ready for fall service. Write JULIAN P. CLAXTON, Flint, Michigan, R. 8.

Way Brothers Stock Farm. The home of the big boar for sale. Registered free. J. R. Way, Pompeii, Mich.

BIG TYPE P. O. Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000 lb. boar prospects. Absolutely no larger breeding. Everything guaranteed right. FRANK KRUGER, Ravenna, Mich.

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

LARGE TYPE P. C. Some very choice April and May Boars for sale. Brood Sow Sale in February. W. J. HAGELSHAW, Augusta, Mich.

Large Strain P. C. Two extra good Summer Yearling Boars. Bred gilts are all sold Spring pigs that are beauties, sired by Big Defend. The boar that everybody goes wild over. Come and see him. H. O. SWARTZ, Schoolcraft, Mich.

Big Heavy Boned Duroc Jerseys Write your wants. M. A. BRAY, Okemos, Ingham Co., Michigan.

Spring Pigs at Half Price—Bred from 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 Poland Chinas, boars as big, as good as grow up in Iowa with quality to please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

BIG TYPE POLAND CHINAS. Some choice boars now ready to ship. Satisfaction guaranteed. G. W. HOLTON, R. No. 11, Kalamazoo, Michigan.

Big Heavy Boned Duroc Jerseys for sale of all ages. Write your wants. M. A. BRAY, Okemos, Ingham Co., Michigan.

Spring Pigs at Half Price—Bred from 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 Poland Chinas with quality bred right. Feed right, and priced right to go to their new homes and do right. A. D. GREGORY, Ionia, Mich.

POLAND CHINAS The Large Prolific Kind

We have a SPRING BOARS At Farmers' Prices. ALLEN BROS., Paw Paw, Michigan.

For Sale Poland Chinas of Merit, Ayreshire Bull. B. M. WING & SON, Sheridan, Mich.

DOES THIS LOOK GOOD TO YOU To advertise our herd, and get you started right, we offer a few BIG TYPE POLAND CHINA pigs, at weaning time, (either sex) from 1000 pound sires and great big stretchy sows, of best breeding, for \$30.00 each if ordered at once, after withdrawn soon. Extra good spring boars and gilts for sale.

Hillcrest Farm, - Kalamazoo, Mich.

Big Type Poland China—Western bred extra large boned, Stock for sale. Pairs not akin. Satisfaction guaranteed. W. BREWBAKER & SONS, Elsie, Mich. R. No. 5.

POLAND CHINA Spring Pigs from heavy boned prolific stock. Also, Oxford Sheep, both sex at bargain prices. ROBERT NEVE, Pierson, Michigan.

REGISTERED YORKSHIRES

Imported Strain. Both sexes. Prices Reasonable. Hatch Herd, Ypsilanti, Michigan.

50 YORKSHIRES—All ages. Red Polled Cattle, Oxford Down Sheep, W. P. Rocks, I. R. Ducks, E. S. CARR, Homer, Mich.

Large Yorkshires Gilts bred for October farrow. Servicable boars. Pigs all ages. Prices reasonable. W. C. Cook, Route 42, Ada, Michigan.

Yorkshire Service Boars—Also sows and fall pigs, pairs not akin. No Cholera. Send for Photos. CHAS. METZ, Ewart, Mich.

Mulefoot Hogs—Weaning Pigs, Brood Sows and Pairs. Young service Boars. Pairs not akin. Write for prices. C. F. Bacon, R. 3 Britton, Mich.

Breeders' Directory—Continued on page 375.

Veterinary.

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

Out of Condition.—I have a mare 20 years old that has always traveled sound, never been sick, but seemed to get out of condition last spring and has not thrived since. Her teeth have been attended to. J. A. H., Ithaca, Mich.—Mix together one part powdered sulphate iron, one part of ground nux vomica, two parts charcoal, one part sulphate of soda and five parts of ground gentian and give her a table-spoonful or more at a dose in feed three times a day.

Stiff Hind Leg.—I have a horse that went wrong last spring, was stiff in both hind quarters, his left hind leg bothers him most and I am inclined to believe he has back trouble. A. D., Wolverine, Mich.—Give him 1 dr. of ground nux vomica and 1 dr. of acetate of potash at a dose in feed twice a day. Apply alcohol to stifle and hip of left hind leg daily.

Barbwire Cut.—I have a young cow that cut her teat quite badly on barbwire. I have been applying an ointment to heal the cut and also used a milking tube. The wound is now nearly healed, but I find it almost impossible to draw milk without tube. C. M. B., Mt. Pleasant, Mich.—I know of no better method than to dilate teat canal or use milking tube, but of course it should be boiled for ten or fifteen minutes each time before it is used.

Blind Teat.—I bought a cow from one of my neighbors; she gave milk from three teats. Before she came fresh she gave some milk out of the right hand teat and now since she came fresh a week ago, no milk comes from this one teat. A bunch is in bag just at upper part of teat and I would like to know if there is a cure for her. E. K., Millersburg, Ind.—I do not believe your cow will ever get well; however, you might apply one part iodine, seven parts fresh lard to the bunch three times a week. Also give her 1 dr. iodide potassium at a dose three times a day.

Luxation of Stifle.—For the past six weeks my five-year-old mare has shown some stiffness in one or both hind legs and is inclined to drag toe on ground. Part of the time she appears to be alright; is fully as bad when in pasture as when working. H. B. F., Jackson, Mich.—Clip hair off one or both stifles and apply one part powdered cantharides and four parts lard twice a month.

Wounded Thigh.—One of my best horses got cut on barb wire, making a gash eight inches long on thigh. I placed her in a sling, wound is healing fairly well, but hind leg stocks. F. A. H., Dixie, Wash.—Apply equal parts of powdered alum, oxide of zinc, boracic acid and charcoal to wound twice a day and give 2 drs. acetate of potash at a dose in feed twice daily.

Boils.—What treatment would you recommend for boils that appear on a four-year-old horse? I might add that so far as I can tell, the horse is that every other way. J. F. C., Pottersville, Mich.—Give horse a dessert-spoonful of Donovan's solution of arsenic at a dose in feed two or three times a day and paint boils with tincture of iodine daily.

Overheated Colt.—I have a young horse which I believe was overheated last summer, since then he has been out of condition. S. B., Marcellus, Mich.—Give your horse 1/2 dr. ground nux vomica, 1 dr. acetate of potash and 1/2 oz. of ground ginger at a dose in feed two or three times a day.

Chronic Cough.—I have a cow that had a cough for some time and the prescription you gave four weeks ago fails to cure her. Her breathing is very short, but she gives a nice mess of milk; her appetite is good. I also have a heifer that begins to show the same symptoms. C. H. P., Marquette, Mich.—You can safely use her milk and as she is in good health you need not worry about her cough. It is perhaps the result of dust and in time she will get over it. Nearly all cough mixtures contain opium, but it is needless for me to give you a prescription which contains it, because the druggist would not dare to fill it. Continue using the treatment I have formerly prescribed.

Swollen Glands.—Both of my cows have a swelling under jaw which appeared within a few days and I would like to know what can be done. The bunches in throat of one affects the breathing. A. B., Wayne Co.—Apply tincture of iodine to bunches three times a week and give 1 dr. of iodide potassium at a dose in feed twice a day.

Indigestion.—I have a horse which, when in stable, spends a whole lot of

time in gnawing his manger and if the wood were not protected he would chew it to pieces in a day or two. His coat is rough and lifeless; besides, he is in low flesh for a horse so well fed. M. A. M., Goodrich, Mich.—Give your horse 1 oz. of bicarbonate of soda, 1 oz. powdered charcoal and 1/2 oz. of ground gentian at a dose in feed three times a day.

Stringhalt—Partial Dislocation of Stifle.—My colt, 15 months old, seems to have stringhalt; when he walks he drags toes of both hind feet. When this colt is walking the joint snaps and he quite suddenly jerks up legs with a sort of jerk. R. F. T., Emmett, Mich.—I am quite inclined to believe that colt's trouble is in stifle joint and if you will apply one part powdered cantharides and four parts lard every two weeks, he will soon get better. If he has stringhalt, a simple surgical operation performed on each leg will perhaps effect a cure, but this is work for a Vet.

Bog Spavin—Thoroughpin.—For the past six months my yearling colt has been troubled with a swelling of both hocks. I first noticed the joints commenced to swell six months ago. The swelling was then small, soft and puffy. J. A. C., North Branch, Mich.—Clip hair off both hock joints and apply equal parts tincture iodine and spirits of camphor three times a week.

Sore Heads.—My chickens are troubled with sores on the head and some of them have sore eyes. When the eye becomes affected, they are pretty apt to lose their sight. They appear to be healthy and eat as long as they can see. F. G., Dundee, Mich.—Apply tincture of iodine cautiously to sore spots and when you can remove scab off sores, do so and apply iodine to fresh wound. Dust a little calomel on sores in eye once a day.

Looseness of Bowels.—Our turkeys are troubled with looseness of bowels and the disease appears to run its course in about two weeks, generally terminating in death. After the turkey takes sick, they lose flesh rapidly, grow very weak and usually die. M. F. P., Capac, Mich.—Dissolve 1 dr. of powdered sulphate copper in a gallon of clean water and let your turkeys drink it. You should try and ascertain the cause of your turkeys purging and by removing the cause you will prevent their sickness.

Infected Udder.—We have a cow that has been giving stringy milk for some time and I would like to know what to do for her. E. M. S., Brown City, Mich.—A chronic trouble of this kind, where the whole udder is infected, is incurable, and I do not believe she can ever again be made profitable for dairy purposes. Early treatment of the right kind is what is required in all udder ailments. By giving her a table-spoonful of fluid extract of phytolacca at a dose in feed twice a day and applying one part fluid extract of phytolacca and five parts wool fat to udder once a day with plenty of gentle hand-rubbing will prove beneficial.

Suppurating Foot.—I have a ewe with pus coming out of foot following several days' lameness of this sheep. J. B. S., Stanton, Mich.—Your ewe bruised her foot, causing suppuration. Apply tincture of iodine once or twice, then apply one part iodoform and five parts powdered charcoal covering foot with some oakum and a bandage. The foot should be dressed every day or two.

Exostosis.—We have a cow that had a lump on her lower jaw for two years; when we first noticed it it was about the size of a man's fist and has not increased in size any since. This bunch is as hard as bone and appears to be firmly attached to jaw bone. The cow is in good condition and I would like to know if this is a case of lump jaw. And will it have any bad effect on her milk? L. B. W., Wayne Co.—Her milk is fit for use and my advice is for you to leave her alone.

Barren Cow.—I have a cow five years old that fails to come in heat; had a calf when two years old; since then has been barren. Do you believe she will ever breed? E. B., Boyne Falls, Mich.—She will never breed and you had better fatten her.

Contagious Abortion.—Would like to have you give treatment for contagious Abortion in cattle. G. B., Beaverton, Mich.—When a cow aborts the foetus and afterbirth and stable litter should be burned. She should be removed from other female cattle, or pregnant live stock. Wet hind quarters with a three per cent solution of coal tar disinfectant twice a day and thoroughly cleanse your stable where she stood. Dissolve 1 dr. permanganate of potash in three quarts of tepid water and inject her twice a day. Give her 20 drops of carbolic acid in a quart of water as a drench daily for ten days. Don't breed her for 60 days. Also keep her away from balance of herd for three or four weeks. This ailment has spread through the carelessness of dairymen in not following up the treatment of their herd.

Annual loss \$35,000,000 through Smutty Grain
 "Could be prevented by using Formaldehyde"
 says U. S. Department of Agriculture

For the greatest yield this year you should treat all seed grains with the most up-to-date, cheapest and best method of seed cleansing we possess.

FORMALDEHYDE
The Farmer's Friend

The Standard treatment in this country for seed grains and so endorsed by U. S. Dep't of Agriculture. It positively prevents and destroys grain smuts, flax wilt; scab and black-leg on potatoes. It destroys disease germs in stables, kennels and chicken houses. It kills flies.

One pint bottle of Formaldehyde treats 40 bushels of seed—costs 35 cents

Write for big illustrated booklet—it tells of the many uses of Formaldehyde—sent free on request

PERTH AMBOY CHEMICAL WORKS
 100 WILLIAM STREET NEW YORK 1

FRIDAY JAN. 13th
FRIDAY JUNE 13th

These dates mean nothing to a "NEW-WAY" Engine because it "Goes and Goes Right" all the time.

Chas. Rathbun of Grand Rapids, Mich., says "Six years ago I purchased a 3 1/2 H.P. 'New-Way' Engine and have used it every day since for pumping water, grinding feed, and cutting wood. It always starts readily in hot or cold weather, being very economical in gasoline consumption. If I could not get another 'New-Way' I would not take twice what I paid for it."

Write for Catalog No. 28.

THE "NEW-WAY" MOTOR COMPANY,
 12 Kerr Street, LANSING, MICHIGAN

Acorn Water Bowl

on trial for Horses or cattle, if not desirable after 30 days use, return it at our expense and money refunded, connect direct to any water system, no float valve, only water in bowl under hinged disc, fitted for wood or steel stalls, ask for Catalog and price list.

METAL SHINGLE CO.
 122 Oregon Ave., Detroit, Mich.

Farms and Farm Lands For Sale

MOVE TO MARYLAND
 The State for Thrifty Farmers. Delightful, healthy climate. Good Land. Reasonable prices. Close to big markets of large cities of the East. Send for free descriptive booklet & map.

STATE BUREAU OF IMMIGRATION,
 65 Hoffman Building, Baltimore, Md.

WHY PAY RENT when you can buy the best farm land in Michigan at from \$12 to \$20 an acre on easy terms. Write for particulars.

STAFFELD BROTHERS, Owners,
 15 Merrill Bldg., Saginaw, West Side, Mich.

"FOR SALE—540 acres level productive farm near town 2,000 population, 38 miles Detroit and 30 miles Toledo, 4 sets good improvements. Will consider income property, stock good merchandise or western farm in part pay, balance easy terms. Address Box N 1016, in Care of Michigan Farmer."

Central Michigan Farms, general farming country. Splendid water, schools, roads, markets. Real bargain to offer. Write for list & Benham & Trim, Hastings, Mich.

200 ACRES—Loam soil, good buildings, fences, water, roads and market. 50 miles from Detroit, low price, easy terms or exchange for city property or farm near enough to city for summer home. Address Owner, MICHIGAN FARMER.

80 Acre farm for Sale, Barry Co., Mich. Old house in good repair, good farm buildings, fence and silo. Near Market. Address Jas. A. Elliott, 211 Post Bldg., Battle Creek, Mich.

140 Acres Good comfortable house, good barn, on main road. Plenty fruit and timber for farm use. 14 good dairy cows to make quick sale; all for \$3000, only \$700 cash. Hall's Farm Agency, Owego, Toga Co., New York.

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

SEND DESCRIPTION OF YOUR FARM OR RANCH! We have Cash Buyers. Don't Pay Commission. Write NATIONAL REAL ESTATE EXCHANGE ASSOCIATION: PERU, ILLINOIS.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Sheppman of the East"

Parsons Pure Bred Sheep

PARSONS, Grand Ledge, Michigan R 1

Black Top Delaine Sheep. Yearling rams for sale Registered stock only Fred E. Reichert, Elm Ridge Farm, Ann Arbor, Mich.

Oxford Down Sheep. Good Yearling Field Rams and ewes of all ages for sale. M. F. GANSSLEY, Lennon, Michigan.

Oxford Down Sheep and Polled Durham Cattle For Sale. J. A. DeGarmo, R. No. 25, Muir, Mich.

Registered Oxford Down Sheep. Ram Lambs. Yearling Ewes. L. N. OLMSTED, J. SPAANS, MUIR, MICH.

OXFORDS—any age. Priced right. I bought the entire B. F. Miller flock of prize winners. O. M. YORK, MILLINGTON, MICHIGAN.

OXFORD RAMS—42 registered Rams for Sale. Lambs, yearlings and 2 yr. olds. W. H. McCARTY & SONS, Bad Axe, Mich.

For Sale: A registered Oxford Down Ram. Ram lambs \$10 each. Also a few ewe lambs. Registered Berkshires, both sexes, Chase's Stock Farm, Marlette, Mich. R. 1.

FOR SALE—Rambouillet Rams \$12.00 per head also good ewes from one of best flocks in Michigan. J. W. GRAHAM, Davisburg, Michigan.

SHROPSHIRE RAMS
 Good big fellows with quality. Special prices on them this month. See our exhibit at Columbus and Detroit KOPE KON FARM, Kinderhook, Michigan.

Shropshires Ewes and Ram Lambs for Sale. DAN BOOHER, Marlon, Michigan.

Big Robust Wool-Mutton Shropshire Rams Priced right and satisfaction guaranteed or money back. Write today for Special Price List 24. A. H. FOSTER, Allezan, Michigan.

Shropshire 3 year-old stock ram, 2-year-old yearlings and lamb rams. Wool-mutton type. G. P. ANDREWS, Danville, Michigan.

SHROPSHIRE. Am offering 4 yearling rams, 8 ram lambs and 6 young ewes at reasonable prices. C. J. Thompson, Rockford, Mich.

Shropshire Rams and RAM LAMBS. Registered, large and well woolled. Write your wants. A. E. BACON & SON, Sheridan, Mich.

Merinos and Delaines—Large, choicely bred, long Delivered, priced to sell. S. H. Sanders, Ashabuta, Ohio.

Ten pure bred Hampshire Ewe Lambs. Will register. Wm. C. Smith, Rochester, Mich. Phone 31-F21.

Extra GOOD REGISTERED LINCOLN RAMS for sale. Prices reasonable. Robt. Knight & Son, Marlette, Michigan.

Leicesters—Yearling and ram lambs from Champion stock of Thubbs of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

HORSES

FOR SALE—Registered Percheron Stallion Maros 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.

1916

Maxwell

\$655

Including Electric Starter
and Electric Lights



The "Wonder Car"

The Acknowledged Automobile Sensation of 1916

The Lowest Cost Real Automobile

From the Atlantic to the Pacific, from the Gulf to the Great Lakes, in every City, Town and Hamlet, automobilists are lauding the 1916 Maxwell's power,—the 1916 Maxwell's beauty,—the 1916 Maxwell's luxury,—the 1916 Maxwell's complete and detailed equipment.

Everywhere, men who know motor cars, are marveling that \$655 now buys a beautiful, powerful, stream line, real, complete, full five-passenger car, with electric starter,—electric lights,—high-tension magneto,—demountable rims,—"one-man" mohair top, and every other feature and modern refinement known to the automobile industry.

The Car of Lowest "After-Cost"

Owners of the new Maxwell know that the first inspection, and the first ride, do not disclose the real worth of the "1916 Wonder Car." That only becomes apparent after week-in and week-out, year-round use. Then it is found that the Maxwell gives matchless automobile service and lowers all economy records for:

- 1st—Miles per set of tires
- 2nd—Miles per gallon of gasoline
- 3rd—Miles per quart of lubricating oil
- 4th—Lowest year-in-and-year-out repair bills.

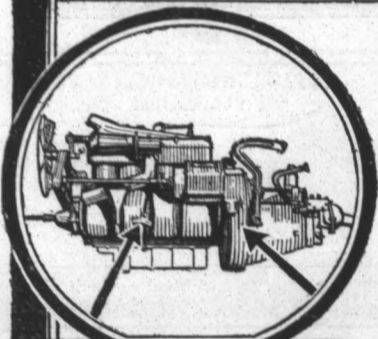
1916 Maxwell High-Priced-Car Features, all included for \$655

Electric Starter and Electric Lights	Electric Horn	Handsome Rounded Radiator and Hood	Easy Riding and Marvelous Flexibility
Demountable Rims	Double Ventilating Windshield (clear vision and rain-proof)	Linoleum covered running-boards and floor-boards	Unusual power on hills and in sand
High-tension Magneto	Aluminum Transmission Housing	Automatic Tell-tale Oil Gauge	Ability to hold the road at high speed
"One-man" Mohair Top	Robe Rail with back of front seat leather covered	Heat-treated, Tested Steel Throughout	Improved Instrument Board with all instruments set flush
New Stream-line Design			
Wider Front and Rear Seats			

Every feature and every refinement of cars that sell at twice its price

PRICE F. O. B. DETROIT

Write for 1916 Maxwell Catalogue, and the name of Maxwell Dealer nearest you. Address Dept. C. F.
MAXWELL MOTOR COMPANY, Inc., Detroit, Michigan.



4-cylinder Unit Power Plant with enclosed fly-wheel and clutch.



Demountable Rims are regular equipment of the 1916 Maxwell.

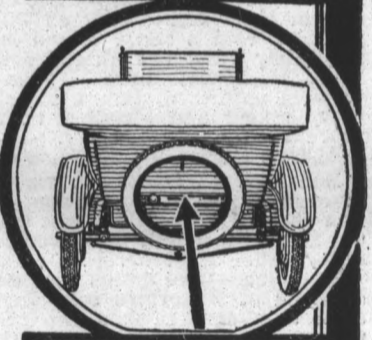


Front view showing the handsome lines of the new radiator and hood.

Built complete by the three gigantic Maxwell factories at Detroit, Dayton, and Newcastle.



Speedometer, fuse box, ignition, lights, battery regulator, all mounted flush on instrument board.



Note the compact arrangement of spare tire carrier, tail light and license bracket.



Perfect-fitting, "one-man" mohair top; quick adjustable storm curtains, rolled up inside of top.

16 Great Maxwell Service Stations—54 District Offices—Over 2,500 Dealers—all giving Maxwell service.