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

DETROIT, MICH, SATURDAY, JANUARY 15, 1916

## Estimating Timber In the Woodlot

By PROF. A. K. CHITTENDEN.

HERE are two ways in which standing timber may ordinarily be sold-by estimate, and by scale. The latter method is the most accurate and insures the owner obtaining full value for his timber, provided . that the price per thousand board feet, or other unit of measurement, is correctly adjusted. It necessitates the scale of all timber cut, and this means that the owner, or his representative, must be on the ground, in order to scale or measure the timber and to see that no timber is removed without scaling or measurement. Certain points must be guarded in a carefully worded contract, and the purchaser should be required to cut all or such portion of the timber as may be decided upon beforehand.

In the case of small woodlots a sale by lump estimate is often preferable. It may be inconvenient for the owner to attend to the scaling himself and the amount of timber involved may not warrant the employment of a scaler. Also, in a sale by estimate there is no danger that timber will be removed without payment and there is real value owing to ignorance of tim- cent if the logs are sound. For large no danger that the owner will lose ber matters. money by failure of the purchaser to cut any but the best trees.

sold. The estimate should be careful-Many cases are known where timber usually large, the actual mill cut over- ual tree.

Estimating the Individual Trees in a Michigan Woodlot.

Estimating Standing Timber.

An estimate of the timber on a small has been sold for less than half its runs the scale by from 10 to 20 per

logs the Doyle Rule gives too large

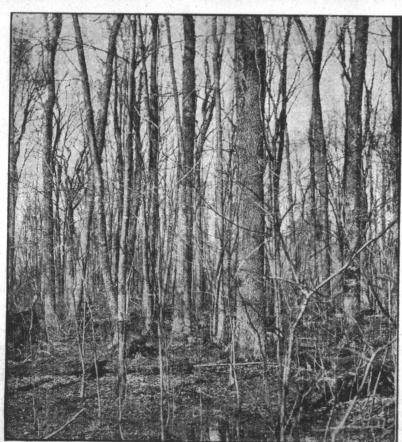
On a small tract it is best to esti-

mate every merchantable tree. On a larger tract, if the timber apparently runs fairly uniform and is not too patchy or irregular in distribution over the area, it is usually sufficient to estimate the timber on a portion of it and apply this estimate to the whole. Thus if 20 per cent of the area is actually cruised the result would be multiplied by five to make it apply to the whole tract. On a small woodlot of 10 acres or less an estimate of all the trees should be made.

Each merchantable tree should be inspected and the number and size of merchantable logs in it estimated. This individual estimate of each tree is particularly important in the case of mature woodlots as many of the trees, particularly beech, are liable to contain defects. Care must be taken not to estimate the same tree twice.

Method of Estimating.

The diameter at the top of each log should be estimated. In order for an inexperienced person to do this accurately the diameter of the tree at breast-height, four and a half feet above the ground, should be measured accurately. This can be done with a pair of tree calipers. If calipers are In scaling timber the logs are meas- not available, a circumference tape If timber is sold by scale as cut, a tract can be easily and quickly made. ured inside the bark at the top end of may be used or, for a rough estimate, careful estimate is not necessary. If If the estimate is to be in board feet the log. If the log is not round an av- the diameter may be estimated. The it is sold for a lump sum it is import- a copy of the log rule to be used erage diameter is taken. Defects latter method is uncertain. A circumant to know how much timber is being should be obtained. Timber purchas- which are apparent are allowed for in ference tape may be readily made. ers as a rule prefer to buy by the scaling each log. In estimating stand- The circumference of a circle equals ly made by the owner himself or by Doyle Rule, as it gives rather small ing timber, unless the estimator is an 3.1416 multiplied by the diameter. This someone in whom he has confidence, values on logs up to about 20 inches expert, it is safer to allow a general can be worked out for various diam-It is, of course, foolish to sell timber in diameter. Since the proportion of discount for cull rather than attempt eters, and the number of inches in ciron the purchaser's estimate alone, small logs on an ordinary operation is to make allowances for each individ- cumference corresponding to a given diameter marked on the back of an (Continued on page 59).



A Typical Michigan Woodlot of Beech and Maple Trees.



A Type of Michigan Woodlot with Scattering Saw Timber.

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Enterd as second class matter at the Detroit, Michigan.

#### DETROIT, JANUARY 15, 1916

#### A FEW LEADING ARTICLES OF THE WEEK.

Estimating Timber in the Woodlot. Practical instruction in methods of timber cruising......57 The Cost of Gasoline. A discussion of possible remedies for a threat-Mapping the Orchard. Describing a chart system for the location of Organization Key to Better Farm-

ing. A review of many ways in which organization will benefit ag-

Hogs by the Carload. Describing the methods used by a specialist Registered vs Grade Cows. An argument for special purpose dairy

Specializing-its Value in Poultry Work. The advantages of confining one's efforts to a single breed

#### CURRENT COMMENT.

The Rural Credit year the Michigan Problem.

During the past state. lished a

amount of matter relating to this subject, including a long series of articles by a member of the American Commisation among the farmers of Europe, another column of this issue.

to the publication of information re- eral farmer who may attend them. lating to various phases of the rural credit proposition. The time is rap- Hay vs. Soil port published by the idly approaching when public senti- Fertility. ment on this proposition should be serve the peculiar needs of the farm-ing data relating to the have ers of the United States.

As a means to the end of learning years. the trend of public opinion among the

The Lawrence Publishing Co. may be the case, it will be impossible to 18,713,000 tons, or 21.9 per cent of to give space to the publication of all tame hay in 1915. these communications, but the data The increase in clover alone is more Michigan along this line.

> Important Farmers' Meetings.

number of important farmers' meet- all tame hay in 1915. ings for January. First in importance

A notable feature of this meeting will be the first annual meeting of the Michigan Sheep Breeders' and Feeders' Association which was organized grown. last year. It is expected that this association will at once take an important place among the special live stock organizations as have the Michigan Horse Breeders' Association and the Michigan Swine Breeders' Assn, which have grown largely in membership and interest since their comparatively recent organization. Special mention is ened petroleum shortage.......60 made of this new organization for the reason that the Michigan sheep industry is in need of encouragement which to afford through the discussion and publicity which will attend its activ-

There is probably no general meeting of farmers in Michigan which brings together so progressive a class ing. Every farmer who is interested in breeding or feeding live stock of any kind should attend this meeting, as it will return him large dividends on the investment of time and money involved in broadening his knowledge lines, to say nothing of the pleasure derived from meeting some hundreds of his contemporaries throughout the

Of scarcely less importance to these Farmer has pub- stock feeders and breeders and of large greater importance to the general farmers throughout the state who do not make a specialty of live stock, is the meeting and exhibit of the Michision on the various phases of co-oper- gan Experiment Association noted in but relating particularly to co-opera- field tests of new varieties of staple tive credit organizations in the various crops conducted on the farms of the countries visited by that commission. members throughout the state are of Various editorial comments have also inestimable value to the farmers of been made relating to the need of both the entire state who should profit short time commercial loans and long greatly by the facts demonstrated at time mortgage loans by the farmers of this meeting and exhibit. These prothe state as a means of properly fi- grams should be carefully studied with nancing their business undertakings, a view to taking advantage of the op-Our publicity program along this portunity which they offer to broaden line has been almost wholly confined the knowledge of the special or gen-

> The monthly crop re-Department of Agriculture on December 30.

well crystalized, to the end that such containing the crop summary for 1915, enabling legislation as may be enacted as finally estimated by the Bureau of may be of a character which will best Crop Estimates, gives some interestbefore available

The hay crop was estimated by farmers of all sections of the state, so kinds of hay this year for the first far as the various phases of this prob- time by the bureau of crop estimates. lem are concerned, we should be glad The classification used was the same to receive communications on this sub- as that used in the last decennial cenject, expressing briefly and to the sus. This report shows that timothy point the writer's views. In this con-still leads in the tonnage of tame hay This report shows that timothy nection we should also be glad to have produced in the United States, the toninformation on the prevailing local in- nage being 19,504,000 tons, or 22.3 per terest rates for both short time com- cent of the total production of tame mercial loans and long time mortgage hay, as compared with 17,985,000 tons, loans and the adequacy of local capital or 26.1 per cent of the total production to meet the needs and demands of the of tame hay in 1909. The tonnage of

state. Should the response to this ever, decreased from 24,749,000 tons, marines of the Teutonic nations. suggestion be as general as we hope or 36 per cent of all tame hay in 1909,

contained will furnish very valuable surprising. The total tonnage of clomaterial for analysis and comparison, ver hay in 1909 was 3,158,000 tons, or particularly as to the extent and na- 4.6 per cent of all tame hay, while in ture of the needs of the farmers of 1915 it was 12,527,000, or 14.7 per cent of all tame hay. The increase in In this issue will the production of alfalfa was almost be found the an. as marked, going from 11,860,000 tons. nouncements and or 17.2 per cent of all tame hay in 1909, programs of a to 18,562,000 tons, or 21.8 per cent of

This increase in the acreage and among these is perhaps the live stock yield of both clover and alfalfa during meeting, which includes not only the the past decade promises well for the general meeting of the Michigan Im- future of our agriculture, since it proved Live Stock Breeders' and Feed- means not only an increased feeding ers' Association, but as well the meet- value in the hay in the maintenance ings of a large number of affiliated or- of the live stock upon the farms of the ganizations representing the several country, and an increased fertilizing breeds of live stock which have at- value where same is fed to stock upon tained special prominence in Michigan, the farms of the country, but as well the addition of a vast store of nitrogen and humus to the soils upon which these leguminous forage crops are

There is nothing that would promise more for the future of Michigan's agriculture than a corresponding increase in the area devoted to and tonnage grown, of these two crops upon the farms of our state. Particularly is this true of alfalfa, which can be profitably permitted to occupy the soil for a longer period in the crop rotation, thus adding to a greater degree to both the nitrogen content and humus content of Michigan soils, in which the lack of these requisites of fertility is the principal limiting factor of maximum crop production at the present

#### HAPPENINGS OF THE WEEK.

Foreign.
The European War.—The Anglo-French campaign against the Dardanelles has been abandoned. The entire forces have now been withdrawn without losses, according to the Allies' reports, but Constantinople says that the invaders were driven away under heavy fire, and the number of casual-ties were large. The British battle-ship King Edward VII has been sunk but officers and crew were saved. The Russians are advancing against the Teutons in Galicia having already occupied the left bank of the Stripa River. Little has been accomplished in the northern sections of the eastern line. Frequent artillery engagements featured recent fighting in the west but no general movements are reported. Early this week the French were obliged to abandon the summit of Hirzobliged to abandon the summit of Hirzstein. No further losses of territory
by either side are noted. Persistent
reports of an expected invasion of
Egypt by the Teutons continue to
come to this side of the Atlantic.

Last week the British Parliament
passed a compulsion act. The bill provides that all single men and widowers
between the ages of 18 and 41 execut-

between the ages of 18 and 41, excepting those who have other dependent persons to support, may be called upon for active military service. The action of the government is being action of the government is being strongly opposed by some of the labor organizations, and early this week the suffragettes were reported as being against the measure.

The American peace expedition is now receiving aid from neutral states of Europe. Norway, Sweden, Denmark, Holland and Switzerland will send delegates to The Hague, where a permanent peace board is to be organized to receive peace proposals from eever source they may come. from what-

Civil strife is reported in Hayti. plot to set up a new ruler has been discovered and the effort to restore order started a revolution last week.

except in census all grain owned in the country be takto conserve supplies for future en

Riots started last week in a plant at Youngstown, Ohio, which required the state troops to restore order. The authorities have heard confessions to the effect that foreigners had purposely started the strike to prevent the man-

racture of war munitions.

The Canadian government has undertaken to raise an additional half-million troops to aid Great Britain in the present war. Outside shore of the present war. Ontario's share of this contingent totals 162,000 men.

Relations between the United States and Germany and Austria have again been rescued from impending peril by the offer of indemnity for Americans

The Michigan Farmer farmers of any given section of the mixed timothy and clover hay, how- lost on certain vessels sunk by subcountries have also declared that hereafter ample warning will be given ships by the commanders of the undersea boats where sinking is contem-

National. In the trial of 11 former directors of the New York, New Haven & Hartford Railway, six were found not guilty, while the jury disagreed on five oth-ers. These directors were charged by the federal government with criminal violation of the Sherman Anti-Trust

Frances M. Webster, formerly ento-mologist of the Ohio Experiment Sta-tion, and with the U. S. Department of Agriculture for 20 years, died last week at Columbus, Ohio, where he was attending a meeting of the State Hort-icultural Society icultural Society.

William H. Bowker, of Boston, who has long been identified with the fertilizer industry of this country, died in that city January 4. He was the first graduate of the Massachusetts Agricultural College, having finished his course there 43 years ago.

#### MICHIGAN FARMERS' INSTITUTES, JANUARY 17-31, 1916.

County Institutes.—Eaton Co., Charlotte, Jan. 19-20; Ingham Co., Mason, Jan. 21-23; Clinton Co., Ovid, Jan. 25, 26; Mason Co., Ludington, Jan. 25-26; Gratiot Co., St. Louis, Jan. 26-27; Manistee Co., Bear Lake, Jan. 27-28-29; Kalkaska Co., Kalkaska, Jan. 27-28-29; Kalkaska Co., Mt. Pleasant, Jan. 27-28-29; Clare Co., Clare, Jan. 28-29; Midland Co., North Bradley, Jan. 31-Feb. 1; Benzie Co., Benzonia, Jan. 31-Feb. 1. One-day Institutes.—Allegan Co., Grafschaap, Jan. 17, Hamilton, Jan. 18; Burnips Corners, Jan. 19; Dorr, Jan. 20; Corning, Jan. 21; Wayland, Jan. 22; Trowbridge, Jan. 24; Plainwell, Jan. 25; Dunningville, Jan. 26.

Jan. 22; Trowbridge, Jan. 24; Plainwell, Jan. 25; Dunningville, Jan. 26. Berrien Co., Baroda, Jan. 17; Buchanan, Jan. 18; Niles, Jan. 19; Eau Claire, Jan. 20; Sodus, Jan. 21; Millburg, Jan. 23; Riverside, Jan. 24. Branch Co., Ovid Twp., Jan. 17; Bethel, Jan. 18; Butler, Jan. 19; Girard, Jan. 20; Sherwood, Jan. 21; Quincy, Jan. 23; Noble, Jan. 26; Batavia, Jan. 27

Calhoun Co., Pennfield, Jan. 24; Leroy, Jan. 25; Stanley, Jan. 26; Burlington, Jan. 27; Clarendon, Jan. 28; Eckford, Jan. 29; Rice Creek, Jan. 31; Partello, Feb. 1; Urbandale, Feb. 2.
Genesee Co., Davison, Jan. 17; Otisville, Jan. 18; Genesee, Jan. 19; Mt. Morris, Jan. 20; Montrose, Jan. 21; Flushing, Jan. 22.
Grand Traverse Co., Grant Center, Jan. 24; Kingsley, Jan. 25-26; Williamsburg, Jan. 27. Calhoun Co., Pennfield, Jan. 24: Le-

Grand Traverse Co., Grant Center, Jan. 24; Kingsley, Jan. 25-26; Williamsburg, Jan. 27.
Gratiot Co., Ashley, Jan. 20; Pompei, Jan. 21-22; Ithaca, Jan. 24; Elwell, Jan. 25.
Ionia Co., Clarksville, Jan. 17; South Boston, Jan. 18; Muir, Jan. 19; Orleans, Jan. 20; Orange, Jan. 21; Danby, Jan. 22.
Kent Co., Sand Lake, Jan. 24; Paris, Jan. 25; Whitneyville, Jan. 26; Ada, Jan. 27; Cedar Springs, Jan. 28; Caledonia, Jan. 29; Grattan, Jan. 31; Peach Grove, Jan. 17; Sparta, Jan. 18; Alpine, Jan. 19; Lowell, Jan. 20; Alto, Jan. 21; Carlisle, Jan. 22.
Lenawee Co., Cadmus, Jan. 17; Hudson Center, Jan. 18; Rome Grange Hall, Jan. 19; Adrian, Jan. 20; Fruit Ridge, Jan. 21; Blissfield, Jan. 22; Rollin, Jan. 26; Tecumseh, Jan. 27; Macon, Jan. 28; Holloway, Jan. 27; Macon, Jan. 28; Holloway, Jan. 29.
Manistee Co., Kaleva, Jan. 21; Pomona, Jan. 22.
Mecosta Co., Barryton, Jan. 17; Remus, Jan. 18; Millbrook, Jan. 19.

mona, Jan. 22.

Mecosta Co., Barryton, Jan. 17; Remus, Jan. 18; Millbrook, Jan. 19.

Montcalm Co., Greenville, Jan. 24; Trufant, Jan. 25; Howard City, Jan. 26-27; Lakeview, Jan. 28-29; Six Lakes, Jan. 31; Fenwick, Feb. 1.

St. Joseph Co., Burr Oak, Jan. 24; Colon, Jan. 25; Leonidas, Jan. 26-27; Parkville, Jan. 28.

Saginaw Co., Hemlock, Jan. 24; Lawndale, Jan. 25; Chesaning, Jan. 26; Birch Run, Jan. 27; Bridgeport, Jan. 28; Frankenmuth, Jan. 29.

Jan. 28; Frankenmuth, Jan. 29; Sanilac Co., Marlette, Jan. 25; Shabbona, Jan. 26; Argyle, Jan. 27; Snover, Jan. 28; Sandusky, Jan. 29; Carsonville, Jan. 31; Lexington, Feb. 1.

Shiawassee Co., Morrice, Jan. 14; Bancroft, Jan. 15; Durand, Jan. 17; Manle River Church, Jan. 18; Hender

Maple River Church, Jan. 18; Hender-

van Buren Co., Almena, Jan. 17; Hartford, Jan. 18; Bangor, Jan. 19; Covert, Jan. 20.

In addition to the above there will be a series of one-day institutes in Jackson county, Jan. 17-24, the places and dates of which will be published later.

"Farmers' Week," will be at the M. A. C., February 28 to March 4. In addition to the usual courses of former years, there will be courses in Bee-Keeping and Veterinary topics. There will also be a Country Life Conference on February 29 and March 1, with sev-eral speakers from other states.

#### ESTIMATING TIMBER IN THE WOODLOT.

(Continued from first page). ordinary tape. The following table gives the circumference of circles of

| tain diamete | ers in inches:         |
|--------------|------------------------|
| Diameter     | Circumference.         |
| Inches.      | Inches.                |
| 8            | 25.1                   |
| 9            | 28.3                   |
| 10           | 31.4                   |
| 11           | 34.5                   |
| 12           | 37.7                   |
| 13.          | 40.8                   |
| 14           | 44.0                   |
| 15           | 47.1                   |
| 16           | 50.3                   |
| 17           | 53.4                   |
| 18           | 56.5                   |
| 19           | 59.7                   |
| 20           | 62.8                   |
| 21           | 66.0                   |
| 22           | 69.1                   |
| 23           | 72.2                   |
| 24           | 75.4                   |
| 25           | 78.5                   |
|              | and and the Atamerakan |

it by a reasonable amount for thick- as a check if opportunity offers. ness of bark, the estimator decides how many 16.3 foot logs there are in the tree and at what point the top of corded as follows: each will come. In beginning such work it is well to cut a pole nine feet long and lean it against the tree to be estimated. Then step to a little distance and by comparison of the length of the pole and the tree it is possible to determine where each log length will come. A nine-foot pole should be used because stumps will be cut about 18 inches high and if an eight-foot pole were used and placed with one end on the ground, twice the length of the pole would give a log only 14 feet long. The upper logs in the tree are determined in the same manner. After a little practice the use of the pole can usually be dispensed with.

Where Judgment Must be Used.

Having determined the number of logs in the tree, the diameter at the. T top of each should be estimated. Allowance must be made for thickness by species and this should be done if of bark and taper. The thickness of the different kinds of timber bring the bark and the taper of the stem of different prices. In case of a large the tree vary with the species. The timber tract, or where the timber is average taper in the stem of a well- very evenly distributed, an estimate shaped, medium-sized, tree is from on a portion of the area may be made, two to four inches for every 16 feet in instead of a tree to tree count. Thus height. The butt log and the top log if the timber on 10 per cent of the often have more taper than the inter- woodlot is estimated the result multimediate logs. In the case of bass-plied by 10 will give the amount of

four inches for the top log. The esti-known. mator's judgment must be used in allowing for taper in each case.

The thickness of the bark varies with the species and size of the trees. and the distance of the section above the ground. The bark is usually thicker at the base of the tree than it is higher up. In general an allowance of three inches should be made for thick- be accurately measured, usually by per day and figure his profit on the ness of bark on oak, walnut, butternut pacing or with a tape. The center of entire operation. and ash logs over 24 inches in diameter, and an allowance of two inches for logs from 12 to 14 inches in diameter, and one inch for logs under 12 inches in diameter. In the case of beech, maple, hickory, basswood and cherry an allowance of about two inches should be made for logs over 24 inches in diameter and an allowance of one inch for smaller logs. Actual Having determined the diameter of measurements of taper and thickness the tree at breast-height and reduced of bark on a few trees should be made

> The Tally. The estimate may be tallied or re-

> > Total

No 16-ft logs

|   | TAO.  | 10-1  | L. 10    | Jes.   |                                       | Tota                                       | 1  |
|---|-------|-------|----------|--------|---------------------------------------|--|--|
| Diameter small end small end 111 121 121 121 121 121 121 121 121 12 | Beech | Maple | Basswood | Cherry | .sgoT 80 65 64 55                     | Scale<br>per log.                          | Total<br>9668 scale.   |
| 6   | : .   | : .   |          |        | 8                                     |  | 32   |
| 7   | 1:    | ::    |          |        | 10                                    | 4<br>9<br>16<br>25<br>36<br>49<br>64<br>81 | 90   |
| 8   | : 2   | : .   |          |        | 6                                     | 16   | . 96   |
| 9   | :     | :     |          |        | 5                                     | 25   | 125  |
| 10  | :     | 1     |          |        | 6                                     | 36   | 216  |
| 11  | :     | :     | *        |        | 4                                     | 49   | $\begin{array}{c} 216 \\ 196 \\ 320 \\ 405 \\ 1000 \\ 726 \\ 432 \\ 169 \end{array}$ |
| 12  | :     | :     |          |        | 5                                     | 64   | 320  |
| 13  | :     | : .   |          |        |                                       | 81   | 405  |
| 14  | ::    | ::    | :        |        | 10                                    | $100 \\ 121 \\ 144$                        | 1000   |
| 15  | : .   | : .   |          |        | . 6                                   | 121  | 726  |
| 16  | :     |       |          |        | 3                                     | 144  | 432  |
| 17  |       |       |          |        | 1                                     | 169  | 169  |
| 18  |       |       |          |        | 2                                     | 196  | 392  |
| 19  |       | ;     |          |        | 10<br>6<br>3<br>1<br>2<br>2<br>1<br>1 | 225  | $\frac{450}{256}$  |
| 20  |       |       |          |        | 1                                     | 256  | 256  |
| 21  |       |       |          |        | 1                                     | 289  | 289  |
| Totals  | 30    | 35    | 6        | 4      | 75                                    |  | 5194   |

The estimate can also be worked up wood, sugar maple and beech there timber on the entire tract. In esti-



The Housewife Appreciates Dry and Seasoned Stovewood.

the first log. That is, if the diameter convenient to take an exact per cent and increases its value. For instance out better than without any treatment? at the stump is 17 inches the diam- of the total area, so it is customary to the sale value of logs deilvered at the eter at 16 feet above the stump will be reduce the area actually estimated to track is greater than the stumpage about 13 inches, but the greater part one acre, and multiply this by the to-value by an amount equal to the cost wood stumps remain, their burning of this taper will be in the first two tal number of acres in the tract to ob- of making and hauling plus a reason- may be facilitated by boring one or feet above the stump. Therefore, if tain the total stand. Thus if five acres able profit for the person who does more holes in each stump and saturthe diameter of the tree is measured are actually estimated and the tract the work. There is, therefore, a larg- ating them well with kerosene before at breast-height, or four and a half contains 271/2 acres, the amount of er profit in selling logs than in selling burning. We have known of cases in feet above the ground, the diameter timber on the five acres estimated stumpage. It is also usually easier to which this practice has been followed. will be obtained above the butt swell- would be divided by five to reduce it dispose of logs than it is of standing If there are many remaining stumps ing, and it will ordinarily be safe to to a one-acre basis and then multiplied timber. Also if there is a consider- to remove, some other method would

until the top log is reached. It is best the entire tract. It is necessary that may be advisable to engage a portable to allow for a taper of from three to the area of the tract be definitely mill man to manufacture it into lum-

#### The Circle Method.

the circle should be plain, a rock, a

cle should be estimated and tallied in not be cut into logs or manufactured

ber because lumber sells more readily than either stumpage or logs and The circle method is the quickest brings a relatively better price. The and can be done by one man without owner should get the stumpage value assistance. The method consists in of the timber and, if he manufactures estimating all the trees within a circle it into logs or lumber, he should also of definite radius. A quarter acre cir- get a profit on the work as well. If he cle is best used. This is a circle with uses his own labor on this work he a radius of 59 feet. The radius must should figure his own time at so much

Before making a sale the owner stump, or a stick with a cloth tied should determine whether he will do best by selling the timber standing, in The logs in the trees within the cir- logs, or in lumber. The timber should



Cutting Cordwood for Fuel in the Farm Woodlot.

the same way as in the tree-to-tree on the chance of selling it afterwards. vided by two to reduce it to one acre. dispose of it at a profit, if at all.

Selecting the Plots.

In using this method, or any other ue is: method based on a partial estimate of the timber, care must be taken to locate the plots in places where average conditions exist. They must not all be taken in the best timber, or too large an estimate is obtained. Any error in the plots will be increased when the results are applied to the whole tract. Some plots should be taken in poor locations and some in good locations. The best way is to run through the tract on parallel lines, 20 or 40 rods apart and to estimate the timber in a quarter-acre circle every 20 or 40 rods, no matter what the condition of the stand. In this way an impartial estimate will be obtained. Enough plots must be taken to obtain from five to 20 per cent of the total area, depending on the nature of the value works out as follows: timber.

Stumpage Value.

After the estimate has been made the owner knows how much timber he has, but he may still be uncertain as to its value per M. Much depends upon the accessibility of the timber, the length of haul to the railroad or market. Standing timber is referred to as stumpage, and the price paid for standing trees is called stumpage value or stumpage price. Timber is sold standing, or in logs cut and delivered at some definite point, or in manufactured lumber. Each step in its manuwill be a taper of about four inches in mating in this way it is not always facture involves an outlay of money wood allow a taper of two inches per log by 271/2 to obtain the total stand on able amount of timber on the tract it perhaps be more economical.

count method just described. It is This will almost surely lead to loss. not necessary to tally each quarter- A contract or agreement for the sale acre on a separate sheet. They can should be made and the owner should all be entered on the same tally sheet find out what log lengths are desired. but it is necessary that the number of Particularly in the case of lumber is quarter-acre plots be recorded, as they it important to have specifications to will later be reduced to a unit of one work by. Different concerns use difacre. Thus if eight quarter-acre plots ferent stock and unless the timber is are measured the results would be di- sawed to bill it may not be possible to

A good formula for stumpage val-

Stumpage value = 
$$\frac{S}{10p}$$
 - 0

where S equals the selling price of the product, C equals the cost of operations, and p equals a fair percentage of profit.

As an example the cost of operations

| might be figured as follows: |      |
|------------------------------|------|
| Felling                      | 0.75 |
| Sawing into logs             | 1.25 |
| Skidding and loading         | 2.00 |
| Hauling                      | 2.00 |
| Milling                      | 4.00 |
| Piling, etc                  |      |
| Loading lumber and hauling   |      |

Total .....

If the mill run selling price of the product is \$20 per M. and a 20 per cent profit is allowed, the stumpage

$$\frac{\$20}{1.20} - \$12.50 = \$4.16.$$

The percentage of profit to be allowed depends upon the risk of the undertaking and local custom. In some cases it might well be higher than in others. A lumberman knows from experience what he can pay for stumpage, but the above formula is a

#### BURNING HARDWOOD STUMPS.

Is there any way of treating hard-ood stumps so they can be burned SUBSCRIBER.

Where only a few refractory hard-



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four-cylinder, 2-speed, light weight tractor built for con-Equipped with Hyatt roller bearings. Cut steel gears in dust-proof oil bath. All working parts perfectly lubricated, thoroughly protected from dust and easily accessible. Will pull the implements you now have on your farm, such as gang plows, harrows, mowers, binders, manure spreaders, wagons, drags and small road graders. Will operate your ensilage cutter, feed grinder, small separator, circular saw, water pump, hay baler—all your belt driven machinery. Write today for free folder illustrated in colors, or check coupon for information on any article in the E-B line of "good farm machinery."

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"Twelve years' use of Rock Phosphate at a cost of \$1.00 per acre per year, with legumes, has so enriched my land that I have averaged 5 tons of alfalfa per acre for seven years, 20 tons of silage, 115 bus. of corn, 881 bus. of oats, and 52 bus. of wheat per acre."
You can enrich your soil and grow the same crops at the same cost. Write us for full particulars of the Permanent Fertility System.

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American Sewer Pipe Co., 200 St. James St., Jackson, Mich.

#### The Cost of Gasoline

ers, but affairs are entirely different age of crude oil. today and the farmer is no longer living apart from the rest of the business gasoline fuel in the business of run- to her now might work a reciprocal ning their farms. Fuel in the farm tinuous hard service and home, lighting of the home, and power course, without considering the intersuitable for any size farm. Economical in various farm operations, cause a national ethics of the present situaof fuel—so simple anyone can run it.
tremendous consumption of gasoline tion. tremendous consumption of gasoline tion. on the farm. And now, last, but by no means least, farmers are using automobiles for business and pleasure as oline is our greatest hope. This is up well.

The Farmer and the Automobile. When automobiles first came into prominence much antagonism was cre- since the war began, let me assure city drivers did not help in allaying he has been engaged in an infinitely this prejudice much, and about the more important field of endeavor, the only danger we have had in this country of creating a class hatred has ic point of view, on fuel consumption. come about through the advent of the automobile.

the value to him in his business as well as in the family pleasure of the automobile, and upon the possession of converting kerosene and other light of an automobile much of his prejucome about a saner operation of automobiles in general.

Used.

ket, one might say, therefore, gasoline again, shortly. has become almost a scarce article. Competition has very much yet to do with the price at which it is sold, but every indication points to a genuine scarcity of supply. This can, therefore, have but one outcome. Gasoline mont. will go up in price until a point is reached where the cost will cause an economic balance in the amount used.

There are some points to be considered in this matter. First, the discovery Diseases," Prof. J. H. Muncie. ery of new oil fields would very naturally check such an advance; second, an embargo, if declared, on the shipment of gasoline abroad, would have a similar effect, and third, the discovery of some way of converting kerosene Soy Beans," illustrated, P into gasoline would bring into the field Harper, Purdue University. the enormous supply of kerosene which now is actually a drug on the market.

1.- Discovery of New Oil Wells.

Of the discovery of new oil fields we have hope. Unquestionably there is still undiscovered oil in this country, but the records of the wells in operation at present show that the crude oil from Penpsylvania and the east is oil from Pennsylvania and the east is superior to the western oils in the amount of kerosene and gasoline content. As Pennsylvania and the east Local experiment associations, Prof. tent. As Pennsylvania and the east J. F. Cox. have been pretty thoroughly covered, we must look to Oklahoma, Colorado V. M. Shoesmith.

Announcement of awards, J. Robt. and Wyoming, and the west for the

A year ago what seemed to be a in Oklahoma. Gasoline became very cheap as a result. The weil began to fall off in supply, until now it is operating at not more than 50 per cent of the original connection. Short talks by senior farm crop students on the following subjects: "Varieties of Alfalfa," "Sudan Grass," "Treatment of Hard Seeds," "Types of Corn for the Silo," "Hogging Down at the original connection." very promising oil well was uncovered its original capacity. Result—gasoline has soared again and engineers who appreciate the true situation have been really alarmed over the state of affairs.

If the war terminates with the next

FTER a period of low prices we made available. Indications do not at are again confronted with an present make clear that any great reapparent scarcity of gasoline. A lief is to be expected from the discovyears ago this condition would ery of new oil fields. The indications have caused no concern among farm- are that we are facing a genuine short-

2.—Is an Embargo Likely?

An embargo is not to be expected. world. In the matter of fuel and mot- It is doubtful if it would be good busior power the cost of gasoline is of ness, for the greatest hope of the fuvery great concern to him. In fact, ture is the assistance of Russia in the while many city people use gasoline development of her oil fields and an cars for pleasure, farmers are using embargo on our refined oil, gasoline, injury to us later on. This is, of

3.-The Conversion of Kerosene Oil.

The conversion of kerosene into gasto the chemist and while we have heard so much about the failure of the American chemist to make dye stuffs among farmers. Irresponsible you that he has not been idle. In fact, saving of the nation, from an econom-

To Dr. Walter F. Rittman and others belong the greatest honor of achiev-But presto! almost overnight the ing fame in this work. He has discovfarmer awakened to a realization of ered or, better, worked out (for scientific truth is a result of work and not chance discovery), a practical method petroleum oils into gasoline, and it is dice against them has vanished. Of already being produced in substantial course, at the same time there has quantities. Let those who think the American chemist has been idle bear in mind what we have had to say in Gasoline the Only Fuel which can be these columns before on this subject. If America emerges the economic lead-Gasoline is about the only fuel that er of the world, after the present Euso far can be used in motors. Kero- ropean war, don't fail to remember sene is used some, but evidently no that the American chemist has had a carburetor has been designed which very important function to perform in makes the use of kerosene feasible in that capacity. He is performing it automobiles. From a drug on the mar- now! We will discuss this situation

#### FIFTH ANNUAL MEETING MICH-IGAN EXPERIMENT ASSN.

Thursday Afternoon, January 20. President's address, C. B. Scully, Al-

Reports of delegates of local associations. "Winter Barley," Professor F. A.

Spragg.

"Michigan Grains and Seeds on the Market," Prof. J. F. Cox.

Thursday Evening, January 20.

"The Culture of Sweet Clover as a Farm Crop," illustrated, H. S. Coe. of U. S. Department of Agriculture.

"The Production and Utilization of

"The Production and Utilization of Prof. J. D.

Friday Morning, January 21.

"Some Causes and Remedies of Red Clover Failures," H. S. Coe, U. S. Department of Agriculture.

"Fertilizers, Farm Manures and Fer-tility," Dr. H. J. Wheeler, American Agricultural Chemical Co., Boston. "Michigan Soil Fertility Probelms,"

Report of secretary-treasurer, Prof.

Business meeting.

Business meeting.
Friday Evening, January 21.
Short talks by senior farm crop stu-

"Results from the Use of Lime and Fertilizers," illustrated, Dr. H. J. Wheeler, American Agricultural Chemican Co., Boston.

See association exhibits in Room 310 and exhibits appropriate the property of the content o

year, as we all hope, then the imand exhibits prepared by senior farm mense resources of Russia could be crop students in Room 311.



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Did you ever see any other 8 H. P. Engine two men could carry? Cushman engines are the lightest weight farm engines in the world-easy to move around and put to work anywhere. No longer necessary to put up with old-style, back-breaking, heavy weight engines, with their violent explosions and their fast and slow speeds. The Cushman weighs only about one-fifth as much, per horsepower, but with its modern design, accurate balance and Throttle Governor, it runs much more steadily and quietly.

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Sizes up to 20 H.P. Not cheap en-gines, but cheap in the long run. Book free B MOTOR WORKS

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#### THE FUTURE OF THE FARM TRACTOR.

What effect will tractors have on farm operations and farm economics, also prices of land, and farm crops?

These are questions that the near future will answer. The tractor business as applied to farm operations is in its veriest infancy. While a few of the larger farms of the east use motor power in working the land, it amounts in the aggregate to very little, as compared to the work done by horse pow-This condition will change by leaps and bounds in the next few years.

The trouble with tractors in the past has been their cumbersomeness; they have not been practical, except on some of the great farms of the west. So while they have been in limited use quite a long time, they have not come into general use over any considerable farm area.

Now the time has come when there are being made tractors both light and strong, and at a price within the reach of the ordinary farmer and the farmers will be very quick to take hold. I have heard more tractor talk among farmers and would-be farmers the last six months than talk on any other farming subject. The general use of the automobile by farmers the past few years has opened their minds to carrying the motor idea farther still as a means to enable them to do their work easier, better and do more of it.

Tractors will Stimulate Production. One thing is apparent: the use of tractors cannot help stimulating the farm industry. I will mention a few of the advantages of tractor use on the farm. In the first place, time is the essence of success on the farm as in other business. Most farms lack team help enough to properly do the work, and get it done on time, especially in fitting the land and getting it into crops. The success or failure of a crop often hinges on a few days, and sometimes hours, in getting a crop into the ground. This will be removed by the use of the tractor, the tractor does not sweat, have the colic, can be run day and night if desired, put on the lights and run a night shift when necessary—stop and figure what this means in a busy time.

At the prices horses have been the past few years, the small farmer could ill afford to keep enough horses to do the work in the rush seasons. The loss of a horse, which often happens. is a serious thing, too. The tractor may get out of repair, by wear or breakage, but it can always be repaired some way. There are few places on the farm where the tractor will not be eventually used, not only in fitting the ground and getting in the crops, but these same crops will be hauled to market by motor.

It is quite a chore after driving a team all day, to plow a beggarly two or three acres, to have to unhitch, unharness, curry down, water and feed, in addition to the other chores. With the tractor all you have to do is to climb off the seat and go.

This will all revolutionize things a good many ways. It will mean more crops grown, as more acres will be planted or sown, because more can be gotten in; also it will make for a larger acreage farmed through the greater attractiveness of farming. Whether it will affect prices or no, is a problem. Yet the tendency of supply and demand is to be always one close behind the other, and it will probably remain so. One thing certain, the farm tractor is going to be a thing to be reckoned with in the next ten years—aye in the next five.

Isabella Co. WM. J. COOPER.

Look the farm implements over carefully to determine if any repairs or replacements are necessary. Order needed repairs at once and avoid expensive and annoying delays when the implements are needed for immediate

## plements

John Deere Spreader The Spreader with the Beater on the Axle

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

Mounting the beater on the axle (a patented feature) does away with half the types of castings. Three exclusive features of the John Deere Spreader: [1] Beater on the axle—simply revolutionary in spreader building. Nothing else like it. Doubles the value of the spreader by all practical tests. Makes the John Deere Spreader possible. [1]



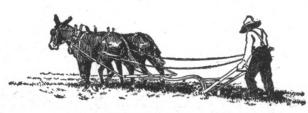
#### John Deere Plows for Light Tractors High and Level Lift

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Extra beam and bottom, readily attached, increases regular two bottom plow to three, or regular three bottom to four, as desired.

Equipped with Quick Detachable Shares—save 80% ime changing shares. Write for free booklet.



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SYRACUSE shares fit perfectly—extra shares go on easily. A smooth joint is formed between share and moldboard and share draws up snugly to its place.

Remember that Syracuse cast shares are chilled throughout their entire cutting edge and point. The under side of point and cutting edge is also chilledof vital importance in preserving the proper pitch and extending the period of usefulness.

Two bolts in the share instead of one and there is a rib on back of share that strengthens share and standard. Lug holds moldboard and share closely

In addition John Deere Syracuse Plows are built with long handles, which produce steady running qualities and make the plow handle easily in the

Write for free literature on the 31 series, combination plows, for use where land is somewhat rolling or where it is desired to turn furrows smoothly up or down on sloping land.

Also the 342 series, combination plows, for use in sandy or gravelly soil, turf or stubble; the 26 series hillside plows, light weight, clean turning plows that do excellent work in hillside or level land.

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

[3] Ball Bearing Eccentric—apron driven with-out friction. This ball bearing apron drive requires no attention, not even oiling, but it performs wonders in the working of the

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



#### John Deere Corn Planter The Accurate "Natural Drop" Planter

A CCURATE-because it has the "Natural Selection" drop.

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

A full variable drop. Merely shift foot lever to plant two, three or four kernels per hill. Drilling distances varied and change from hilling to drilling or back to hilling made just as easily.

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this challeng at 6 h. p. or more which is lighter in the test of the mechanical department of any state college in the union; will send a Galloway Masterpiece Big Six, of smaller bore and shorter or include heavy load test, each engine mounted on the same kind of base. 4. A cooling test to determine which engine requires the least attention to keep cool. 5. Actual brake horse power of each engine when speeded up to the same hundred on the same speed. The same speed as the Galloway. When the test is over the mechanical department of the college to publish their comparisons, and determine: 1. Which engine cooled the best. 3. Which engine cooled the best. 3. Which engine cooled the best of the testing room. 5. Which engine cooled the best of the same speed as the Galloway. When the test is over the mechanical department of the college to publish their comparisons, and determine: 1. Which engine pulled its load with the least vibration, easiest and steadiest. 2. Which engine cooled the best. 3. Which engine cooled the best of the college to publish their comparisons, and determines of each engine just as it comes from the crate, no expert or representative of any manufact, urer to be in the testing room. 5. Which engine cooled the best of the same speed. The same speed as the Galloway of the same speed as the Galloway of the same speed as the Galloway of the same speed.

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Large fruit, of a beautiful dark red, in quality unsurpassed, in flavor sweet, slightly touched with acid; in keeping quality ranking with the best; coming out of storage in April in perfect condition—the True Delicious makes an ideal apple for the orchard. There is very hardy. We advise every farmer to plant it. You will never regretic We are headquarters for fruit trees, as well as for ursery stock and seeds of all kinds. We retail good rees and seeds at wholesale prices—not new and unried novelties, but reliable well-established hardy, vestern grown stock that we can recommend. 30 yrs. a business selling by mail. Tree and Seed Book free.

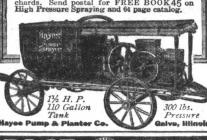
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Double Jap Calendula and Children's Botanical Garden, a curiosity collection of flower seeds. With this collection we send rebate check for 10c, and big catalog of
world's finest seeds.

### Mapping the Orchard

vesting of the fruit as economical as problem. possible. Even in the home orchard consisting of twenty or thirty trees, it is an advantage to have the different varieties located near each other unless the selection of the proper site In every orchard trees will occasionally die and in order to keep the land earning the right amount of money as possible, usually the first spring after the loss.

Advantages of Orchard Chart.

the coming spring can be planned and planting cabbage, cauliflower, tomato, this order will include the trees lack- and all similar seeds. ing in the orchard. If the order is given in a haphazard manner, the or- smaller than the size of the pit. The the orchard for the ripening fruit or both. possibly some trees of certain varie-

N the commercial orchard it is nec- can be indicated on the map and the essary to consider the location of work of placing the nursery order for varieties in order to make the har- the next spring is not a very difficult

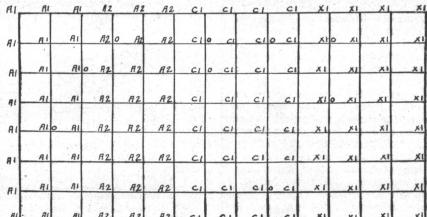
Ingham Co. R. G. KIRBY.

#### MAKING A HOT-BED.

For small hot-beds the most commakes this arrangement impossible. mon method is to dig a pit from one to two feet deep and fill with manure, tramping it down, and if dry adding plenty of water. The manure must be these trees must be replaced as soon fresh for if heated once it loses much of its strength and will not be satisfactory for the purpose. After tramping and wetting, cover with rich mel-In the winter the nursery order for low soil to a depth of six inches for

Build a frame for the bed a little chard will soon consist of a miscellan- object of this is to let the frame seteous collection of varieties which can-tle evenly with the bed and avoid opnot be harvested without a large ex- enings in the sides. The north side pense. In the early spring it is some- of the frame should be made the hightimes difficult to tell the variety of a est, so as to give a southern exposure tree and at planting time the newly to the top and protect the plants from purchased trees will frequently be the north wind. Bank around the planted among varieties ripening at a sides well with dirt or manure. Cover different time and then at harvest the beds with glass or canvas and in time many hours are lost in searching cold weather it is a good plan to use

The glass sash used to be quite ex-



A Practical Orchard Chart.

ment.

careless planting of the trees and is year. always a sure indicator of the number I have seen peach orchards where ev- into the open ground. ery vacancy had been filled without regard to the adjacent varieties and that orchard was a great source of PLANNING FOR FRUIT AND VEGEworry at picking time.

How the Chart is Made.

A heavy piece of cardboard that to squares and the intersections rep- above the probable snow line. resent trees. Zero stands for the vacancy in the orchard HARRIS BROS. SEED CO., 250 Main St., Mt. Pleasant, Mich. fall and jotting down the zeros. These dening, like in everything else, good

ties isolated from the remainder of pensive, but can now be bought very that variety are left unpicked and only reasonably. A sash, size 3x6 feet, is found after they are too ripe for ship- generally used in this work. They last indefinitely when care is taken The map of the orchard prevents and where they are kept painted each

Next is to test the soil for warmth of trees needed to fill in vacancies. On occasionally with a thermometer by going through many commercial or- inserting it under the surface in difchards it is surprising how many va- ferent parts of the bed. After it becant spaces may be found. If these comes warm the seed is sown in long spots were all indicated by a zero narrow rows. The temperature is on a map the orchard owner would then kept at about 80 to 90 degrees rapidly plan to fill them with trees of and the soil moist. We give some air good quality similar to the varieties on warm days and as the plants get already planted. This is not so im- larger we leave the beds open much portant in the small home orchard but of the time in order to produce healon a commercial scale fruit must be thy, thrifty plants that will be hardharvested with the minimum of labor. ened when ready for transplanting out

MRS. E. O. SWOPE. Penn.

#### TABLE GARDENING.

Winter mice and rabbits may be can be filed or pinned up in the farm girdling your trees. If so, bind strips office will make a substantial orchard of tar-paper around each tree thus atmap. This cardboard can be ruled in- tacked, high enough, however, to be

Having given thought to the planand this mark ning of your next season's fruit can be made with a hard pencil so to your next season's vegetable garthat it can be erased when the vacan- den, and the variety you wish from cy is filled. If the ruling of the card- the one and the things you wish to board is made with India ink one map plant in the other, do not forget the will stand all of the erasing that will important matter of pruning and dibe necessary for several years. Apples viding and setting and anticipating can be marked, A; Cherries, C; Pears, careful cultivation. Get all the gar-P; Plums, X; Peaches, \*, etc. The den tools and implements which you varieties can be marked with numer- will need in working properly. There als. For example, Al might be the will be spades, hoes, lawn mowers, Spy; A2 the Wealthy, etc. After such trowels, knives, sprayers, etc., to a man has been finished the work of think of and to select from the best keeping it up-to-date simply consists devices offered by progressive manuin going through the orchard every facturers. In fruit growing and gartools facilities good workmanship and brought \$13. There was sold altoare great time-savers.

freshness of strawberry patches which are so protected that the ground does mant season, is due to the slight bacterial action which goes on in unfrozseason of the year, all ground which has a heavy covering on it is apparbare. When we have heavy snows ing season is a normal one the crops usually do better. Because of this fact snow has often been called the poor man's manure.

Those who had intended to cover \$1,088 per acre. their strawberry patch and have not done so, had better do so now than not at all, as the covering, even if put WHERE TO PLACE FRAME LIMBS. on as late as it is, will protect the plants to a great extent. In fact, some strawberry growers wait until the shown the writer that fruit growers ground is well frozen before putting are very generally making the mistake on the mulch.

not practiced extensively it is one of the most beneficial practices in the sult is that these limbs pull against care of strawberries. It does as much as any practice toward the growing of good strawberries and a heavy mulch Of course, nothing can be done after of any kind, gives best results.

#### A PROFITABLE GARDEN.

How much an acre of land may produce is still a debatable question.

Great yields have been reported, but who knows that the limit has been reached? Where double cropping can be practiced, the yield can, of course, be greatly increased, and under intensive methods where all of the essenfair prices obtained, the value of the one point. When the trees are first produce from an acre of land, to some, might seem fabulous. The past seaable for our garden operations, and I tle. Here is a warning tip to everyone not exceeding one-fourth of an acre. kind this spring. This plot is a gravel loam, with a surface soil of ten or twelve inches. It has been fairly well manured for several years, with barnyard manure and is in good tilth. About one-fifth was a strawberry bed, the balance having been in cultivated crops. The crops the past summer were strawberries, early cabbages, early potatoes, peas and a few onions, followed by celery as a second crop. The potatoes, Irish Cobbler, were brought from the cellar on your pepper plants by dusting the and put in shallow boxes in March, plants with pyrethrum powder, which and kept in a fairly warm and light room, where they threw out strong Most any druggist will be able to fursprouts, and were cut two eyes to a nish you with this powder. piece and planted, sprout up, early in April. The cabbage plants, Jersey that only powder which has been kept Wakefield and Copenhagen, were under a tight cover should be used, as grown by a grower in South Carolina it deteriorates upon exposure to the and were received the second week of air for any length of time. It is not April. The onion plants, Prize Tak- poisonous and will not injure the plant ers, were furnished by the same grow- in any way, no matter how freely it er and were shipped with the cabbage is applied. plants. The cabbage were a little slow in taking root, but the onions were are experiencing with your ferns, will very fine, all making a vigorous say that the blight is attacking them.

The strawberries were caught by the er parts of the more tender leaves. frost that killed the early bloom, but part of July, or as soon as the berries preferred. If a single plant, one of later, the last being set the last week ease, it may be that you are keeping

except those used by the family ture and heat.

gether, \$54 worth of the first crops and \$218 from the celery crop, making \$272 VALUE OF STRAWBERRY MULCH. from both crops. I grow celery in double rows, the rows six inches apart Undoubtedly much of the vigor and and six inches between the plants in the rows, and five feet between the double rows. This five feet gives amnot freeze any time during the dor- ple space for banking, and as the plants grow nearly as large in this way as in single rows, I save half the en ground in winter, which changes labor of banking, as two rows may be a lot of unavailable plant food into banked almost as easy as one. Grown available form. Regardless of the in this way, an acre of ground will set approximately 30,000 plants. I grow White Plume and Golden Self-blanchently richer than that which is left ing. My aim for several years has been to secure quality above all else which remain well through the winter and by the use of an irrigation system the ground is in much better shape on my upland I am enabled to outclass than in other years and if the follow- the celery of swamp land, selling mainly at retail in a nearby village. I am enabled to get top prices and it will be seen that the estimate given for the one-fourth acre, of \$272, will equal

New York. B. F. MACK.

Inspection of many orchards has of placing the frame, scaffold or prin-Although strawberry mulching is cipal limbs much too close together on the trunks of their trees. The reeach other, either in pairs on opposite sides or in "severals" close together. the start has been made unless it be wiring the limbs together from opposite sides of the center. But this is a makeshift method. It is not a tenth as good as preventive measures. Among these the one best is in having at least a hand breadth of trunk between the union of one limb with the trunk and the union of the next limb above or below. Double or three times this distance would be all the better because it would still further tial conditions can be maintained and reduce the amount of leverage at any set in the orchard this distance looks far too great but when the tree is ten son has been, with us, rather favor- to thirty years old it will look too litshall give the result on a small plot, who is planting an orchard of any

M. G. KAINS.

#### TROUBLE DEPARTMENT.

Lice and Blight.

My pepper plant has little green lice on it. What can I do to get rid of them? And the end of the leaves on my fern all die off, some that are about an inch out of the ground.

Kent Co.

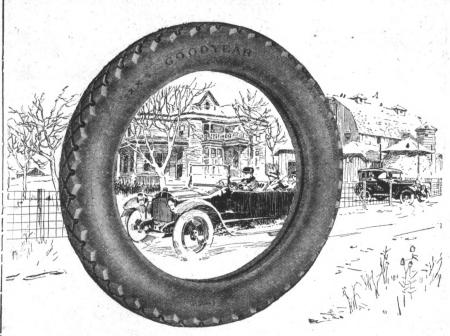
Mrs. J. C. K.

You can control the little green lice also goes under the name of bubach.

The only precaution necessary is

With reference to the trouble you The tender growing tips are most sub-The cabbages and potatoes we began ject to this, although occasionally to market about the twentieth of June. blighted spots will appear on the low-

The treatment consists of cutting the crop, though limited, was of fine away all blighted parts and spraying size and quality commanding top pric- the remaining foliage with a good The plot was plowed the early fungicide, a Bordeaux mixture being were off, and set to celery. The ground the commercially dried Bordeaux will on which cabbage, potatoes, peas and probably be the most convenient to onions grew, was set to celery a little use. As this blight is a fungous disthe plant too wet, especially the sur-The strawberries were sold to con- face of the soil. Fungous diseases desumers at sixteen cents per quart, and velop where there is plenty of mois-



## How We Protect Our Good Name

To you Goodyear quality—which we believe to be the highest it is possible to put into a tire means service and utter tire satisfaction.

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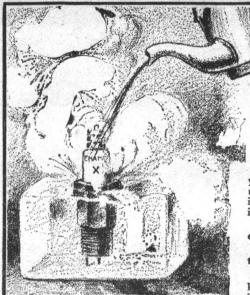
Because they excel in these fundamentals, they excel in tire-life and tire-satisfaction.

Goodyear Tires are not as low in price as many of the close to two hundred brands made in this country.

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The Goodyear Tire & Rubber Company Akron, Ohio





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When you 'light the gas' under your cold spark plugs the effect is much the same as if you poured boiling water on a spark plug half buried in a cake of ice.

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36 Main St.,

Marysville, Ohlo,

### Marketing the Residue

wastes becomes an increasing- live stock markets. ly interesting and profitable question for farmers to consider.

not there is competition between dif- cial market, particularly when selling ferent agricultural districts, and be-direct to consumers, he can find sale tween different individuals in local for all the products raised upon his communities. As a result of the work- farm if he increases the number of ing of this law of competition we find that the production of certain crops is to find sale for everything produced localized. The central western states are today producing a large portion of from the over-production of some the nation's corn crop, Michigan furnishes a liberal per cent of the beans and potatoes, Kentucky tobacco, and them. Florida and California citrus fruits. On The law of competition has shown the due to the production of too many communities best suited to the production of these products.

same process is going on. The best farmers are enlarging their farms and city or to work for their more enter. so that in handling greater economy prising neighbors, for wages.

#### A Question for the Individual.

As time goes on this struggle becomes more keen, and he who best comprehends his whole business, produces economically, sells his staple goods to the best advantage and converts what his neighbor wastes into dollars, will survive longest. It is well, then, that every progressive farmer look to his methods of handling the residue, the inferior grades, the by-products, etc.

If the whole scheme of disposal of duced to one single system for every tention here. Some person of prophetic vision would have discovered the necessary rule to follow and given it to the agricultural world, which would have satisfactorily settled the entire question

But the question is an individual one. It is like the construction of your farm buildings, while you may gather ideas and suggestions from others, you must put those ideas and suggestions together to conform to your own particular circumstances in order to attain the maximum of convenience and comfort consistent with your means. So, in getting dollars out of what our forefathers considered nothing, we must apply the same method.

#### Feeding to Stock.

ing waste products. Today the man who grows sugar beets cannot afford to leave out of consideration the disposal of the beet tops. The feeding value of these beet leaves add a respectful amount to the crop income. Either the grower should have stock pay for the feed.

Bean growers ought to keep sheep, sufficient to clean up the bean pods. When harvested under the right conditions these pods furnish a roughage feeding value of the pods.

The retention of the full value of city. corn fodder by ensiloing, the proper feeding of skim-milk, whey, butter promoting this form of organization milk, are all items having a direct may be seen not only in times of financial interest to nearly every farm. peace but in times of war. The world er in the state.

or in part. The production of better lars. crops leaves less that is unmarketable. Proper orcharding gives more No. 1 fruit and less for the ungraded pile. corn and will leave less that must be up with wheat.

HE economic disposal of infer- forced upon the hogs in the fall to ior grades of farm products and make and further glut over-crowded

Again, our plan of farming may need to be changed. It frequently hap-Whether we recognize the fact or pens where one is catering to a specrops grown. This would enable him and thereby eliminate waste resulting crops and an inability to supply customers with other products wanted by

On the other hand, leaks may be crops. This is usually the case where a man is growing staple products that And in every local community the go upon the regular markets. His farm operations can often be simplified to enable him to produce a better quality the inefficient men are going to the of crops and a larger quantity of each can be practiced.

#### By Manufacturing.

Or, products that are wasted on the average farm may be turned into dollars by manufacturing into merchantable goods. Just recently a progressive farmer stated that his men would be manufacturing tomato pulp into catsup during the month of Jan-Tomatoes that would not go onto his regular market were carefully washed, sterilized by heating and then placed into five-gallon cans during the fall to await the time when they could be manufactured into catthese secondary products could be re- sup. Another case is the conversion of inferior grades of apples into cider farm the matter would not need at- or vinegar, the canning of surplus fruits, vegetables, the manufacture of jellies, etc. In all probability farm manufacturing will occupy a broader field in the future than it has in order to give productive labor to farm hands during the winter months.

Of course, we cannot shape our whole farming business to take care of every insignificant waste. The primary products of the farm must necessarily be given the largest consideration. But as competition becomes keener it will be more and more apparent that the farmer who nicely combines the growing of primary products that will return the maximum income with a system that will care for the waste incident to his regular line, is certain to have a decided advantage over the farmer who counts Feeding is a common means of sav- all of the residue products as a total waste.

#### AUSTRIA'S AID TO AGRICULTURE.

In a just sense, if Austria's aid to agriculture had to be justified, it might be said that any reasonable to consume them or he should find sums thus invested may fairly be resomeone who has such stock and will garded as returning to agriculture only a part of the working capital which had previously been taken away from it through all the years by a commercial banking system, well intended to accomplish what it has accomplished, quite as satisfying as a fair grade of or helped accomplish through Austria clover hay. The farmer's account and throughout the civilized world, books at the close of the year should namely, the taking of the wealth creshow a credit to the bean crop for the ated in the country and using it for the commercial development of the

And the value to the nation from has but recently witnessed a prompt Then besides feeding, another valu- over subscription, largely by the comable method of disposing of certain mon people, of a war loan in this wastes is to eliminate them entirely, country of over three billions of dol-

H. I. Anderson, of Montana, showed up in the Chicago market recently with a shipment of a carload of choice The better selection of seed corn and more careful cultural methods will increase the percentage of merchantable corn and will leave less that must be seed that must be seed that must be seed to a carload of choice hope of his own feeding which topped that market. They were hardly a year old, having been grazed on alfalfa all the past summer and then hardened

#### Organization Key to Better Farming

than to himself.

His product is announced in gross quantity when unmerchantable grades or stocks, being as a rule more or less potatoes are reckoned as bushels of consumers is not among the items of his knowledge.

Right here is the crux of the question of organization. The men who raise oranges know the crop facts; the men who raise apples and potatoes do for example, the co-operative elevator not know. The orange growers are in or warehouse, with grading and stana small section of the country and are dardization a legal feature of the manorganized; the potato growers and ap- agement. Credit facilities would be ple growers are widely scattered and afforded by the proper hypothecation do not know crop conditions, as a con- of the products within or without the sequence they are made to compete elevator, with an even flow of products one with another. Price making by the under a system of united advices in buyer or speculator is a martialing of some one, or more, central points. To forces against small details of unor- the whole business world this would ganized producers.

When once the price of a farm product is made the added costs of transportation and distribution must be added and a low price gives greater margin for gains. It is a common saying that prices go up when once the crops are out of the farmer's hands; then condition of buyer and seller are much more equally balanced. This is suggested when we say wheat or corn, for stableizer that could be introduced. example, are strongly held or are in

The same would be true if producers were organized, and fed the crop on to the market as needed for consumption. With some exceptions, the storage of the great staples may be safest and cheapest done on the farm.

#### Marketing and Credit.

It is at this point that the market- A HOUSE FOR THE FARM BUTCHing question and credit question become closely related. The staple crop in an elevator is an easy credit asset at the banks. The interest charge and price when moved. In other words, it the great current of the river, and its while advancing toward its destinathe way of market movements in the bins of the farm granary are not in the trade language, "visible supply," nor are they readily known credit assets in banking circles.

Many conscientious bankers say service of credit, as far as it is needed and is possible. Yet as a matter of fact nearly all grains in transit and cheap structure. elevator storage are financed by the bank, but only a small amount in the hands of the farmer.

#### All Business Should Co-operate.

through the elevator insurcontrol. This aid to existing credit lard, as well as washing clothes, makfacilities is primarily one of the farm- ing soap, boiling potatoes and pumper to plan and arrange. He should in kins for hogs, and cider for apple butturn have the sympathetic interest of ter and mince pies. all classes of business people, for it

HE watchword of the present would be to their benefit as well as time is organization. From the his own. From a strictly private view standpoint of the farmer as the point the farmer may be to blame for beginning of production, there must be not being prompt to the day in paying organization, for without there is com- a note at the bank. From the wider petition in selling. This competition view the bank and other business deto the point of ruinous under-pricing pendent on the farm have been willing is not in accord with modern business to see the farmer's business unorganmethods. The farmer has in addition ized and not being in position to meet to this the disadvantage of his produc- the demands with promptness. Surtion being a matter of public knowl- rounding every city in the United edge. His output is in fact better States in a general sense is what the known to those outside of his class German people call the Hinterland, supply source, the bread basket if you will, and this territory is a real part of the city in an industrial sense. Since all futures' dealing is forbidden local, are unknown to him. The small in the German Empire, the use of bank funds is made to serve the legitiproduct. The increasing number of mate purpose of production and distribution.

#### Farm Organization Benefits Whole Communities.

An organization based on the modern idea of unity for service would be. be a blessing. It would make steady prices to the producer and consumer. It would enable transportation systems to operate without so much congestion. It would employ the finances of the country without dangers now incident, and make the farmer in reality a part of the business world in bank uses, and prompt payments. In fact, it would be the greatest business Agricultural problems are not one of the farmer alone, but of the whole peo-To awaken the business world to the realization is one part of the work, and to organize on the part of the farmer is another. Business relations are so interwoven that there is little place for class feeling.

Shiawassee Co. J. N. McBride.

#### ERING.

Farmers' hog killing for home concarrying cost is simply added to the sumption, is not usually done until quite cold weather, and sometimes not is like a raft which has gotten into until after Christmas. It is generally done out of doors, and it fremovements are subject to control, quently happens that the day appointed is cold, raw, and snow-squally. In tion. The same products not yet in bad weather butchering out of doors is very disagreeable work, causing people to catch cold, making butchering day dreaded. I am of the opinion that on every farm where there is much butchering to be done, there should be a building on purpose for it. that farm products have already the It should stand as near the water supply as possible, and if not built in a conspicuous place, may be a plain

My father built such a one, in which we could scald, dress, and cut up our hogs, and be warm and comfortable, even on the coldest day. At one end This all leads back to the starting there was a chimney, a big fire-place, point of organization. Elevator or and crane, that would hold two big warehouse certificates of grain actual- kettles for heating water. One end of ly in the storage or legally hypothe- a large scalding barrel was let down through the floor to the ground, in ed and grade established even in the order to make it stand firmly, with farm granary, could be made to serve the top leaning against the platform as an easy asset for credit. However, on which the hogs were dressed. the banker does not know grade nor There was a rope and pulleys attachmeasures and until this home storage ed to a rafter overhead for hanging becomes within the visible supply un- up the hogs, and could be used for der positive regulations, can it become handling large hogs in the scalding a credit asset in the general sense barrel. The building was also used needed to make it a factor in price for cutting up the hogs, trying out the

Pennsylvania. J. W. INGHAM.

### Why Winter Oils?

When winter is as warm as summer, one grade of lubricating oil will suit all seasons. Until then, cold-test oils will have their

Some types of motors require in winter an oil that will flow freely at low temperatures. Otherwise the oil is likely to congeal either in the splash troughs, sight feed or in exposed oil piping and fail to reach all friction points.

In many leading cars the lubricating requirements of the motor demand the same oil in winter as in summer. In these cases Full Force Feed or Force Feed lubricating systems are employed. These two systems are now employed on many four and six cylinder cars and on all eight and twelve cylinder cars announced to October 1st.

In each of these lubricating systems, the splash troughs, sight

feed and exposed oil piping are done away with and the oil is forced-usually by pump pressure—to the princi- MOD pal friction points. A grade for each type of

On cars employing either system it is rarely necessary, and inadvisable, unless necessary, to change in winter to oils of lighter body or lower cold test. Such oils will not develop the maximum efficiency of motors lubricated by Full Force Feed or Force feed systems.

The grades of Gargoyle Mobiloils specified for summer and winter use in the cars listed below will develop the highest motor and lubrication efficiency. If your car is not listed, a complete copy of our lubrication Chart will be sent you on request.

Ford Owners: The oil which lubricates the Ford motor also lubricates the planetary transmission.

The high speed of the motortogether with the lubricating system employed require an oil which will be readily atomized and distributed to all friction points under low temperature conditions. The planetary transmission requires an oil which will flow

freely in cold weather. Otherwise the oil will congeal and cause the transmission to "drag." Gargoyle Mobiloil "E" exactly meets these winter lubrication requirements of the Ford Car.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. For information, kindly address any inquiry to our nearest office.

#### CORRECT AUTOMOBILE LUBRICATION

Explanation: The four grades of Gargoyle Mobiloils for gasoline motor lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "A"

Gargoy

Gargoyle Mobiloil "B"

Gargoyle Mobiloil "E"
Gargoyle Mobiloil "Arctic"

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

| MODEL OF              | 1      | 911    | 19     | 912    | 1      | 913    | 1      | 914    | 1         | 915    |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|
| CARS                  | Summer | Winter | Summer | Winter | Summer | Winter | Summer | Winter | Summer    | Winter |
| Abbott Detroit        | A      | Arc.   |        | Aro    |        | Arc.   | Arc    | . Arc  | Arc       | Arc    |
| American              | I.A    | Arc    | A      | Arc.   | A      | IArc   | Ι Δ    | Ara    | 1         |        |
| Apperson              | Arc.   | Arc.   | Arc.   | Arc.   | Arc    |        |        |        |           |        |
| " (6 cyl)             | A      | A.     | l A    | A      | A      | A      | A      | A      | A         | Arc    |
| Avery (Model C) 1 Ton | À.     | Ē.     | A      | A      | A      | À.     | A      | A      | A         | A      |
| Buick                 |        | Arc.   | A      | Arc    | A      | Arc.   |        | Arc.   |           |        |
| Cadillac              | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc    | Arc    | 7.10      | Line   |
| (8 cyl)               |        |        |        |        |        |        |        |        | Arc.      | Arc    |
| Case                  | Α      | A      | A      | Arc.   | Α      | Arc.   | Α      | Arc.   | A         | Arc.   |
| Chalmers              |        |        |        |        |        | Arc.   | A      | Α.     | Arc.      | Arc.   |
| Chase (air)           | D.     | В      | В      | В.     | В      | В      | B      | Arc.   | Arc.<br>B | Arc.   |
| " (water)             | B      |        | B      |        |        |        |        |        |           |        |
|                       |        |        |        |        | Ä      |        |        | Arc.   |           |        |
| Cole                  | A      | Arc.      | Arc.   |
| Detroiter             |        |        | A      | Arc.   | A      | Arc.   | A      | A      | A         | Arc.   |
| (8 cyl)               |        |        |        |        |        |        |        |        | Arc.      | Arc.   |
| Dodge<br>E. M. F.     | 4      |        |        |        |        | 100    |        |        | E         | E      |
| Empire                | Arc.   | Arc.   | Arc.   | Arc.   | A      | Arc.   | A      | A      | A         | 1:11   |
| Flanders              | E      | E      | Arc    | Arc.   | Arc.   | Are.   | arc.   | Arc.   | Arc.      | Arc.   |
| " (6 cyl.),           |        |        |        | ALG.   | Arc.   | Arc.   |        |        |           |        |
| Ford                  | E      | E      | E      | E      | E      | E      | E      | E      | E         | E      |
| Franklin              |        | Arc.   |        | Arc.   | A      | Arc.   | A      | A      | A         | A      |
| Com'L                 | В      | A      |        | Arc.   | A      | Arc.   | ·      |        |           |        |
| Grant                 | 'Á'    | Arc.   |        |        |        | 1      | Arc.   | Arc.   | Arc.      | Arc.   |
| Hudson                | A      | Arc.   | A      | Arc.   | A      | Arc.   | Ara    | Arc.   | Ano       | Arc.   |
| Hupmobile'            |        |        |        |        | A      | Arc    | A      |        |           |        |
| " (Model 20)          | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | -      |        |           | Aic.   |
| I. H. C. (air)        |        |        |        |        | В      | A      | B      | A      | В         | A      |
| " (water)             |        |        |        |        | A      | A      | A      | A      | A         | A      |
| International         | В      | В      | B      |        |        |        |        |        |           |        |
| ackson                |        | Arc.   |        | Arc.   |        | Arc.   | A      | Arc.   | A         | Arc.   |
|                       |        |        |        | Arc.   |        | are.   | A      |        |           | Arc.   |
| " Com'l               |        | /      | Arc.   | Arc.   | Arc.   | Arc.   | rc.    | Arc.   |           | Arc.   |
| King                  | A      | E      | A      | E      | A      | TE 1   | A      | A      | A         | Arc.   |
| " (8 cyl)             |        |        |        |        |        |        |        |        | Arc.      | Arc.   |
| Cissel Kar            | A      | Arc.   | A      | Arc.   | A      | Arc.   |        |        |           | Arc.   |
| " Com'l               | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   |        | Arc.   |           | Arc.   |
| Krit.                 | A T    | A      | A      | A      | A      | A      | A      | A      | A.        | A      |
| ozier                 | Arc.   | Arc.   | Arc.   | re.    | Arc.   | Arc    |        | Arc.   | 4         | Arc.   |
| Marion.               |        |        | A      | rc.    | A      | Arc. A | TC.    | Tre.   | in        | Tro.   |
| darmon                | A 1/   | Arc.   | A      | Arc.   | A      | Arc.   | A if   | Arc.   | AL        | Arc    |
| Maxwell               | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc. A | rc. A  | Arc.   | Arc.      | Arc.   |
| detz                  | 13     | Arc.   |        | Arc.   |        | Arc.   |        |        |           | Arc.   |
| Aitchell              |        |        | A A    | Arc.   |        |        | A A    | \rc    |           | Arc.   |

| MODEL OF   | 1                                     | 1911                                    | .1                                      | 912  | . 19                                  | 913                                     | 15   | 1914                                     |  | 915                                      |
|--|---------------------------------------|---|---|--|---------------------------------------|---|--|--|--|--|
| CARS   | Summer                                | Winter                                  | Summer                                  | Winter   | Summer                                | Winter                                  | Summer   | Winter                                   | Summer   | Winter                                   |
| Moline Knight Moon (4 cyl.) (6 cyl.) (8 cyl.) (8 cyl.) (9 cyl.) (9 cyl.) (10 cyl.) (10 cyl.) (10 cyl.) (10 cyl.) (10 cyl.) (10 cyl.) (11 cyl.) (12 cyl.) (12 cyl.) (13 cyl.) (14 cyl.) (15 cyl.) (16 cyl.) (16 cyl.) (17 cyl.) (18 | A A A A A A A A A A A A A A A A A A A | Arc. Arc. Arc. Arc. Arc. Arc. Arc. Arc. | Arc. Arc. Arc. Arc. Arc. Arc. Arc. Arc. | Arc.<br>Arc.<br>Arc.<br>Arc.<br>Arc.<br>Arc.<br>Arc.<br>Arc. | A A A A A A A A A A A A A A A A A A A | Arc. Arc. Arc. Arc. Arc. Arc. Arc. Arc. | A Arc. A A Arc. A A Arc. A A A A A A A A A A A A A A A A A A A | A Arc. Arc. Arc. Arc. Arc. Arc. Arc. Arc | Arc. A A Arc. Arc. | A Arc. Arc. Arc. Arc. Arc. Arc. Arc. Arc |
|  | r                                     | A                                       | CT                                      | OI   | RS                                    |   |  |  |  |  |
| Model of<br>Tractor  | Summer                                | Winter                                  |   |  |                                       | lel of                                  |  |  | onminer  | Winter                                   |
| Aultman-Taylor (4 cyl. horizontal) Avery   | B<br>A<br>A<br>A                      | Arc.<br>A<br>Arc.<br>A<br>A             | LLLL                                    | mper<br>ambe<br>eader<br>ion.                                | cyl. C ial (4 ert ( r (He             | horiz<br>H0)<br>Mod                     | el X<br>Duty   |  | A A A A A  | A<br>rc.<br>re.<br>A<br>rc.<br>rc.       |

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Your oil must meet the heat conditions in your engine. Many oils thin out too much under engine-heat. Three troubles result: (1) Compression escapes and power is lost. (2) The cylinder walls are exposed to friction. (3) Excess carbon is deposited. The oils specified below will prove efficient.

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### The Live Stock Meeting

tion will be held at the Agricultural Building, East Lansing, Michigan, on January 18-19-20-21, 1916.

The meetings have been extended this year to cover four days in order to give the various members opportunity to attend the different breed association meetings in which they are especially interested.

Tuesday, January 18, will be devoted to the meetings of the Michigan Holstein-Friesian Association, Michi- Ohio. gan Jersey Cattle Club, Michigan Guernsey Cattle Club, Michigan Aberdeen Angus Breeders' Association and Michigan Red Poll Breeders' Association. All of the above associations have prepared specially interesting programs which none of their members can afford to miss.

Wednesday forenoon, January 19th, the above association meetings will be continued and in addition the Michigan Hereford Breeders' Association meeting will be held and also the Michigan Sheep Breeders' Association. The Michigan Sheep Breeders' Association in this, their first annual meeting are endeavoring to have as large an attendance as possible and the program is one which should be of interest to all men who are in any wise interested in the sheep industry.

Wednesday afternoon, the general meeting will be called to order in Room 402, top floor of the Agricultural Building, and an interesting program rendered. This meeting will be followed by the usual banquet tendered by the State Board of Agriculture to the members of the Michigan Live tion box. Election of officers.

Stock Breeders' and Feeders' Associa
Banquet at Wentworth Hotel at 7:00

Thursday, January 20 will be devoted to the Michigan Shorthorn Breeders' Association, Michigan Horse Breeders' Association and Michigan Ionia. State Swine Breeders' Association. The Michigan Swine Breeders' program will be devoted to the subject of 'Hog Cholera," which will be presented by several of the most noted authorities in the country on this line of work and no farmer raising hogs can afford to miss this meeting.

The meetings will be terminated on Friday, January 21, with a sale of pure-bred Shorthorn cattle in the morning and a sale of pure-bred draft horses in the afternoon. Detailed programs of the several meetings follow:

GEO. A. BROWN, Sec.

Michigan Guernsey Cattle Club.

President, G. W. Ray, Albion; secretary, Dr. C. G. Parnall, Jackson.

Meeting called to order at 2:00 p. m., Tuesday, January 18, Room 110.

Speaker, Mr. L. E. P. Smith, Boston.

Banquet in the evening.

10:00 a. m., Wednesday, January 19, in the pavilion. Demonstration and The meetings will be terminated on

General Program. Meeting called to order at 1:00 p. m., Wednesday, January 19, 1916, in Room 402, Agricultural Building. Secretary's report.

Appointment of committees. President's address.

"Factors in Economic Farm Management," D. H. Otis, Assistant Dean of Agriculture, University of Wiscon-

sin.
Vocal solo, by R. C. Huston, Associate Professor of Chemistry, Michigan Agricultural College.
"Co-operation Between the Farmers, State Departments and U. S. Department of Agriculture in the Control and Eradication of Animal Diseases," Dr. J. W. Connaway, University of Missouri.
Discussion, Dr. G. W. Dunphy, Michigan State Veterinarians.
Intermission. Music by M. A. C. Cadet Band.

Cadet Band. stration

"The Live Stock Situation in Michigan," R. S. Shaw, Dean of Agriculture, M. A. C.

Busine

Report of committees.

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

Michigan Horse Breeders' Association. President, Jacob de Geus, Alicia; secretary, R. S. Hudson, East Lansing. 10:00 a. m., Thursday, January 20, judging pure-bred draft foals in the pavilion, Agricultural Building, C. B. Augustine, Blooming, III.

11:30 a. m., parade of pure-bred draft horses

draft horses. Meeting called to order at 1:30 p. m., Thursday, January 20, room 402.

HE twenty-fifth Annual Meeting of the Michigan Live Stock Breeders' and Feeders Association, Flint, Mich; "Ideals in Horse Feeding," Wayne Dinsmore, Percheron Society of America, Chicading, East Lansing, Michigan, on pary 18-19-20-21, 1916.

The meetings have been extended year to cover four days in order "Horses vs. Tractor," D. D. Aitken, President Annual Meeting President Annual Meeting ("Horses vs. Tractor," D. D. Aitken, President Annual Meeting President Annual Meeting ("Horses vs. Tractor," D. D. Aitken, President Annual Meeting ("Horses vs. Tractor," D. D. Aitken, President Annual Meeting ("Horses vs. Tractor," D. D. Aitken, President Annual Meeting, P

Michigan Holstein-Friesian Associa-tion.

President, H. W. Norton, Jr., How-ell; secretary, W. R. Harper, Middle-

10:00 a. m., Tuesday, January 18, in the pavilion, live stock judging demon-stration by W. H. Standish, Lyons,

Ohio.

Meeting called to order at 1:00 p.
m., Tuesday, January 18, room 402.
"Sterility and Contagious Abortion
and its Treatment in Dairy Herds," Dr.
W. T. William, Cornell University;
general business meeting. "Plans for
the National Holstein Breeders' Meeting in Detroit in June, 1916," D. D.
Aitken, President, American HolsteinFriesian Association. Annual banquet
at the Plymouth Congregational
Church, Lansing, at 7:30 p. m.
Business meeting continued, 9:00 a.
m., Wednesday, January 19. "Bovine
Tuberculosis Problem in the State of
Ohio," Dr. Cooley, State Veterinarian
of Ohio; "Care and Feeding of Holstein Herds for Seven Days and Semiofficial Tests for Milk and Butterfat

official Tests for Milk and Butter-fat Records," G. A. Dimoc, of Kalamazoo. Michigan Shorthorn Breeders' Asso-

ciation. President, W. W. Knapp, Howell; secretary, Floyd J. Anderson, St.

Johns.

Meeting called to order at 1:00 p.
m., Thursday, January 20, Room 109.
President's address.
Secretary's and treasurer's report.
"The Ideal Cow," C. W. Crum; general discussion. "The Shorthorn Steer as a Feeder," Austin Cowles, St.
Johns; discussion. Address by F. W.
Harding, Secretary American Shorthorn Association, Chicago, Ill. Question box. Election of officers.

p. m

Michigan Aberdeen Angus Breeders' Association. President, Marshall Kelly, Charlotte; secretary, Alexander Minty, of

Ionia.

3:00 p. m., Tuesday, January 18, judging demonstration of Aberdeen Angus cattle in thhe pavilion.

Meeting called to order at 10:30 a. m., January 19, Room 105. Address by M. A. Judy, Field Agent, American Angus Association. Discussion of "Methods of Advancing Aberdeen Angus Interests in Michigan," led by Alexander Minty.

Michigan Guernsey Cattle Club.

in the pavilion. Demonstration and discussion of the proposed new scale of points.

Michigan Red-Poll Breeders' Association.

President, N. C. Herbison, Birming-ham; secretary, E. J. Peabody, Mulli-

ken.

Meeting called to order at 3:00 p.
m., Tuesday, January 18, Room 109.
"Advancing the Interests of Red Poll
Cattle," J. M. East; "Red Poll Cattle
and their place on the Michigan
Farm," E. Foster; "The Value of Publicity to the Cattle Breeder," J. M.
Chase; "Discussion of Plans for the
Club for the Coming Year," led by Ell-Club for the Coming Year," led by Elbert Harvey.

Michigan Jersey Cattle Club.

President, R. R. Smith, Howell, secretary, Mrs. Phebe H. Walker, Kalamazoo.

2:00 p. m., Jersey judging demonstration in pavilion, Tuesday, January 18. Followed by a banquet Tuesday

Business meeting called to order at 9:00 a. m., Wednesday, January 17, Room 403. For which a very interesting program is being prepared. Michigan Hereford Breeders' Associa-

tion. President, T. F. B. Sotham, Lansing; secretary, Earl C. McCarty Bad

Meeting called to order at 10:00 a.

Meeting called to order at 10:00 a. m., Wednesday, January 19, Room 110. "Why I Prefer the Hereford," Louis Norton; "Inside Facts to Breeding, Care and Feeding," Ed. J. Taylor; "Herefords in Michigan," Robtert H. Rayburn; "The Adaptability to Live Stock of Michigan's Waste Places," T. (Continued on page 85).

### Hogs By the Carload

HAVE been interested in the arti- beans, corn, clover and alfalfa hay, practice. However, I am not going to are light to handle and are easy to profitable pork production, winter care ed to side of pen, lifting feed over of pigs, and reports from experiment partition. Some feed would get in the stations may be studied profitably by trough and rest on their heads or

own practical experience, as I have feed was prepared. This was an imbeen producing hogs in carloads for provement, but was not satisfactory, the past five years, I do not call to as pigs could get to only one side, and mind a time in 30 years of farming floors of pen were always wet. For when I did not have under my care the past five years we have used a one or more hogs, usually a brood sow feeding pen 14 feet square, in center and her litters—the spring pigs raised of basement. Gates open from every and sold about tax time, the fall litter pen direct to feeding pen or to alley sold to someone that was willing to leading to same. The feeder prepares care for them through winter. While the meal, unfastens gate, and pigs do now I prefer the fall pigs as money the rest. We continue this until about makers, no accounts of above were the first of May, or when the June

sheep and lambs, buying feeders in ually decrease the above feed, and western markets, feeding on my farm from the middle of May to July have here and selling east, until I brought fed the fall pigs nothing, as the price in a carload which had contracted a of corn has been around 90 cents per contagious disease, by which I was a bushel for several summers. Corn on heavy loser, and by advice of the state pasture would be a benefit if not too veterinarian abandoned sheep feeding, high in price. as yards, barn and pastures would be began to ponder over future use of to thresh barley or rye about July 15

cles published in The Farmer dur- with all the milk we can spare, the ing the past year on pork produc- first three feeds used according to tion. It appears to me the authors price, compared to feeding value as are writing more from theory than we see it. I use steel troughs which criticize on this point as the article on clean. I have fed with trough fastenthose in the trough-filling business. floor. I have used the trap door by This article will be confined to my which we could shut them back until kept and I think no profits secured. grass starts enough to give them a For several years I was feeding bite. When we put on pasture we grad-

The sows farrow again in March and liable to hold the infection for two are fed same as in fall. The spring years, at least. For above feeding I pigs are pushed as fast as possible as had built a basement 64x70 feet, so we sell all at the same time. We plan



Pasture is an Important Factor in Summer Feed.

this barn and decided to try the swine. to 20, and commence to fatten all sale things I must closely observe, viz, about six weeks. breeding, care, feeding and marketing. Commencing in November, 1909, I I have used a cross off the Chester New York and receive reports of has given good results.

conditions are favorable, using a ma- ket. I do not think it pays me to fatthe field. During the summer a pas- over 250 pounds are slow sellers in a bath in the heat of the day. If any hogs are in demand late in fall or winticed as we have raised and sold dur- the demand, causing heavy declines in ing the past six years more than that all markets. many hundred hogs and have not yet I have a book account of my feeding had one sick, except from accident or operations and will extract from same knife, not one per cent.

Feeding.

of wheat middlings, cereal feed, cull

At the start of increasing my pork hogs, increasing the feed until we production I knew there were four are feeding about all they will eat for

Marketing.

I have been shipping live stock nearbought pigs at auction sales for a ly 20 years; have bought and sold on start, except my sow and litter. Since the markets of Chicago, Buffalo and White sows and Berkshire male which market conditions regularly, so have kept informed as to the best time to The above mentioned barn was di- sell. Winter-fattened hogs should not vided in pens 14x28 feet, with hay be sold until after March, while Seprack in center and gates opening to tember is usually the high point of alley. In each pen we placed 40 pigs the year for light and medium weights as they were weaned. The pens are (100 to 200 lbs.), to which I manage to littered with dry straw all over the bring my herd, and have sold at the floors. As the straw becomes damp top of the market for the whole six we put in more dry. We try to clean years. I sell in spring only those liaonce each week if weather and other ble to get too heavy for early fall marnure spreader and hauling direct to ten in cold weather. Hogs weighing ture is provided of June grass, clover hot weather, also those that are too or alfalfa, through which is a non-fail- fat, as the people are demanding lean stream of water where the pigs take meat more and more each year. Lard germs of disease have come to our ter months, when nearly every farmer herd they have passed away unno- wants to sell, and the supply exceeds

two years' feeding; first, November, 1909, to November, 1910; second, No-Our pigs are farrowed in October or vember, 1914, to November, 1915. The early in November, and are on sows accounts start with November each two months, being fed while nursing. year as we start our fall pigs. The ac-When weaned we continue same feed, counts are recorded as fed. In this As they grow the grain feed consists summary we will make each feed and (Continued on page 85).

NOTE: Even after its experience of nearly a century, Case is not content to publish advertisements unless based on the very latest authoritative information. This is one of a series of messages to farmers, prepared after visiting tractor demonstrations, talking to hundreds of farmers, and carrying on a national investigation through our sales organization and by mail to find the gas tractor needs of the farmers.

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Whichever size of Case Tractors is suitable for your farms, you can bank on its being the best of its kind in the market, made honestly and conscientiously, to uphold our name and fame. In the field and in our laboratories we have carried on tests and we know from experience what is best to incorporate in a tractor. In its class, each Case Tractor is a masterpiece, embodying all the best features. Why be satisfied, then, with lesser quality? Why choose as your investment a tractor that has fewer years of experience behind it? Case has been in business 74 years. You would not buy an experimental automobile. Then why a tractor except from a company long engaged in making agricultural machinery? To do otherwise is to take an unnecessary risk.

#### More Economical Than Cheaper Tractors

You want a real, everyday tractor, one that is backed by a You want a real, everyday tractor, one that is backet by reputation. We say that a Case tractor costs less than cheaper tractors because it is built honestly and carefully. Case principles are right, and no Case tractor is too small, too light or



From an Actual Photograph of a Case 10-20

too cheap. Case tractors are built to uphold a name fame that must not be dim-med, so they will not be claimed by tractor grave-yards. The wise farmer who chooses a Case is bound to increase his farm profits. He need never ex-periment with one tractor and then another. He need never fear that he will be caught with an orphaned tractor on his hands.

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Too many farmers are unable to put their farms on a profitable basis. Too many farms are over-horsed, but under-powered. A farm must be put on an earning basis like other businesses. Case Tractors reduce the cost for horses and men.

#### Case Leads



The Case Tractors are made in the Case Shops The Case Tractors are made in the Case Shops by Case workmen. This includes our specially designed tractor motors. Because of our reputation, you can depend on our engine delivering the power. It is simple, efficient, economical, constant. At all the tractor demonstrations this year, the Case Tractors commanded the attention of thinking, studious farmers, who were planning to do away with costly methods and claim the profits that rightfully belong to them. Men admired Case simplicity, and contrasted our experienced engineering methods with the many types recently introduced. Some men expected to find Case tractors suitable only for large farms, but were pleasantly surprised to find our line included all sizes, suitable for all farms. Case gas tractors are in four sizes—the 10-20, 12-25, 20-40 and 30-60.

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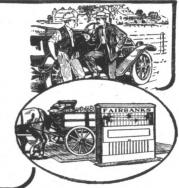
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because my profits were getting away in many little losses. Close checking of my produce required the installation of a

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Every careful farmer should have one of these scales to help bring profits up to where they should be. They are simple, long lived scales that tell the truth about weights.

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Investigate! . Inquire among silo owners; go inside of every silo you see and examine the inner walls, test the quality of the silage, compare the outer rim with the center. Then look at the doorframe and the doors, flush, smooth, without corners. Note the self-draining mortised joints where two staves come together endwise, keeping the juices in and the rain out. Nothing here to cause decay.

As you run your hand over the smooth surface of the inner wall of the Indiana Silo you will involuntarily compare this with other silo walls you

And then remember that there are sixty thousand Indiana Silos in use and that those which were erected more than a dozen years ago are just as serviceable as those that were built last season.

Write today for catalog and our early buyers' money-saving proposition. Address neares office.

Remember, also, that wherever there is an Indiana Silo there is a satisfied silo owner who will tell you that in his opinion there is no silo quite like the Indiana.

#### THE INDIANA SILO CO.

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EVERY woman knows that its much easier to wash and thoroughly clean aluminum cooking utensils. Grease does not stick to aluminum. Just one reason why we use aluminum skimming discs in the SANITARY MILWAUKEE CREAM SEPARATOR. Another reason: Aluminum discs do not rust or corrode like the tinned steel discs of other separators. Still another reason: Using aluminum enables us to taper MILWAUKEE discs—a process too costly—too intricate to attempt in steel discs. Tapering the discs, gives much greater separating capacity between each set; hence the MILWAUKEE requires only about half the number of discs used in other separators, to accomplish even quicker, closer skimming.

ilwaukee CREAM SEPARATOR

re also interchangeable. No tedious work pla wiin proper rotation like numbered discs. Ju-nany order. Every MILWAUKEE is tested will, before it passes our inspectors. You ge dicate of this test; also iron-clad guarantee protecting you when you buy.

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Our Twenty-Year Guarantee Protects You our wonderfully low prices and erous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from western points. Write to-day for our catalog and see what a big money saving proposition we will make you. Address:

American Separator Co., Box 1061, Bainbridge, N. Y.



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## Registered vs. Grade Cows

Farmer for some time. Can anyone tell me how much more a registered cow is worth than a good grade? Why such a big difference in the price? Are our laws of registration what they ought to be?

How much does a world's record amount to? Does it necessarily prove that the cow is the best individual and the best breed, or just simply that she had the best feed and care? During the past few years there has been a great deal said about Holstein

been a great deal said about Holstein cattle. Every few days somebody tells me how much better the Holsteins are than they used to be. But the stock buyers say they used to buy better cattle 20 years ago than they do today. Every little while I hear of someone that has sold a big bunch of Holsteins at an enormous price. This

steins at an enormous price. This causes people to want that class of cattle. No matter whether they have a dollar or not, they buy a registered cow and, of course, they breed to a

supposed these cows are equal produc- practical way. ers. One will produce as much milk or butter-fat as the other and do it as like well-bred Holsteins as well as economically. In this respect they are they did cattle twenty years ago, is of equal value, but we must produce not only no point against them, but more dairy cows, we must raise calves really a point in their favor. from these cows. Here is where the value of the registered cow shows. tle. They are milk producers. We The fact that the cow is eligible to all must admit as the dairy cow beregistration shows that she has been comes more and more popular and nubred carefully. Someone has selected out her ancestors from many generasome object in view. If a dairy cow, in numbers rather than diminish. then the object has been to select anithey are economical feeders and produce a choice quality of meat. In either case she is much more apt to proteristics of her breed than the grade stops. It won't work long. cow. The grade cow has no breeding Only Worthy Animals Should be Regback of her. She may produce 10 per cent good calves, while the registered good calves. That is the reason why she is worth more money, and it is very important.

Breeding Not an Exact Science.

True, sometimes a registered cow are many reasons for this that cannot ertheless, that all of our improved breeds of live stock have been producciple. The man who believes in grades and breeds them can never get any-

Possibly the laws or rules of regis-They are improving all the time; ad- under abnormal conditions. vancement is being made as rapidly provement.

record, no matter how well she is fed per pound and even better, now. That and cared for. A world's record shows will bring a gross income of \$90 to much as a speed of two minutes or your money! better shows what can be done with trotting horses. It shows the possibilities of man when applied to a given thing.

The Value of Records,

dairyman, for it is not practical for changes in flaver were in part due to

I am a young farmer and have been registered sire. Then, as I understand thoughtful reader of the Michigan it, no matter if the calf is blind, three-armer for some time. Can anyone legged, hump-backed and double-jointell me how much more a registered ed, it can be registered. What is he, ed, it can be registered. What is he, then? A thoroughbred scrub and the meanest scrub you can get. But they expect a big price and are getting it. Is there any such a thing as paying more than anything is worth? Just

the other day I heard a man say he was offered \$125 for a grade cow but he couldn't afford to sell her. How much is a cow worth a year selling

her milk or butter?

Personally, I think a good many are overdoing the matter and are getting good pay for it by bragging up the cow and selling the calf for a big

I wish more people would keep book accounts of their dairy and be honest about it. There is a big difference between thinking we know and knowing we know. It would surprise not a few and have a tendency to correct the value of the cow and her needs the value of the cow and her needs. Genesee Co. R. H.

HIS man is half right in some him to attempt to run a commercial respects, but he is decidedly dairy under those conditions. No dairywrong in many and in general man will milk more than twice a day for it is not practical. Yet world's rec-He asks how much more a register- ords are made by milking four times ed cow is worth than a grade. Possi- a day. However, we are all glad that bly no one could tell exactly, but any- world's records are made, because one who has studied the subject and they show possibilities and teach us had this study backed by experience there is practically no limit to producknows that a registered cow is worth tion, and besides we practical dairyconsiderably more. Of course, it is men are stimulated to do better in a

The argument that stockmen do not Holsteins are not supposed to be beef catmerous, that good beef becomes more scarce and harder to get, but dairying tions and kept the best. She and her is more profitable than beef producancestors have been selected with tion, and the dairy cow will increase

There is no doubt, in fact, we all mals that will take the farmer's feed know that some registered animals and make the most milk and butter-fat are sold that never should be. This from it. If it be a beef cow, then her always happens when a breed has its ancestors have been selected because boom. There are not enough animals to go around, and poor individuals that ought to go for bologna sausage are sold sometimes for good prices. After duce offspring possessing the charac- a time, however, this sort of business

istered.

I admit that no calf should be alcow probably will produce 90 per cent lowed to be registered unless it is a worthy individual. In the small countries of Europe like the Islands of Jersey and Guernsey, this rule is followed and the animals inspected, but this country is so large that anything does not produce all good calves. of this sort would be impractical at Breeding is not an exact science. There present. Now we must depend on the honor of the individual breeder and it be given here. The fact remains nev- is working out pretty well and it is getting better every year.

Of course, people are anxious to get ed by breeding and selecting to a prin- the progeny of good producing cows. They want to improve their stock by breeding, and they can. My idea is that a good business record made under practical conditions is as good for tration are not all they should be, such purpose as a world record made

Why is not a good grade cow of any as conditions will warrant, and ad- breed worth \$125, and even more? vancement will continue to be made. Many of them will and do, under prac-There seems to be no limit to im- tical conditions, produce 300 and 400 and more pounds of butter-fat in a A poor cow cannot make a world's year. Butter-fat will average 30 cents what breeding and feeding and proper \$120, and she can be fed for \$60 to care will do with a dairy cow just as \$80. Where can you get more for

#### FLAVOR IN BUTTER.

In studies made by a German agricultural station of the effect of Swed-I don't think myself that a world's ish turnips, carrot leaves, shives, kohlrecord made, as they are, under unus-rabi leaves, grass, hay, straw, beets, ual circumstances or abnormal condi- cabbages and other feeds upon the tions, is very practical for the real flavor of butter it was found that

part to bacteria found on these feeds of milk produced. which generate new flavors. While it ducing taste and odor, it is not certain corn-and-cob meal and wheat bran. if the same feed medium will produce the same taste and odor with different FEEDING COTTONSEED MEAL TO types of the bacteria.

#### MORE PROTEIN NEEDED.

Kindly give me a balanced ration for Jersey cows, of the following feeds: Silage, cut cornstalks, clover hay, corn and oats. Can buy the following feeds: Cottonseed meal \$40; oil meal \$40; prepared feed \$33; bran \$26, and middlings \$28. I have been feeding all the ensilage they would eat twice a day, with four quarts per day to each, of corn, oats and feed. They are also turned out for a little while to grass each day. They are not doing well. while to grass each day. not doing well.

Lenawee Co.

It is safe to say that this ration lacks in protein. One feed a day of cornstalks and one of clover hay, with two feeds of silage constitute the roughage. Clover hay alone contains the proper proportions of protein; the other feeds are deficient for a balanced ration. I do not know the analysis of the prepared feed, but judge from the price given that it is not exceptionally rich in protein. Corn and oats for grain are deficient in protein for a balanced ration.

If you had alfalfa or if you fed clover hay alone for dry roughage it would help matters. I suggest that you add two pounds of cottonseed meal per day for each cow. Feed enough of the ground corn and oats to make a total of one pound of grain for every three pounds of milk produced.

#### USE CULL BEANS FREELY.

I am milking grade Holstein cows and they are giving about 35 lbs. a day. I would like you to suggest a balanced ration from the following feeds, as prices are very high: Corn 75c; oats 35c; cull beans \$20 a ton; cotton-seed meal \$38 per ton; bran 25; oil meal \$2.10 per cwt. I have good ensilage, timothy hay and cornstalks for courses. roughage Livingston Co.

If you can get your cows to eat bean meal readily, I don't think you need to buy any high-priced cottonseed or oil meal. Grind oats and beans equal parts and mix equal parts of wheat This makes one-quarter bean meal, one-quarter ground oats and one-half wheat bran. Feed one pound of grain for every four pounds of milk

produced.

You ought to have clover hay instead of timothy. It is possible you would get better results to feed two pounds of cottonseed meal and not so much of the other grain, but owing to the cost, I would try thoroughly the first suggestion.

#### SOY BEANS IN SILAGE.

Please balance for me an economical ration for one Ayrshire and four Holstein cows which weigh 1,000 lbs., and are giving from 24 to 35 lbs. of milk daily. I have good silage (four-fifths corn and one-fifth sow beans), and for roughage I have corn fodder. and for roughage I have corn fodder with some soft corn on it, besides about a ton of second-cut clover which about a ton of second-cut clover which I feed after silage at night. I have on hand 125 baskets of corn which I will have ground with cob. I would like to have this corn last me until April I. I also have 600 lbs. of prime cottonseed meal at \$1.75 per cwt. I can buy the best bran at \$1.30.

so much cottonseed meal in the ration, but your clover hay will not last so very long. It would be a good plan to buy clover hay so you can feed all the cows want, as it will save so much grain.

We are expecting a representative from the American Jersey Cattle Club and also noted speakers from our own state to be present.

grain.

Feed all the silage and fodder and clover hay the cows will eat. For grain feed one pound of cottonseed meal per day to each cow. Then grind your corn, cob and all, and mix it equal parts with wheat bran. Then feed one and also noted speakers from our own state to be present.

All lovers of Jersey cattle are most cordially invited and urged to attend this meeting and be prepared to take part in the discussion. Come and make this the best, the most wide awake meeting of the club.

P.H. WALKER, Sec.

the taste and odor of the feeds, and in pound of grain for every four pounds

For instance, if a cow gives 36 lbs. is probable that each group or type of of milk in a day, give one pound of bacteria has a specific action in pro- cottonseed meal and eight pounds of

#### PREGNANT COWS.

Would it be practical to feed cottonseed meal to cows just before coming? W. W. K.

Great caution should be observed in feeding cottonseed meal to any animals. It is a very rich, concentrated food. Besides, it contains a poison. When fed in small quantities it is safe for mature animals, but it never should be fed to young animals, and to hogs not at all. Hogs seldom live more than 60 or 90 days if fed cottonseed meal continuously.

It is not necessary to feed cows over rich in protein before they freshen, therefore I certainly would not feed them cottonseed meal. Just before freshening, a cow should have a laxative food and a succulent food, too, if possible. Wheat bran and silage or roots are all good. Cottonseed meal is constipating in effect, and is just the wrong food to feed at that time.

#### HOLSTEIN BREEDERS' MEET.

The seventh annual meeting of the Central Michigan Holstein Breeders' Association was held at the Chamber of Commerce rooms, Lansing, Milh., December 22. One hundred breeders were in attendance and a splendid program was given.

B. E. Hardy, of Owosso, talked on fitting cattle for the show ring. H. E. Denison, of M. A. C., talked on testing or buying milk on a butter-fat basis A lively discussion followed each

The president's address by A. B. Niles, gave a review of the year's work, and made some splendid recommendations for the coming year. C. H. Davis, secretary of the Lansing Chamber of Commerce, invited the members to hold their second annual cattle show on the Lansing City Market this spring, and stated that the city would co-operate with the association in making the show a success.

Hon. D. D. Aitken, President of the National Holstein-Friesian Association, who was to be the principal speaker missed his train and was unable to attend. The election of officers for the ensuing year was as follows: President, A. B. Niles, Grand Ledge; vice-president, Wm. Stoll, Lansing; secretary-treasurer, Fred R. McDonel, Lansing; executive committee, C. L. Hulett, Okemos; Dennis Miller, Eaton Rapids; H. E. Rising, Woodland; Core Schiably, Lansing; Geo. H. Gillespie,

At the conclusion of the meeting it was unanimously voted to hold a cattle show in Lansing this spring, and the following committee was appointed: Prof. A. C. Anderson, of M. A. C. L. M. Hatch, Espanore Farm, Fred R. McDonel, Lansing, to co-operate with the Lansing Chamber of Commerce in putting on the show.

FRED R. MCDONEL, Sec.

#### MEETING OF MICHIGAN JERSEY CATTLE CLUB.

The annual meeting of the Michigan Jersey Cattle Club will be held at the Ottawa Co.

B. F. B.

College, East Lansing, Tuesday and Wednesday, January 18-19. There will be a Jersey demonstration in the pavilsilage you will not have to use quite ion on Tuesday afternoon and a ban-

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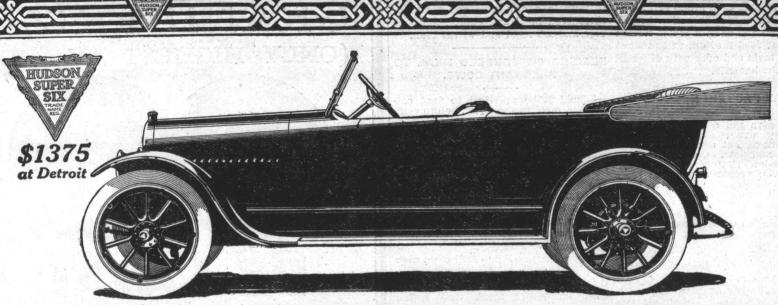
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The Hudson Super-Six-7-passenger touring car model-at Sheepshead Bay Speedway in November, officially broke all stock car records up to 100 miles. Also all records for quick acceleration, under American Automobile Association supervision—as follows:

100 miles in 80 minutes, 21.4 seconds, averaging 74.67 miles per hour, with driver and passenger.

The previous best record was made with driver only, with a larger motor and more cylinders.

75.69 miles in one hour with driver and passenger.

Standing start to 50 miles per hour in 16.2 seconds.

Mark what those records mean.

No other stock car in history has equalled that performance. No other like-size motor has ever developed such power.

The Super-Six has proved itself the greatest engine ever built. It has outrivaled Eights and Twelves. It has almost doubled the efficiency of

And this motor is a Hudson patent, found in Hudsons only. So it means that Hudson cars hereafter hold the highest place in Motordom.

#### 80 PER CENT MORE POWER

Let us compare it with the Hudson Six-40, long the leader among Sixes. That Six-40, by its matchless performance, in two years quadrupled Hudson

The Super-Six is identical in size. No added cylinders, no extra complications. Lightness and economy remain.

But the Super-Six develops 76 horsepower. Best earlier type sixes of like size developed but 42 h. p.

And all that increase—that added 80 per cent comes through wiping out vibration.

#### ADVANTAGES OF HIGH POWER

You ask why you need that 76 horsepower if you don't care for high speed.

You need it because it means vast reserve power, to mount hills without effort, to make hard roads easy, to avoid changing gears. Also it enables you to creep on high gear, and to pick up with record quickness.

And it all comes through lack of vibration. So it brings with it bird-like motion. The motor is so smooth that the car seems to move by magic.

#### OTHER TYPES DISCARDED

We stopped production on former Hudsons when the Super-Six proved this supremacy. Thus we lost over \$6,000,-000 in sales last fall. We also stopped our experiments on Eights and Twelves.

Then we doubled our factory to meet a doubled demand. And we bought materials for \$42,000,000 worth of these new cars for this season.

All because the Super-Six is bound to dominate hereafter. Its performance is resistless. Any buyer of a high-grade car will choose it when he knows the facts It will also win thousands from lower-grade cars to the Hudson.

#### A LUXURIOUS CAR

The Super-Six looks its supremacy. In every detail we attain luxury's limit, regardless of the cost. The new body lines are perfect. The finish is superb. In the upholstery we use a rare grade of grain leather. Each compartment of the Phaeton has a rounded, finished dash.

At no price is it possible to offer more of luxury and beauty. Yet our mammoth production brings the price to \$1375. That for a car which must be conceded the greatest car built today. Go see it at the nearest Hudson Showroom.

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## Magazine Section

LITERATURE POETRY HISTORY and **INFORMATION** 



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

T is of almost universal belief that the unerring instinct of the robin causes it to go to a more southern and congenial home for the cold months. But does the cold drive him away?

ity for the observance of the migra- er, these effect bird migration.

## The Robin In Winter

By W. V. SMITH.

tory habit. It is assumed generally The robin is a migratory bird, as its that this habit is a result of extreme or in cold weather, but in the time of are so common in these bunches of scientific name, Merula Migratoria, im- low temperatures, and this assump- its breeding, it is an omnivorous feed- sumach berries. Winter, however, plies. In fact, it is one of the most tion is well based, in that it is indirect- er, gathering worms for its young in makes the food of the robin sacrce, consistent in its habits of migration. ly a result of cold, but not directly, such quantities as to make it one of and it goes south, where a more lib-It is also a fact that the eastern por- This migratory habit results directly the best friends the farmer has. Dur- eral supply can be found. tions of the United States, when con- from the question of a food supply, ing its nesting period, its carnivorous sidered as the habitat of various ani- and so far as the food supply depends habits are in keeping with food condi- may assert from the fact that I have

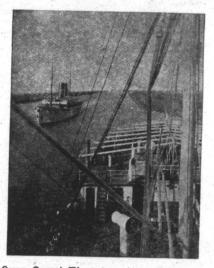
petite of its young. Later, after the season of breeding, I have found it at various seed bearing plants, and the last before its migration, as my observation goes, is the fruit of the stag-The robin is a seed-eater in winter, horn sumach, and also the insects that

mal life, furnishes the very best local- on the matter of cold or warm weath- tions, and the supply is sufficient for seen it in western New York in midits sustenance, and the ravenous ap- winter, when the mercury showed 12

## WORLD EVENTS IN PICTURES



Warden Osborne, of Sing Sing, Reformer, is Indicted.



Suez Canal Threatened by Drive on Egypt by Germans.



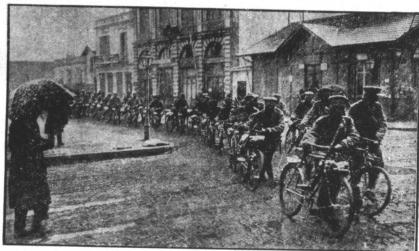
\$5.48 to Mail Powdered Milk to Ger-



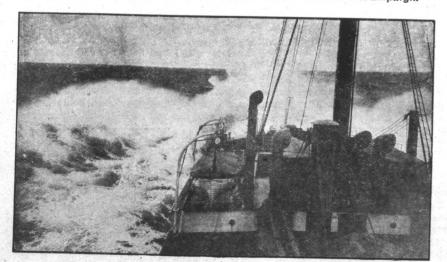
American Woman Becomes Vicerine of India.



Kaiser and Staff Inspect Russian Guns Taken in Eastern Campaign.



British Cyclists Advance for Scout Duty in Blinding Snow at Saloniki.



Heavy Seas were Encountered by the Ford Peace Ship, Oscar II.

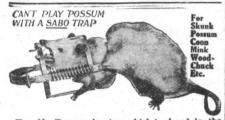


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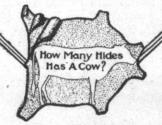
Coated splits, weak and irregular in quality, durability and price, cannot be standardized. Motor Quality Fabrikoid, uni-

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degrees below zero, Fahrenheit, and ordinary Michigan winter, as the Engthe robin or other birds.

supply were solved, stay through an that go south.

its clarion call, and the activity plain- lish sparrow. It is not a matter of ly proved, to me at least, that the cold wonder that a single robin, that by was not so serious as to drive away some good luck had found out an ample supply of food against the winter, There is no reason why the robin should remain and come through the could not, if the one question of food cold weather as well and happy as any

### **Educated Out of School**

By WILLIAM JONES.

AST Tuesday night Bert Taylor, one of James Taylor's sons, called to talk over his future busifrom Knox College and is now ready to begin farming. The boy has had his ideals expanded considerably through etc., for information. He got it. much study and naturally the practical side of his training appears to be more or less lacking.

"Now, Bert," said I, "Do not allow what I may say to discourage you too much. But the knowledge you acquired in college will be only indirectly helpful to you in your life work and the things you must still learn will be much harder to acquire than your college training at Knox."

His reply, "Go ahead, Mr. Jones, I of hopeful suggestion.

ed doctors had called upon John Branton to get the latter's opinions on a barn. course of lectures being prepared for And that the meeting of those two pleted his course in the public schools. "Dr. Johnston?" interrupted Bert.

"Yes," said I, "and I'm sure he heard many things of interest for, as twelve.

that the things men learn in college going to make my son into a doctor are used. at the university." Three years later "Now of her son was following the horses.

must have a certain kind of an indipose when seeking information?" vidual to work with. When they get the wrong kind, like young Bradford, tionally, help him down instead of up. something is likely to go wrong."

"Do you mean to say, Mr. Jones," thoroughly practical?"

his lectures to a practical man like and barn." Branton,'

goes after a single idea and finds use- dering the things he had heard. ful information about it."

"Illustrate what you mean," commanded Bert.

"Well," I said, collecting myself, Longings oft have seized me
"There is Bryce Langdon. His schooling was very limited. At the local inWith what is here.

BY RITOPA.

For a higher, better sphere,
But I have tried to be content
With what is here. stitute several years ago he asked of In longing for that which is not, one of the outside speakers if elecone of the outside speakers if elec-tricity would not prove most conven- My ideal only drifts ient and economical to the farmer. The speaker replied, 'Dangerous and costly and a storm puts out your I lights.

"As a student in the school of experience Langdon would not allow this answer to convince him and so he applans. He recently graduated pealed to practical electricians, the few farmers he could find who had installed such systems, manufacturers,

"He learned that this form of energy is available to the farmer, that water, wind, gasolene or steam will furnish the power; that the cost could be brought within reach of the average person. His practical sense led him to figure the cost this way: The original outlay which may seem high compared with other systems, is offset by the time saved in getting a light when wanted, in relieving the extra hand that carries the lantern, and by increasing one's efficiency through am ready to hear the worst," was full having good light upon his work. He found one farmer who figured that the Then I related to him how that one cost of caring for his dairy herd in the of his most respected and distinguish- winter was reduced twenty per cent by the use of electric lights in his

"And Langdon pursued the matter post graduate students next year. further: The electric energy he found, had a wonderfully wide field of usefulmen was most peculiar because the ness outside of furnishing light. The man with "Ph.D." after his name was farmer's wife can heat the toaster, asking questions of and seeking ad- electric flat iron, water boiler, oven, vice from one who had scarcely com- radiators, percolator, grill, or chafing dish, or the current may be used to operate the churn, separator, vacuum cleaner, electric fan, washing machine, wringer, pump, sewing machine, bone Mrs. Branton told me, he came for a grinder, feed mill, ensilage cutter, corn two hours' consultation and stayed sheller, fanning mill, milking machine, grindstone, lathe, drills and, in fact, "So do not go about with the idea any farm machine using belt power.

"He not only learned these possibiland universities make up all of human ities but he found in an interview with knowledge. It is a very meagre por- an insurance man that a house proption and to some men it is more or erly wired and lighted by electricity less nauseating. Poor old Mother may be insured at a lower rate than Bradford once told me that "they are one where other systems of lighting

"Now do you see?" I continued, "What I mean when I say that the "You see, Bert, these institutions practical man is definite in his pur-

"I believe I do," he responded. "You have given me an entirely different they indirectly and certainly uninten- line of talk than I expected. But I am grateful for it. And I'm going home Schools are organized to develop the and revise my plans, Mr. Jones, before average man-standardize him, if you showing them to you. But, by the way, please; but when they get one who could you tell me something of the does not fit their machinery then cost of an electrical plant suitable for my place over there?"

"Not over \$350 for installing the broke in Bert, "that our work in the power and dynamo. Wiring and fixsciences, for instance, has not been tures would be extra," I added. "You would need perhaps twenty lights in "You undoubtedly will find a great your house, four in the dairy stables difference between the laboratory and and the same in the horse barn, two in the field. Dr. Johnston showed his ap- granary and corn crib, one at the preciation of this when he submitted front gate and two between the house

On leaving he showed how well he "But the school of experience gets understood his lesson on practical edone nowhere," answered the college ucation, by remarking, "Now, Mr. Jones, if I had asked our Professor of "Precisely the opposite," I replied. Physics that question his answer "The college idea is broad and com- would have been so general as to be prehensive, while practical schooling of no value to me. Yours is, and I is definite and purposeful. It usually want to thank you," and he left, pon-

#### BE CONTENT.

BY RITOPA Away from me. Though I never reach my standard, Or even yet come near, shall try to be content

With what is here.

## Every Michigan Farmer Should Read This Announcement

For it tells of a Great Land Opening that will enable a farmer at a glance to make up his mind whether or not this is an opportunity for him to build a Better Home---Earn a Better Living and Lead a Better Life than he is now doing.

When the United States Government throws open its lands for settlement, the people recognize the great opportunity; and filing applications often outnumber possible claims at the ratio of 100 to 1. There is a reason for this, and this reason is: "The American farmer knows the value of a new country and new land." This announcement is very similar to a Government enterprise in this respect.

country and new land." This announcement is very similar to a Government enterprise in this respect.

Suppose you could transplant your farm, with the very surroundings amid which you have lived for so many years, to a newer climate where your acreage might produce for you three crops per year. Wouldn't you gladly embrace the opportunity! The land we want to tell you about is located in Beauregard Parish (County), Southwestern Louisiana. These lands lie high, are naturally well drained and are virgin in every sense of the word. No plow has ever pierced the breast of the acres we will soon throw open for settlement. No farmer has ever taken from this soil any of its pristine value. Beauregard Parish (County), around that great center known as the De Ridder, Ludington and Bonami District, enjoys all the sterling qualities of the famous state of Louisiana, without suffering from the drawbacks which have obtained in the past in other regions of this noble state. Beauregard Parish lies in the very heart of what is known as the Ozone Belt of Louisiana's famous highlands. Singularly free is this region from rigorous climate and the effects of stagnant water. There is no river overflow, nor backwater to create swamps. To the contour of this section would remind him of his own land.

Corn has become Louisiana's staple product, in point of acreage devoted to it, and quality produced. From a yield of 19,516,500 bushels in 1913, it has increased to more than 48,000,000 bushels in the year just passed. There is a reason for this enormous development—and that reason is the influx of Northern farmers into this wonderful state.

It is said that Louisiana has more miles of navigable streams than any other state

ful state.

It is said that Louisiana has more miles of navigable streams than any other state in the Union. Its lands consist of 29,610,000 acres, which were once gigantic forests. Louisiana has been slower in developing, than those farm regions, where lumber was not necessary to remove, in order that such lands might be cultivated. The fame of Louisiana, the building of railroads through the heart of the forests, the ever increasing demand for its excellent lumber, has, year after year, thrown open for settlement great quantities of virgin farm land; and each year finds the total of taxation in the state sufficient to enable the great parishes—which are the same as Northern counties—to extend the work of improvement into all lines, such as roads, schools, extension work, etc. If you could go to De Ridder today, with some of your school commissioners, and see there what Beauregard Parish is doing in the matter of school work, you would surprise and even shame your own county in this regard.

The United States Government has established an Agricultural Field Agent in this section at De Ridder; the Parish (County) Commissioners and Principals of schools are extending the work of agriculture to the school room. The children are gathered together from great distances by County conveyaces, and thus carried to school. No condition of time, distance nor climate stands in the way of education in this great region.

THESE LANDS is said that Louisiana has more miles

THESE LANDS

THESE LANDS

Let us tell you briefly something of the fands, about which we want to foeus your attention in this announcement. The timber from these lands has been removed by Long-Bell Lumber Company operations. Most of this timber has been cut off for a period of five years. It is a well-known fact that, when land is exposed that has been tree-covered, and the trees taken from the soil, such land passes through a reconstruction period. It becomes sick, so to speak, and the chemical forces within it set to work to build up a newer, better soil. Gradually it turns itself over and over. It takes time to do this, and the great difficulty has been, with land of this character, that agriculture follows too closely behind the woodman's ax. In this region, however, sufficient time has passed to prepare the soil for the plow. Here, to this very spot, great transportation companies have been attracted by the traffic of lumber. Three great railroads tra-

verse this fertile Parish now, while lumber railroads form a network of lines between them. To the South, sixty-five miles "as the crow flies," lies the great Gulf of Mexico. Its winds temper the atmosphere to a point one hundred miles inland. At night this cooling Gulf wind enables one to sleep during the hottest part of the summer with comfort, and the same wind that acts as a shield in the summer throws a protecting blanket over this region during the fall and winter months. It is a sort of an air cushion that stands the buffeting of the air currents hurled upon it from the North, East and West.

LARGE CAPITAL AND FARMS

LARGE CAPITAL AND FARMS

There is approximately from twelve to sixteen years' more work for the lumber mills in Louisiana. The railroads have followed the saw mill and logging camps. Great capital is soon to be shorn of its earning power derived from the products of the forest. Capital has realized this fact; the United States Government has realized it; the State of Louisiana has realized it. We then find that all the large influences and financial in-

This Company is a sister corporation to the Long-Bell Lumber Company, which concern needs no introduction to the American people, as it has no superior in the lumber business of our land. Any financial institution—no matter where you are located—has the means at hand to determine the value of the Long-Bell Lumber Company's name. The same excellence which obtains with this company will be the steadfast rule of the Long-Bell Farm Land Corporation, whose lands we are now describing. This being an assured fact, that which is to follow should be a particular appeal to everyone.

**OUR PLAN** 

It is our purpose to throw open for settlement 100,000 acres during the year 1916; 100,000 acres during the year 1917; to be followed by an additional 100,000 acres in 1918. The first block of land, 100,000 acres, will be offered under our plan of settlement in about thirty days. We are today making this announcement in many sections of this country to the American farmer. We have so timed this publicity that the public will have identical opportunity for investigation

fails under any and all conditions. A great worker of this country, connected with the United States Agricultural Department, said of the Southern land: "Seventy-five percent of the value of the South is climate; fifteen percent soil, and ten percent man; but if you do not give the soil and the climate the ten percent man-quality, the South cannot take advantage of the remaining ninety per cent of its producing value."

We want to free this announcement of any glamor or imaginings that will paint landscapes in the brain of the cool and collected man; and thus sway his judgment against his real duties to himself, his family and his future. On the other hand, we do not want stable, competent, equipped Northern farmers to confuse this project with some kind of colonization work that has been carried on in the South in the past—to a failure.

This Company reserves the right to know

This Company reserves the right to know as much about its colonists as its colonists desire to know about it. This may sound like high-handedness, but we know the effect of 'one bad apple in the barrel.' We know that one failure among twenty or thirty strictly energetic settlers breeds discontent, and we do not intend to let a man, who is not equipped for success, run headlong upon the rocks of his own ignorance.

not equipped for success, run headlong upon the rocks of his own ignorance.

This land will be sold at a remarkable figure, and upon very interesting terms. When you read the announcement of our plan you will be convinced that the Company has struck the very keynote to the needs of land development. The first requirement will be that the settler is allowed as much use of his money as is possible. Land payments will not be allowed to exhaust development funds. He will receive from the Company all the cooperation that may be expected, to bring about the successful tilling of his acres. The Company has a demonstration farm where the question of soil has already been proven, and where the Company's expert is equipped to illustrate his words by growing tests made over a period of eight years. You can see his success with your own eyes. Every need of the very acres and the very soil upon which a settler will locate has been solved already by this Company. Having accomplished these things to our own satisfaction, we are prepared to place the right kind of men and women on the land, at terms that should enable them to pay for the land out of its earnings. Possession will be granted at once after first payment. By reading our great announcement in this paper on the 29th day of January, 1916, you will learn exactly what these terms are, and no word of ours will be necessary to show you the value of your opportunity. You can see it at a glance.

You must rest assured that everything stated in this announcement is stated by a

necessary to show you the value of your opportunity. You can see it at a glance.

You must rest assured that everything stated in this announcement is stated by a commercial enterprise whose influence, in the business world, is so well established that your own banker will prove to be as large a testimonial as anyone would care to offer. To the curiosity seeker, the sceptic, the pessimist or the idler, we have nothing to offer. To the man who knows farm conditions, whose judgment has led him to success in the past, and to hope of continuous success in the future, we do want to appeal—and we want to appeal as strongly as we may. This land will all be sold, and sold to the right kind of people; and these people will be successful. If you are one of such, then we want to call your attention particularly to the issue of this publication which will appear on the 29th day of January, 1916. We want you to read this issue and to act on it'at once. It will have an offer that will be very attractive to everyone, provided he is alive to opportunity and takes time by the forelock. If, for any reason, you believe you will not see this issue, then by all means clip the coupon below and send to us NOW. We will place your name on our mailing list and send our literature to you. In this literature you will receive not only the same facts contained in our announcement, but you will obtain photographs and reproductions of the very sights you will view when you go down to visit the lands of this Company. We will keep your name and send this literature to you so that it will arrive, wherever you desire it to arrive, at approximately the same time as our announcement in this publication. In this way we will give you an equal advantage with the thousands of persons who will anxiously await the data pertaining to this New Land Opening in Louisiana.

### Here Is Prosperity Proof!





Upper photo illustrates High School Building at De Ridder, La. photo is a typical district school of the section.

terests have really awakened to the necessity of placing crops where once stood the forest tree.

MIXED FARMING AND READY MONEY

The charm of this section lies in a great degree with the fact that the Northern farmdegree with the fact that the Northera farmer can grow corn, oats, hay, the clovers, velvet beans, cowpeas and other legumes, and with less competition, than in almost any section of the North. There is need for the dairy cow; there is need for market cattle; there is a crying need for pork and sheep; and, while all these necessities await only the Man-quality to bring them into profitable being, there is the climate which makes possible the planting around a man's home of a few of the semi-tropical staples as byproducts to his farm. Such crops are oranges, kumquats, figs, grapes, pecans, vegetables, melons, ground fruits, etc., which will swell his opportunity to make a small acreage, with ordinary effort, yield tremendously.

at the same hour. In other words, the man who lives in the State of Washington will have the same opportunity, under our unique plan of selling, as the man in Ohio, Indiana, Illinois and Iowa. We have a UNIQUE plan, but because of the very fact stated above, we cannot unfold this plan in this publication, at this early date. All that we can do is to call your attention to our announcement in full, which will appear in the columns of this paper on the 29th day of January, 1916. It is our purpose to sell these lands in blocks of 40, 80, 120 and 160 acres. We will sell no land to any man unless we are assured that such an individual has the means to improve his land, and to cover his expenses for such a period until the farm can return to him a profit necessary to the work of making virgin acres—a producing farm. We want no idlers, nor people fascinated with false dreams. We want men and women who are as good as the soil and climate. No matter how rich the land, science always finds that a certain proportion of mankind

No matter who you are, or where you live---whether you are a reader of this paper, or the friend of a reader of this paper---you cannot afford to miss the opening announcement of the Long-Bell Farm Lands located in the ozone belt of Louisiana's Famous Highlands.

## Long-Bell Farm Land Corporation

SEND THIS COUPON TODAY AND BE SAFE

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of the Louisiana Land Opening. Name ..... P.O. ..... State .....

NOTE:-If you want to know the commercial value of the company standing responsible for this announcement, you may refer to any bank, express company or the commercial agencies, such as Dunn or Bradstreet, or you may address the Publisher or Business Manager of this publication.

PERE MARQUETTE

### Talk Number One

"FOR some time I have had it in mind to tell you frankly a few

important facts about Michigan's greatest transportation agency, the Pere Marquette Railroad-facts gleaned from personal experience, not so much from the standpoint of a railroad man but as the Court's Officer in charge of the property.

'My idea is that a great many of the troubles of railroad companies are due to misunderstandings and lack of information about the problems of railroading, which might be very properly given fully and freely to their patrons.

'You will be interested, I am sure, in knowing about the origin and growth of the system: why it is indispensable to the further development of the state; how it became involved in financial trouble; the problems of the Receivers in straightening out its affairs, the progress they have made and what they hope to accomplish.

"I am going to give you the benefit of my study of the situation and tell you what, it seems to me, ought to be done about it, both by the railroad and by the people of the state, so that both the state and the Pere Marquette can properly perform their full duties to each other.

"These are matters of importance, I think. If you think so, watch for the next talk. In the meantime we will be trying to give you service, and we hope we may have your support and Janes trung

> Operating Receiver, Pere Marquette Railroad.

### **Ship Your Furs Now To** Big Money in Trapping skunk, coon, mink, muskrat, fox, etc. You can trap furs—we teach you how. Funsten Animal Baits guaranteed to increase TRAPPERS GUIDE your catch. \$1.00 a can postpaid. The Funsten Perfect Smoker "smokes 'em out." Price \$1.50; parcel post 30 cents extra. Both guaranteed satisfactory or money back. Traps at factory prices. FREE 3 books in one (trapper's guide—game laws—supply catalog). Tells how, when, where to trap, how to remove, prepare and ship skins. Will send you fur market reports, shipping tags and big book FREE—Write today. We tan hides and furs for coats, robes and garments.

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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 in formation 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.

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We custom tan and dress out soft, pliable, moth proof, from a heef hideor horse hide a beautiful robe for you at \$3.50. Green plush lining comes extra at \$3.50 or \$7. complete job with a boutiful frowing border. Some for eatalog today. W. W. Weaver. Custom Tanner, Reeding, Michigan.

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## Light of Western Stars

= By ZANE GREY =Synopsis of Preceding Chapters.

Alfred Hammond, the wayward son of a rich New Yorker, left home to become a cattle man in New Mexico and for several years had little communication with his family. His sister Madeline, known to her friends as "Majesty," possessed of a fortune of her own, suddenly decides to visit him. She telegraphs but he fails to meet the midnight train on which she arrives at El Cajon. There had been a wedding at El Cajon that evening, and Gene Stewart, a reckless cowboy, had made a drunken wager that he would marry the first girl who came to town. Encountering Miss Hammond at the station and finding she wore no wedding ring, he brings a terrified Mexican priest and forces him to hurry through some form of words which Madeline is too dazed to understand. The strange ceremony is broken off, however, when Stewart learns she is Alfred Hammond's sister. He takes her to the house of her brother's fiancee, Florence Kingsley, who lives with a married sister. Here in the morning, Alfred and Madeline meet. He having failed in business is now foreman on Bill Stillwell's ranch. Gene Stewart is deeply repentant over the events of the previous night and Madeline's diplomacy averted expected trouble between him and Alfred. That same day, however, Stewart leaves for Mexico, following a fight with Pat Hawe, the sheriff. Another cowboy, Danny Mains, having money to pay Stillwell's men, mysteriously disappears. On the next day Madeline, Florence, Alfred and a party of cowboys leave for Stillwell's ranch in the foothills fifty miles from El Cajon.

CHAPTER VII.—(Continued).

She heard Stillwell throw the harness fresh." on the ground and slap his horses.

"Roll, you sons of guns!" he said. Both horses bent their forelegs, heaved down on their sides, and tried to roll over. One horse succeeded on the fourth try, and then heaved up with a satisfied snort and shook off the dust and gravel. The other one failed, and gave it up, half rose to his foller them tracks. Come on!" feet, and then lay down on the other

During lunch-time Madeline observturned the compliment, and was amused to see that a glance their way caused them painful embarrassment. They were grown men—one of them had white hair—yet they seemed like boys caught in the act of stealing a forbidden look at a pretty girl.

"Cowboys are sure all flirts!" said Florence, as if stating an uninteresting fact; but Madeline detected a merry twinkle in her clear eyes.

The cowboys heard, and the effect upon them was magical. They fell to shamed confusion and to hurried, useless tasks. Madeline found it difficult Peloncillo trail." to see where they had been bold, although evidently they were stricken with conscious guilt. She recalled aptiently. praising looks of critical English eyes, impudent French stares, burning Span- the other tracks." ish glances—gantlets which any American girl has to run abroad. Compared to foreign eyes, the cowboys' were those of smiling, eager babies.

"Haw, haw!" roared Stillwell. "Florwonderin' why them boys nooned blind." hyar. This ain't no place to noon. Ain't no grazin', or wood wuth burnin', or nothin'. Them boys jest held up, throwed the packs, an' waited fer us. asked. It ain't so surprisin' fer Booly an' Ned paw of both you girls."

A silence ensued. The white-haired come up." cowboy, Nels, fussed aimlessly over up with a very red face.

"Bill, you're a dog-gone liar!" he Bonita?" "I reckon I won't stand to be aint' no cowboy on this range thet's was sweet on Bonita, same as Gene more appreciatin' of the ladies than was, an' Ed Linton before he got enme. but I shore ain't ridin out of my gaged, an all the boys. Danny might way. I reckon I hev enough ridin' to hev sloped with her, all right. The do. Bill, if you've sich good eyes, boys think he was held up on the way mebbe you seen somethin' on the way to town, an' then, in the shame of it, out?"

rowed round his searching eyes.

"Jest take a squint at these hossthe horse that made them."

"Gene Stewart's roan, or I know nothing!" exclaimed Stillwell. He tracks."

dropped heavily to his knees and be-Madeline got down, glad to stretch gan to scrutinize the tracks. "My eyes her limbs, and began to stroll about. are sure pore; but, Nels, they ain't

> "I reckon them tracks was made early yesterday mornin'."

"Wal, what if they was?" Stillwell looked at his cowboy. "It's sure as thet red nose of yourn Gene wasn't ridin the roan."

"Who's sayin' he was? Bill, it's more'n your eyes thet's gittin' old. Jest

Stillwell walked slowly with his head bent, muttering to himself. Some thirty paces or more from the camped that she was an object of great in- fire he stopped short, and again flopterest to the three cowboys. She re- ped to his knees. Then he crawled about, evidently examining tracks.

> 'Nels, whoever was straddlin' Stewart's hoss met somebody; an' they hauled up a bit, but didn't git down." "Tolerable good fer you, B'll, thet

> reasonin'," replied the cowboy. Stillwell presently got up and walked swiftly to the left for some rods, halted, faced toward the southwest, and then retraced his steps. He look-

> ed at the imperturbable cowbow. "Nels, I don't like this," he growled. "Them tracks make straight fer the

"Shore," replied Nels.

"Wal?" went on Stillwell impa-

"I reckon you know what hoss made

"I'm thinkin' hard, but I ain't sure." "It was Danny Mains's bronc."

"How do you know thet?" demanded Stillwell sharply.

"Bill, the left front foot of thet little ence, you jest hit the nail on the haid. hoss always wears a shoe thet sets Cowboys are all plumb flirts. I was crooked. I'd know thet track if I was

> Stillwell's ruddy face clouded, and he kicked at a cactus-plant.

"Was Danny comin' or goin'?" he

"I reckon he was hittin' across counthey're young an' coltish; but Nels try fer the Peloncillo trail; but I ain t there, why, he's old enough to be the shore of thet without backtrailin' him a ways. I was jest waitin' fer you to

"Nels, you don't think the boy was the lamp-fire, and then straightened in town an' thet he-he-stole my money an' sloped with thet little hussy

"Bill, I wouldn't believe Danny was classed with Booly an' Ned. There a thief unless he said so; but he shore he got drunk. I think thet way, too; "Nels, I hevn't seen a thing," Still- an', of course, Danny might do any well replied bluntly. His levity disthin when he was drunk. But, Bill, appeared, and the red wrinkles nar- when he sobers up he'll be back to tell you-I'll bet on thet!"

"Wal, mebbe you an' the boys are tracks," said Nels. He drew Stillwell right. I believe you are. I was sure a few paces aside, and pointed to fond of Danny. Nels, there ain't no large hoof-marks. "I reckon you know doubt about who was ridin' Stewart's hoss?"

"Thet's as plain as the hoss's

Mention The Michigan Farmer When Writing Advertisers

"Wal, it's all amazin' strange. It up on drinkin'! I was pretty fond of age and bloodthirsty tribe that ever Danny an' Gene. I'm afraid Gene's made life a horror for the pioneer. done fer, sure. If he crosses the border, where he can fight, it won't take he was the victim of that friendliness, I'm gittin' old. I don't stand things like I used to."

"Bill, I reckon I'd better hit the Peloncillo trail? Mebbe I can find Danny."

of boys."

#### CHAPTER VIII.

That ended the conversation. Stillwell immediately began to hitch up his team, and the cowboys went out to fetch their strayed horses. Madeline had been curiously interested, and she saw that Florence knew it.

"Things happen, Miss Hammond." she said soberly, almost sadly, Madeline thought.

And then straightway Florence beban to hum a tune and to busy herself Madeline conceived a strong liking and respect for this western girl. She admired the consideration, or delicacy, or wisdom-whatever it was-that kept Florence from asking her what she knew or thought about the events that had taken place.

Soon they were once more bowling along the road down a gradual incline, and then they began to climb a long ridge that had for hours hidden what lay beyond. The climb was rather tiresome, owing to the sun and the dust and the restricted view. When Madeline listened, and Florence dozed they reached the summit, however, in her seat, and the sun began to Madeline gave a little gasp of pleasure. A deep, gray, smooth valley op- ily. Presently, at the foot of a steep ened below, and sloped up on the other side in little ridges like waves. These led to the foothills, dotted with clumps of brush or trees; and beyond rose dark mountains, pine-fringed, and crag-spired.

"Wal, Miss Majesty, now we're gettin' somewhere," said Stillwell, cracking his whip. "Ten miles across this valley an' we'll be in the foot-hills where the Apaches used to run."

"Ten miles!" exclaimed Madeline. "It looks no more than half a mile to me.'

"Wal, young woman, before you go to ridin' off alone you want to get your eyes corrected to western distance. Now, what'd you call them black things, off there on the slope?" "Horsemen. No-cattle," replied

Madeline doubtfully. "Nope. Jest plain, every-day cactus. An' look down the valley. Somethin' of a pretty forest, ain't thet?"

Madeline saw a beautiful forest in the center of the valley, toward the

"Wal, Miss Majesty, thet's jest this deceivin' air. There's no forest. It's a mirage."

"Indeed! How beautiful it is!"

Madeline strained her gaze on the dark blot, which seemed to float in the atmosphere, to have no clearly defined margins, to waver and shimmer; and then it faded and vanished.

The mountains dropped down again behind the horizon, and presently the road began once more to slope upward. The horses slowed to a walk, There was a mile of rolling ridge, and then came the foot-hills. The road as cended through winding valleys. Trees and brush and rocks began to appear in the dry ravines. There was no water, yet all along the sandy washes were indications of floods.

"Miss Majesty," said Stillwell, "in the early days the Indians made this country a bad one to live in. I reckon you never heard much about them times. Sure, you was hardly born then. I'll hev to tell you some day how I fought Comacnhes in the Panhandle-thet was northern Texas-an' I hed some mighty hair-raisin' scares in this country with Apaches."

He told her about Cohise, chief of beats me. I wish the boys would ease the Chiricahua Apaches, the most sav-Cohise befriended the whites once, but lang fer him to get plugged. I guess and he became the most implacable of foes. Then, as late as 1885, Geronimo, another Apache chief, went on the war path, and left a bloody trail down the New Mexico and Arizona line almost to the border. Lone ranchmen and "I reckon you had, Nels," replied cowboys had been killed, and mothers Stillwell; "but don't take more'n a had shot their children and then themcouple of days. We can't do much on selves at the approach of the Apache. the round-up without you. I'm short The name Apache curdled the blood of any woman of the southwest in those days.

Madeline shuddered, and was glad when the old frontiersman changed the subject and began to talk of the settling of the country by the Spaniards, the legends of lost gold-mines handed down to the Mexicans and strange stories of heroism and mystery and religion. The Mexicans had not advanced much, in spite of the spread of civilization to the south-They were still superstitious, west. and believed the legends of treasures repacking what was left of the lunch. hidden in the walls of their missions, and that unseen hands rolled rocks down the gullies upon the heads of prospectors who dared to hunt for the lost mines of the padres.

"Up in the mountains back of my ranch there's a lost mine," said Still-"Mebbe it's there. Other lost well. mines hev been found. An' as fer the rollin' stones, I sure know thet's true, as anyone can find out if he goes trailin' up the gulch. Mebbe they're only the weatherin' of the cliffs."

So the old cattleman talked on while wane, and the horses climbed steadascent, Stillwell got out and walked, leading the team. During this long climb fatigue claimed Madeline, and she drowsily closed her eyes.

When she opened them again, she found the glaring sun had changed to a steel-blue. The sun had sunk behind the foot-hills, and the air was growing chilly. Stillwell had returned to the driving-seat and was clucking to the horses.

Wal, Flo," said the old ranchman, "I reckon we'd better hev the rest of thet there lunch before dark."

"You didn't leave much of it," laughed Florence, as she produced the basket from under the seat.

While they ate, the short twilight shaded and gloom filled the hollows. Madeline saw the first star, a faint, winking point of light. The sky had

(Continued on page 78).

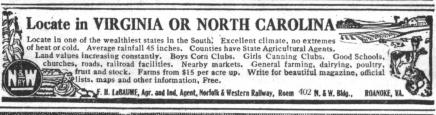


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#### Who Said "Wifely Submission"

WONDER if anyone aside from the family purse and "he" keeps that in old doctrine, "The man should be the those who have tried it find that head of the house?"

It might be all right, in extremely rare cases where the man is the superior of the woman. But in the majority of the homes of America the wife is the equal of the husband mentally and very often his superior morally. She should be a partner, to be consulted in every matter pertaining to the mutual welfare of the firm, as much when it is a question of spending money as when it is one of sav-

Yet in the average home, especially in rural communities, the man is absolute lord of the pocketbook. It doesn't matter if the couple start out without a cent and the wife works as hard as the husband to acquire the property, the deeds must be in the man's name and the bank account ditto. He holds the purse strings, and ties them in such a hard knot that there is small chance of feminine fingers untying them. Then if he dies



Crocheted Lingerie Tape.

suddenly without a will or gets tired of his wife and kicks her out for another, she gets just what the lawyers want to give her.

The trouble arises partly from the wife's ignorance of her own rights and of the property laws of Michigan, and partly from her desire to please when she is first married. The average bride is so desperately in love that she is willing to do anything for the sake of peace. If it annoys John to have her suggest joint deeds she shuts up after the first timid suggestion. Perhaps she never gets up courage to make the suggestion for fear husband will think she doesn't trust him. Of course, he will provide for her. Hasn't he sworn to? But unfortunately for wives the marriage contract is the only one men do not consider binding and they forget by the next day that they said, "With all my worldly goods I thee endow."

It takes on an average of five years for the woman to wake up to the fact that, though the minister had something to say about husband and wife being one, they really are two, and that she still has needs which are individual to herself. All too often friend husband does not recognize these personal needs and absolutely refuses to provide for them. She begins to see that it would be nice to have some money of her own, but unfortunately it has all gone into the

suffering has been caused by that ous job of starting a new regime and "teaching an old dog new tricks" is nothing as compared to breaking a husband in to new ideas in finance.

> you haven't done it remember it is and children. There is no reason why ness and she loses out all around. women should be forever dependent

on some man's charity or meanness. sc, decreasing every 3rd st, finishing There is never any question about her off at base with a slip stitch. The litbeing man's equal when there is any hard work to be done. It is only when from the glove, and is a constant rerecording angel knows how much his pocket. Then comes the strenuthere is a chance for her to own property or spend money that men discover she is not equal to the severe strain of attending to a little business.

> The only really happy homes are the ones where husband and wife are It's a fine thing to start right, but if equal partners and consult on every vital matter touching the home. It is never too late to do good. Begin now only in such an atmosphere that love to assert your rights to an equal share can survive. The woman who conin the profits as well as in the labor tinually gives up to her husband soon and for Heaven's sake train your comes to hate him thoroughly. And daughters to regard marriage as a she need not flatter herself that her partnership. This idea of wifely sub- submission will keep his love. On the mission is a fine thing for the men, other hand, he despises her for her but it's mighty hard on the mothers weakness in submitting to his selfish-

## For the Fancy Worker By MAE Y. MAHAFFY.

With a medium weight cotton make a lion by a few stitches with a needle. chain (ch) a little over a yard long,

Make a second of these little medal- circles are united. lion-like designs separate from tape.

F one desires some little gift that dallion remains flat on the surface, can be slipped inot a letter one of and wrap the tape about the center of the most practical, considering its card. Bring end out through remainexpense, is a crocheted lingerie tape. ing hole, and attach the other medal-

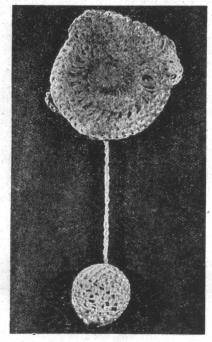
A little glove purse of crochet is and then work back along it in single handy to carry a bit of change for a crochet (sc) stitch (st. For the half- collection or for car fare when one medallion at end, ch 5, join to form dislikes to carry a large pocketbook. loop. S c into loop eight times. Turn, Make a circle of a ch of 4, and dc into ch 1, then 3 and catch to 1st to form this 22 times. For the next row make a picot; ch 4, make another picot, ch an equal number of dc sts but ch 1 be-1. Ch 2 to turn, then 5, and triple tween every other of these. Make ancrochet (tc) 1 between picots; ch 5, to other circle like this, and join the two to 1 between next picots, ch 5, double for about two-thirds of their circumcrochet (dc) 1 at edge. Turn, sc 9 ference with sc. For the remaining over each ch of 5. Ch 1 to turn, picot third, on one of the circles ch 2, dc 17. 3, catch in center of loop; picot 3, Attach a tiny crocheted button or ring catch below tc; picot 3, and catch in to center. For the other circle after center of next loop; picot 3, and catch making the 17 dc sts turn and sc back below next tc, 3 picots and into center to the 7th, dc 3, sc 2. Turn, sc 4, dc of last loop, 3 picots, and to edge with 2, sc 4. Turn, sc 5, ch 6 for loop, sc 5, and continue sc to where the two

Make a ch of 43, using last 3 to form Cut a card from red or green card- a loop, into which sc 10. Continue board about two and a half by four to sc round and round, increasing 1 Punch holes in two corners, every 3rd st until there are four or diagonally opposite. Run the tape five rows altogether. Slip a small through one of these so that the me- marble into this case, and continue to

tle marble serves to draw the case minder by its weight that the coins are safe.

A half yard length of three-inch ribbon, and an equal length of white silk about four inches wide will form a handy wrist bag for the crochet worker. Turn the edges of the silk in, so that it will project about a quarter of an inch at either side of the ribbon, and stitch together. Lay two tucks in the center and stitch for about four inches. Turn the ends together to form bottom of bag, and stitch, running the stitching up at either side about three inches.

A pleasing gift for a young mother, and one which is suitable for baby showers, is a lap cover or mat. Use single white Germantown yarn, and crochet two squares about 12 or 15 inches across. Use any familiar stitch, working back and forth across. A combination of star stitch for a couple of rows, and then single crochet for

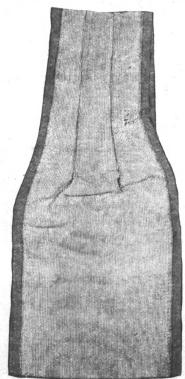


A Convenient Glove Purse.

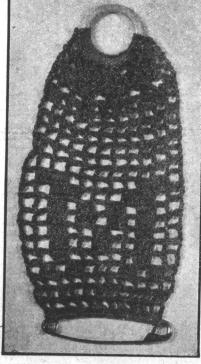
three or four, makes a very pretty pattern. Unite the two squares on three sides with a simple little scallop or shell, carrying the same along the fourth edge of each square separately. Insert a square of rubber sheeting. The slip will wash readily, and is soft and comfortable for the little one.

One of the daintiest possible methods of finishing a small white apron is to turn a half-inch hem, and feather stitch it all around. Then, without any thread on the machine, stitch very close to the outer edge of the hem. In the holes thus made crochet, using fine cotton, and making single crochet stitches for the first row, with a simple shell pattern as a finish. Some prefer a picot scallop, but the shell pattern is a bit later in the fancy work

Lovely little trays are made by gilding a pair of oval embroidery hoops and fitting them with a piece of figured silk, a bit of crochet or embroidered linen. If the material seems too loose to remain smooth run the outer edge of the smallest hoop with glue; then place the material in position, and fit on the outer hoop carefully. If one wishes to add little handles small



Wrist Bag for the Crochet Wørker.



A Novel Skirt Hanger.











a bit of ribbon, answer nicely.

an ivory ring about an inch in diam- very slight amount of extra work is meshes. Ch 5 to turn, as before, and try life. continue the open meshes until there are 10 rows. It will now be time to start working in the initial, M being used in this instance. Make 1 open mesh, then 2 solid, which requires 7 strated at the potato show recently dc, 5 open mesh, 2 solid, 1 open to fin- held in Grand Rapids, Mich.: ish that row.

Next row: 2 open, 2 solid, 3 open, solid, 2 open.

open, 1 solid, 1 open, 1 solid, 1 open, toes, and season with butter, salt and solid, 2 open.

Fourteenth row: is same as 13th. id, 2 open, 1 solid, 2 open, 1 solid, 2 minutes in a hot oven. Potatoes may open.

pen, 1 solid, 2 open.

1 solid, 1 open.

open meshes. And the last row is crocheted around the closed side of a ful to three medium-sized potatoes) large safety pin.

may be of any desired color. Small parsley (one teaspoonful to three mesized initials in cross stitch, bead work dium-sized potatoes). or filet will answer for patterns.

#### THE FIRST TABLE.

BY HILDA RICHMOND.

men were employed during harvest, and where work was very pressing during the busy season, a trained nurse who was visiting with her relatives, begged to try an experiment. ladies', misses' and children's garments in current fashions, also newest gave her consent and more doubtfully during the busy season, a trained gave her consent and more doubtfully gave her consent and more doubtfully comprehensive article on dressmaking tried the plan, but within a week she which gives valuable hints to the was enthusiastic in praise of it, and home dressmaker, will be sent to any from that time forth it has been an address upon receipt of ten cents. from that time forth it has been an established fact in the home. The mistress of the house is happy and healthy and the daughters are contented and beautiful, and there is no more talk about wanting to go to town, all on account of one simple little rule clung to through thick and thin.

The trained nurse prepared and served 40 minutes before the regular dinner hour a tempting, appetizing meal, and gathered about the improvised porch dining table the ladies of the household and the two little children. She served creamed vegetables, very little meat, fruits, light soups, eggs in various forms, light, nourishing desserts and fresh milk in abundance. All her culinary knowledge acquired in hospital days was brought out, and the food was so delicious and so healthful that everyone enjoyed the dinner hour to the limit. There was not a heavy thing on the table and on very hot days most of the food was cold, but it was ample and strengthening, and one and all approved the plan at once. The "first table" is a fixed fact in that home, and they declare it always will be.

When the hungry men came in later to their hearty boiled ham and beans, refreshed and ready to look after their 10 cents. refreshed and ready to look after their wants. Every country woman knows how appetizing are the remains of a 32 inches waist measure. It requires heavy dinner after the men have despected and the table must be cleared, inch size, which measures 3\% yards parted and the table must be cleared. but in this home everything was changed. The men needed the hearty in six sizes, 34, 36, 38, 40, 42 and 44 food and cared nothing for the light inches bust measure. It requires 514 food and cared nothing for the light dishes, so every appetite was satisfied and the cost of living not increased.

And after it was an established fact the mistress of the house confessed that she was only prejudiced against it because it seemed not exactly the size. The skirt measures 2% yards at its lower edge. Price 10c.

No. 1431—Ladies' Apron. Cut in the sizes, small, medium and large. It requires 4% yards of 27-inch mamichi happy babies scarlet fever terial for a medium size. Price 10c.

ivory rings, caught to the glue with thing to do for them to eat first. There are few farm houses where a Skirt hangers in pairs are always little extra cooking and early serving acceptable gifts. To make in filet would not bring increased health and crochet, double crochet 34 times into happiness as it did in that case. The eter. Crochet five chain stitches to more than made up by the fact that turn, and dc 1 into 4th stitch. Ch 2 everyone concerned is healthier and and dc 1 into 4th st still in advance, happier and particularly are the and so on across, making 11 open young people more content with coun-

#### POTATOES IN VARIOUS WAYS.

The following recipes were demon-

Stuffed Potatoes.

Cut baked potatoes in half, remove the pulp, mash it, add enough milk for Thirteenth row: 2 open, 1 solid, 1 the usual consistency of mashed potapepper. Fill the cases with this mixture, dot the tops with butter or brush Fifteenth and 16 rows: 2 open, 1 sol- with milk, and bake for eight or ten be stuffed in the morning and heated Seventeenth row: 2 open, 1 solid, 5 at noon or in the evening for dinner.

Variations.-To the mashed pota-Eighteenth row: 1 open, 1 solid, 1 toes, before the cases are filled, may open, 1 solid, 3 open, 1 solid, 1 open, be added any one or a combination of the following: (a) beaten white of Nineteenth, 20th and 21st rows, all egg (one egg to three medium-sized potatoes). (b) grated cheese (half cup-(c) chopped meat (half cupful to three The hangers should be in pairs, and medium-sized potatoes). (d) chopped

Franconia Potatoes.

Parboil potatoes for ten minutes. Remove the skins and place the potatoes on a roasting rack with meat. Bake until the potatoes are soft, or for In a farm house where many extra 40 minutes, basting them occasionally.

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at the foot. Price 10c.
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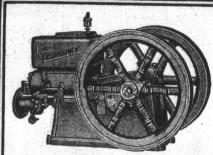
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#### LIGHT OF WESTERN STARS.

(Continued from page 75). ly it cleared and darkened, to show other faint stars. After that there gray, and enlargening of the stars, and a brightening of new-born ones.

Night seemed to come on the cold wind. Madeline was glad to have the robes close around her and to lean against Florence. She grew so sleepy that she could not keep her weary eyelids from falling. There came a blank interval, short or long, which ended in a more violent lurch of the buckboard. She awoke, to find her head on Florence's shoulder. She sat up, laughing, and apologizing for her laziness.

Madeline observed then that the horses were once more trotting. The wind was colder, the night darker, and the foot-hills were flatter. The sky was now a wonderful deep velvet blue, blazing with millions of stars. Some of them were magnificent. Again Madeline felt the insistence of familiar, yet baffling, associations. These white stars called strangely to her.

#### CHAPTER IX.

It was a crackling and roaring of fire that awakened Madeline the next morning. The first thing she saw was a huge stone fireplace, in which lay a bundle of blazing sticks. Someone had kindled a fire while she slept. For a moment the curious sensation of being lost returned to her. She just dimly remembered reaching the ranch and being taken into a huge house and a huge, dimly lighted room. It seemed to her that she had gone to sleep fling, so grand. at once and had awakened without remembering how she had got into bed.

stant. The bed stood near one end and sadly dilapidated. Light flooded the right of the fireplace, two on the the bedstead.

under the warm blankets.

ence entered carrying steaming hot the cattle. Wait-I'll get the glasses." water.

tired last night. I imagine you'll find ted lines of animals scattered in every barn. It'll warm up directly. Al's of dust, grazing and running horses, gone with the boys and Bill. We're to horsemen standing still like sentinels, ride down on the range after a while, and others in action. She spent most when your baggage comes."

Florence wore a woolen blouse with out over the ever-changing vista. a scarf around her neck, a short di-A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much Write to Mr. A. L. Rice, Manufr. 131 North St. Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

While she talked she energetically madeline unpacked part of her effects and got out things for which she would the foot of the bed, heated a rug, and have immediate need. After lunch have immediate need the Mexican woman get lunch, Madeline unpacked part of her effects and got out things for which she would the foot of the bed, heated a rug, and have immediate need. After lunch have immediate need the Mexican woman get lunch, Madeline unpacked part of her effects and got out things for which she would have immediate need. After lunch have immediate need have immediate need have immediate

out your maid. Will you let me help ance in one swift, inquisitive glance,

"Thank you, I am going to be my

the place."

Madeline was charmed with the old

Spanish house, and the more she saw of it the more she thought what a delightful home it could be made. All now changed to a hazy gray. Gradual- the doors opened into a courtyard, or patio, as Florence called it. The house was low, rectangular in shape, and so came a perceptible deepening of the large that Madeline wondered if it had been a Spanish barracks.

> Many of the rooms were dark, without windows, and they were empty. Others were full of rancher's implements, sacks of grain, and bales of hay. Florence called these last "alfalfa." The house itself appeared strong and well-preserved, and it was very picturesque; but in the livingrooms were only the barest necessities, and these were worn out and comfortless.

However, when Madeline went outdoors, she forgot the cheerless, bare interior. Florence led the way out on a porch and waved a hand at a vastcolored void.

"We're up at the edge of the foot-hills," Florence said. "You remember we rode around the northern end of the mountain range. Well, that's behind us now, and you look down across the line into Arizona and Mexico. That long slope of gray is the head of the San Bernadino Valley. Straight across you see the black Chiricahua Mountains, and away down to the south the Guadalupe Mountains. That awful red gulf between is the desert; and far, far beyond, the dim blue peaks are the Sierra Madre, in Mexico."

Madeline listened, gazed with straining eyes, and wondered if this was only a stupendous mirage, and why it seemed so different from all else that she had seen, and so endless, so baf-

"It'll sure take you a little while to get used to being up so high and see-But she was wide awake in an in- ing so much," explained Florence. "That's the secret-we're up high, the of an enormous chamber. The adobe air is clear, and there's the whole walls resembled a hall in an ancient world beneath us. Don't it somehow feudal castle, stone-floored, stone- rest you? Well, it will. Now see walled, with great darkened rafters those specks in the valley. They are running across the ceiling. The few stations-little towns. The railroad articles of furniture were worn out goes down that way. The largest speck is Chiricahua. It's over forty miles into the room from two windows on by trail. Here, round to the north, you can see Don Carlo's rancho. He's left, and another large window near fifteen miles off, and I sure wish he were a thousand! That little green Looking out from where she lay, square about half-way between here Madeline saw a dark, slow upsweep of and Don Carlos—that's All's ranch. mountains. Her eyes returned to the Just below us are the adobe houses of cheery, snapping fire, and she watched the Mexicans. There's a church, too. it while gathering courage to get up. And here to the left you see Stillwell's The room was cold. When she did corrals and bunk-houses and stables, slip her bare feet out upon the stone all falling to pieces. The ranch has floor, she very quickly put them back gone to ruin. All the ranches are going to ruin; but most of them are lit-She was still in bed trying to pluck tle one-horse affairs. And here—see up her courage when, with a knock on that cloud of dust in the valley? It's the door and a cheerful greeting, Flor- the round-up. The boys are there, and

By their aid Madeline saw in the "Good morning, Miss Hammond! foreground a great, dense herd of cat-Hope you slept well. You were sure tle, with dark, thick streams and dotthis old rancho house as cold as a direction. She saw streaks and clouds of the morning on the porch, gazing

At noon a teamster drove up with vided skirt of corduroy, and boots. her trunks. Then, while Florence help-While she talked she energetically ed the Mexican woman get lunch,

and then shone with pleasure.

"You sure look-you're a picture, own maid for a while. I expect I do Miss Hammond! That riding-outfit is appear a very helpless individual, but a new one. What it'd look like on me really I do not feel so. Perhaps I have or another woman I can't imagine; had just a little too much waiting on." but on you it's—it's stunning! Bill "All right. Breakfast will be ready won't let you go within a mile of the soon, and after that we'll look about cowboys. If they see you, that'll be the finish of the round-up!"

(Continued next week).

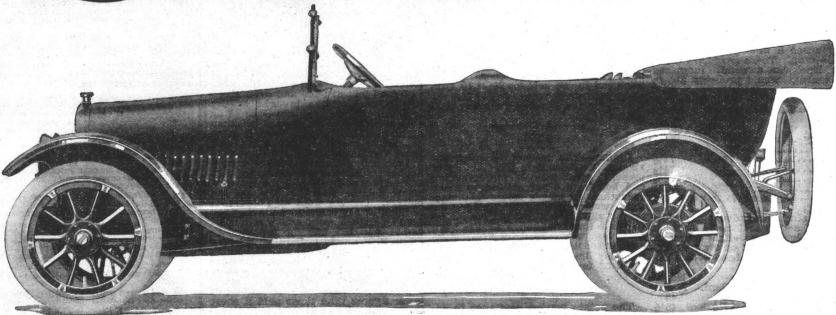
## The NEW and GREATER CHANDLER SIX



POWER-Ample to take this car, loaded, anywhere that any automobile can go.

SPEED-More than 999 out of every thousand car owners would ever want or dare to use.

MOTOR—The Marvelous Chandler Motor, built in the Chandler factory for three years past and famous the world over. Free from any hint of experimentation.



#### The Most Beautiful of all the New Motor Car Bodies-Before the Season's Over Any Other Style Will be Out of Date

THE price of the new model Chandler Six—the leading six—is \$1295.

We are proud that with steel and aluminum and leather and all other motor car materials so HIGH we

can sell the Chandler at a price so LOW.

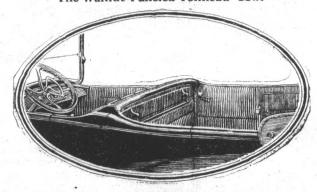
Yes, there are lower prices. But there is no price so low for such a car.

We could build a cheap car. That would be easy. But it would be a problem, indeed, to build a better car. We could build a small car. But the people, in the cities and in the country, who want the Chandler want roominess and power and sturdy construction and style. So we build the best six-cylinder car in the world, and then we for the price of lower six teap he made.

then we fix the price as low as it can be made.

This policy has made the Chandler a price-pioneer in the quality six-cylinder field. This policy put on the market three years ago this month the first high-grade six selling for less than \$2000,—the \$1785 Chandler. This policy reduced that price later to \$1595, and this policy brings you now this Greater Six for \$1295.

The Walnut-Paneled Tonneau Cowl



#### INTERESTING CHANDLER **FEATURES**

EQUIPMENT — Highest grade equipment is a feature of the Chandler now, as always, including Bosch High Tension Magneto, Gray & Davis separate unit Electric Starting and Lighting System, Chandler aluminum crank case, Chandler full floating silent spiral bevel-gear rear axle, silent chain drive for motor shafts, annular ball bearings, Stewart-Warner magnetic speedometer, Stewart vacuum gasoline feed, non-skid tires in rear and all the usual incidental items.

BODY FINISH-Chandler blue, deep, lustrous finish. Fenders, wheels and motor hood black. Deep cushioned upholstery covered with longgrain semi-glazed leather.

VERYONE knows the Chandler pretty well now, from the mechanical standpoint. Everyone knows how the Chandler has made good right from the beginning. The Chandler is almost everywhere in America now. Thousands of them, from coast to coast, in the hands of happy owners. So, we say, you know the mechanical excellence of this car.

And now we want you to know the new Chandler touring body and the new Chandler four-passenger

The big seven-passenger car, with new body, and walnut-paneled tonneau cowl, is simply a delight. In grace of line we do not believe there is any other car to match it. The picture gives you just a hint of its beauty. You must see the car itself to know just how much we mean when we say it is the handsomest car of the year.

#### Room to Spare—A Comfort Margin

There are a good many automobiles with seats, but not

There are a good many automobiles with seats, but not room, for seven persons.

The big Chandler is a real seven-passenger car. There's room to spare—a comfort-margin. The seats are wide and tilted a bit, and everyone speaks of the "leg-room."

The interior finish, too, is in keeping with the rest of the car. The deep, pillowy hair cushions, upholstered in the new long-grain leather, the walnut-paneled tonneau cowl and all the other niceties of finish and completeness, reflect our thought for your comfort and your sense of reflect our thought for your comfort and your sense of

So go now to see this car at your dealer's. He is one of a thousand who have the new Chandler ready for inspection and demonstration, and who can give you delivery at any time you designate, provided you place your order now.

The New Chandler Catalogue illustrates the New Big Touring Car, the Four-Passenger Roadster, other body types and all mechanical features fully. If you do not know your Chandler dealer write us today.

CHANDLER MOTOR CAR CO., 2701-2731 E-131st., Cleveland, Ohio.

### Markets.

GRAINS AND SEEDS.

January 11, 1916.

Wheat.—Transportation facilities are operating against higher prices for wheat in this country. The congestion of stocks at terminal and seaboard ion of stocks at terminal and seaboard to fine stocks at terminal and seaboard to fine searcity of ships auger than the supply but turkeys are dull and lower. Turkeys 17@18c; spring turkeys 22@23c; fowls 10@ to quality; spring turkeys 22@23c; fowls 10@ veals, good to choice \$11.25@11.50; common to fair \$8@11; heavy \$6@9. wheat in this country. The congestion of stocks at terminal and seaboard points and the scarcity of ships auger for lower values on this side, notwithstanding the strength given to prices in Liverpool. Primary receipts, although coming forward in reduced quantities are still running ahead of those of a year ago. The visible supply increased 2,515,000 bushels last week. Improvement of transportation conditions will do much to change valweek. Improvement of transportation conditions will do much to change values. One year ago No. 2 red wheat was quoted locally at \$1.33½ per bu. Last week's Detroit quotations were:

No. 2 No. 1

Red. White. May.

1 25 1.20 1.30

Wednesday .....1.25  $\frac{1.20}{1.19}$ 1.30 1.29½ wednesday .1.25 1.20 1.30 Friday .1.24 1.19 1.29½ Saturday .1.24½ 1.19½ 1.30 Monday .1.24 1.19 1.29½ Tuesday .1.24½ 1.19½ 1.30½ Chicago.—May wheat \$1.26½; July \$1.19¼ per bushel.

Corn.—Merchantable corn is not so plentiful as estimated last fall, due to the large per cent of soft ears. At the opening this week prices were fully a cent above the quotations of a week earlier. In Chicago on Monday the price reached a new high record for the 1915 crop. There is much talk of a good European demand. Increased ocean tonnage would probably aid in advancing prices. One year one Market and in advancing prices. ocean tonnage would probably ald in advancing prices. One year ago No. 3 corn was quoted at 71c per bushel. Last week's Detroit quotations were:

No. 3 No. 3

Mixed. Yellow Wednesday Thursday Friday Saturday Monday ...... Tuesday ..... Chicago.-May corn 79.2c per bush-

Chicago.—May corn 79.2c per bushel; July 79c.
Oats.—Values are advancing. The demand is active and trade is firm. Visible supply shows a slight decrease. One year ago standard oats were quoted at 54c per bushel. Last week's Detroit quotations were:

| 2.00            | Standard.     | White.  |
|-----------------|---------------|---------|
| Wednesday       | 47            | 45      |
| Thursday        | 471/2         | 451/2   |
| Friday          | 48            | 46      |
| Saturday        | 48            | 46      |
| Monday          | 48            | 46      |
| Tuesday         | 481/2         | 461/2   |
| Chicago.—May oa | ats 49.1c per | bushel. |

Rye.—Advanced to 97c for cash No.

2, Demand is fair and trade firm.

Barley.—At Milwaukee prices for malting grades are up to 70@78c, and

malting grades are up to 70@78c, and at Chicago 64@78c.

Peas.—Chicago's prices nominal at \$2.35@2.60 per bushel, sacks included.

Beans.—Cash beans are up 10c from last week at \$3.70. Offerings are scarce and demand good, considering the high range of values. At Chicago there is improvement in demand and pea beans, hand-picked, are quoted at \$3.90; prime do. \$3.70@3.80; red kidneys \$5@5.40.

Clover Seed.—Slightly lower at

Clover Seed.—Slightly lower at \$11.90 for prime spot. March \$11.80; prime alsike \$10.25.
Timothy Seed.—Prime spot \$3.80.

#### FLOUR AND FEEDS.

Flour.-Jobbing lots in one-eighth

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.80; seconds \$6.50; straight \$6; spring patent \$7.10; rye flour \$5.90.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$30; cracked corn \$30; corn and oat chop \$28 per ton.

Hay.—No. 1 timothy \$18@19 a ton; standard timothy \$17@18; light mixed \$17@18; No. 1 mixed \$14@15; No. 2 mixed \$10@12; No. 1 clover \$10@12.

Chicago.—Higher. Choice timothy \$17.50@18.50; No. 1 do \$15.50@16.50; No. 2 do, \$13.50@14.50.

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

#### DAIRY AND POULTRY PRODUCTS.

Butter.—No change in general tone of the market and prices remain unchanged. Extra creamery 31c; firsts 28c; dairy 23c; packing stock 18c.

Chicago.—The market is quiet, the buyers only buying where exceptional values are offered. Prices are slightly lower. Storage stock is moving moderately with buyers anxious to sell. Extra creamery 30½c; extra firsts 29½@30c; firsts 25@28c; extra dairies 30c; packing stock 19@19½c. oc; packing stock 19@19½c.
Elgin.—A decline of ½c has brought

an improvement in trading.

still plenty of stock on hand, however. The quotations, based on sales, is 31c. Ket is bound to have a depressing effect on the trade for the next few days and would not advise buying hogs to sales. Current receipts are quoted at 28½c; candled firsts 29½c.

Chicago.—Although receipts were larger the prices remained unchanged. The sheep and lamb market was active today and prices 15c higher than larger the prices remained unchanged. The close of last week. All sold and we look for shade lower prices balance of the week.

Is greater than the supply out turkeys are dull and lower. Turkeys 17@18c; spring turkeys 22@23c; fowls 10@15½c, according to quality; spring chickens 15@16½c; ducks 18@19c; geese 15½@16c.

Chicago.—Higher prices were obtainable for everything except turkeys.

Offerings were light but present prices ought to encourage shipments. Turkeys, young and old 12@18c; fowls 12½@15½c; springs 16c; ducks 17c; geese 10@16c.

#### FRUITS AND VEGETABLES.

Apples.—There is no change, the market being quiet. Greenings at \$2.50 @3; Spys \$3.50@4; Baldwins \$2.50@3.50; Steel Red \$4.50@5. At Chicago At Chicago eling. Fea-

3.50; Steel Red \$4.50@5. At Chicago there remains an easy feeling. Features of the market are good stocks and tame demand. High prices on some varieties are lower. No. 1 Greenings \$2.50@2.75; Jonathans, No. 1 \$2.50@2.75; Baldwins \$2.50@3; Wageners \$2.25@2.75; Spys \$2@3.75.

Potatoes.—The market is firm and higher. The demand is brisk and the supply light. Carlots on track, white \$1@1.05; red 95c@\$1 per bushel. At Chicago the market showed sustained strength, with prices higher. Fancy Michigan Rurals sold for \$1@1.10. Other prices range from 95c@\$1.10. At Greenville the farmers are being paid 90c per bushel.

#### WOOL.

Boston.—The market is quiet but strong. Confidence in the stability of present quotations is strengthening and holders are not obliged to make reductions to induce sales. Manufactured woolen goods are in strong domestic and foreign demand for far into the future. Atthough fleeces were quiet last week, inquiries are numerous and sales in these grades will probably increase in volume during the next few weeks.

#### GRAND RAPIDS.

The potato market continues to advance, with local prices around 70 w 80c, and these figures applying at some of the outside buying stations. It looks like dollar potatoes now, and that very soon, in view of the short crop last season. Beans are also higher, white pass hears being weeth \*120er, white pea beans being worth \$3.30 and red kidneys about \$1 higher. The egg market is expected to weaken the last of the week but starts off this week at 30@34c. The apple movement is still slow. Dry onions are quoted at \$1@1.25. Master butchers here are quoting hors at \$4.00 celesce. here are quoting hogs at 8@9c; calves 10½@12½c; mutton 8@10c. No. 2 red wheat is worth \$1.16; rye 85c; corn 70c; oats 40c.

#### DETROIT EASTERN MARKET.

Trading was active Tuesday morn-g. Apples steady at 80c@\$1.50 per i; cabbage 50@65c; parsnips 75c; urots 75c; pork \$9.50@10.50 per cwt; eggs 45c; loose hay \$18@22 per ton.

#### LIVE STOCK MARKETS.

Buffalo.

January 11, 1916.

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

Receipts of stock here today: Cattle 125 cars; hogs 150 d. d.; sheep and lambs 40 d. d.; calves 1000 head.

With 125 loads of cattle on our market here today, we had an unevenly higher trade, bulk of the cattle 10@ 25c higher, and some of the good shipping cattle showed 50c per cwt. higher. There were only a few loads of good shipping cattle here; two best loads sold at \$8.85. We look for a fair run of cattle next Monday and a steady market. market.

market.

Our receipts of hogs today were quite liberal, about 150 double decks yarded up to 3:00 o'clock this afternoon and fully 30 to 40 double decks that were not yarded until after dark. This was quite an excessive supply, and with runs all over the west, market was slow and generally 15c lower than Saturday's best time, pigs selling at 7c generally, and all other best grades at \$7.25; roughs \$6@6.35; stags \$4.50@5.25. Our late market was very dull and with a liberal supply in sight for Tuesday it will be hard work to hold prices steady at the very best; 90,000 hogs reported in Chicago

Chicago.

Chicago.

January 10, 1916.
Cattle. Hogs. Sheep.
Receipts today. 22,000 85,000 27,000
Same day 1915...30,000 60,000 37,000
Last week..... 48,758 334,279 80,192
Same wk 1915...51,932 278,075 117,482
This week opens on a steady cattle market, the demand being rather good, with few choice beeves on sale. Hogs are off 10@15c because of the liberal receipts, sales ranging at \$6.35@6.95, with some prospect of a \$7 top. Hogs received last week averaged 191 lbs. Sheep and lambs are largely 10@15c lower, with prime lambs selling at \$10.50 and prime ewes at \$6.75.

Moderate receipts of cattle last week

Moderate receipts of cattle last week and an improved general demand advanced prices in many instances 25c or more. As there were no prime beeves of the kind that topped the market a week earlier at \$9.75, no sales took place above \$9.50, that price being paid for heavy steers, and no yearlings were shown prime. no yearlings were shown prime enough to go over \$9. The bulk of the steers crossed the scales at \$6.85@ 8.75, choice beeves at \$9 and upward and good lots at \$8.50 and over. Medium to good steers brought \$7.50@ 8.45, inferior to fair steers \$5.50@7.45, with medical steers \$5.50@7.45, with medical steers \$5.50@7.45, with medical steers \$6.50@7.45, w 8.45, inferior to fair steers \$5.50@7.45, with small scattering sales of less than carlots at \$4.50@5.45. Plain to good yearlings brought \$6.50@8.50, and fancy yearling steers and heifers were not offered. Butcher stock had a good demand, with cows going at \$5@7.25 and heifers at \$4.50@8.50 and very few prime female cattle offered on the market. Cutters went at \$3.95@4.95, canners at \$3@3.90 and bulls at \$4.50@7.15. Calves were active sellers at canners at \$3@3.90 and bulls at \$4.50 @7.15. Calves were active sellers at \$9@11 per 100 lbs. for ordinary to prime light-weight vealers, with heavy calves going at \$4.50@8.50. The range of cattle prices has narrowed in re-cent weeks, with the poorer class of light steers selling much higher, while the best cattle are taken at very much lower figures than those paid a short time ago for fancy Christmas cattle. A large share of the short-fed medium to good dressers and some short corn-eaters went at \$7.10@7.40, and sup-plies prime enough to go over \$8.75 were small and no generous propor-tion of right good 1250 to 1400-lb. kill-ers that brought \$8.50@8.75. Hogs sold wonderfully well last week, considering the enormous offer-

ers that brought \$8.50@8.75.

Hogs sold wonderfully well last week, considering the enormous offerings, and this was particularly true of the choicer lots of hogs adapted for shipping. On the high day of the week hogs sold higher than at any previous time since last October. Light-weight hogs and pigs predominate among the daily arrivals, the recent receipts averaging but 190 lbs., comparing with 222 lbs. a year ago and 209 lbs. two years ago. Stocks of cured hog meats are accumulating in western packing points, despite a large cash demand, and on the first of this month they aggregated 175,414,000 lbs., comparing with 104,359,000 lbs. a month earlier and 219,180,000 lbs. a month earlier and 219,180,000 lbs. a wear ago. After the best hogs sold up to \$7.25, the market broke, with sales at the week's close at \$6.60@6.82½ for light bacon hogs, \$6.35@6.95 for heavy packing hogs, \$6.35@6.95 for light shipping lots, \$6.97½ to \$7.10 for heavy shipping lots and \$5@6.65 for pigs. A week earlier hogs brought \$6.60@7.10. The week's receipts greatly exceeded all former records.

week's receipts greatly exceeded all former records.

Lambs, yearlings and sheep sold last week at extraordinarily high prices, with prime lambs selling higher than was ever known before in midwinter. Yearlings were offered in fair numbers, as were ewes, but wethers were very few. Lambs closed at \$7.50 @10.60; yearlings at \$7.75@9.10, wethers at \$6.65@7.35, ewes at \$4.25@6.85 and bucks at \$5@5.75. Sheep and yearlings advanced 25@40c, while most lambs sold 75c higher than a

ed, the Superintendent of Institutes has advised us of the following changes in one-day Institutes:

Shiawassee Co., Henderson, Jan. 14;
Bancroft, Jan. 15; Morrice, Jan. 18;
Maple River Church, Jan. 19.

Mecosta County dates published on page 58 are cancelled.

Jackson Co., Parma, Jan. 17; Concord, Jan. 18; Pulaski, Jan. 19; Horton Jan. 20; Liberty, Jan. 21; Rives Jan. 22.

Texas farmers have made sales of cotton to German agents and they hope to make shipments by way of Sweden. The price is 27 cents per pound, which is more than twice America's present quotation. The first shipment will be made February 1.

Business conditions in the United States continue to expand and the outlook is encouraging. Annual settlements have been made with little strain, earnings have been large, manufacturing plants have had shorter sea-

ufacturing plants have had shorter seasonable shut-downs than usual and all sections of the country seem to be participating in the wave of prosper-

#### Couldn't Do Without His

#### Hinman Milkers.

"The Hinman Milker I bought of you last fall is O. K. Couldn't get along without it. Can milk in one-third of the time I did before. I have 20 Holstein cows". E. Coats & Son. Coats Grove, Mich.
"I had a Hinman outfit only a few weeks when six of my neighbors bought". H. N. Hood, R. No. 2, Adrian Mich.
There are hundreds of Hinman Milker.



Hood, R. No. 2, Adrian Mich.

There are hundreds of Hinman Milker users in Michigan assatisfied as Mr. Coats and Mr. Hood, At Morner there are 28 Hinman users, 8 at Adison and 6 at Hudson. Each Human milker outfit helps to sell many more because they do the work, do it right and give satisfaction.

If none of these are near enough for you to go and see write us and we will send you the names of some near you

The Himman is the original unit system

The *Hinman* is the original unit system and the individual pump and valve are so simple a boy can operate and milk your cows successfully

Hinman Milking Machines are daily milking over 360,000 cows. For large or small herds they are equally suitable and the price is within the reach of the man with six cows. Let us send you free a copy of our latest cat-og which gives full information of our

HINMAN MILKING MACHINE CO., 74-84 Elizabeth St., Oneida, N. Y.





BOOKS AND ADVICE FREE
Watson E. Coleman, Patent Lawyer. Washington, D.C.

#### THIS IS THE LAST FRITION.

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

#### DETROIT LIVE STOCK MARKET.

Thursday's Market. January 13, 1916. Cattle.

Receipts 2214. There was a marked improvement in the railway service this week and all stock was handled in good shape considering weather conditions. On Wednesday the sleet storm made it very hard work getting stock from the cars to yards and a train of war horses that were brought here for feed could not be unloaded, as the horses, not being shod, could not travel on the icy cobblestones. The weather on Thursday was much better being good and cold.

weather on Thursday was much better being good and cold.

The cattle trade opened up Wednes-day with all grades bringing steady last week's prices, but at the close they were dull and a large number went over unsold and on Thursday the general market was big 10@15c lower. On account of the bad day

went over unsold and on Thursday the general market was big 10@15c lower. On account of the bad day Wednesday cattle looked very rough and the general quality was not so good. Very few countrymen were on hand for stockers, about everything going to the butchers. Milch cows held steady, the best selling at \$85. The general close was dull as follows: Best heavy steers \$7@7.50; best handy weight butcher steers \$6.50@7; mixed steers and heifers \$6.60.60; light butchers \$4.75@5.40; best cows \$5.50@6; butcher cows \$4.50@5; common cows \$3.75@4; canners \$2.75@3.25; best heavy bulls \$5.50@5.85; bologna bulls \$5.65.25; stock bulls \$4.50@5; feeders \$6@7; stockers \$5@6; milkers and springers \$40@85.

Roe Com. Co. sold Sullivan P. Co. 2 bulls av 1205 at \$5.65, 2 steers av 1120 at \$7.90; to Morris 1 cow wgh 860 at \$3.75, 1 do wgh 800 at \$3.50; to Hammond, S. & Co. 4 do av 925 at \$4.30, 1 do wgh 1050 at \$5, 5 do av 1168 at \$5.60; to Sullivan P. Co. 1 do wgh 1000 at \$4.50, 2 do av 1000 at \$5.50, 7 butchers av 877 at \$6.25, 1 cow wgh 880 at \$5, 6 butchers av 903 at \$6.25, 2 cows av 1210 at \$5.50, 5 steers av 800 at \$6.25; to Bresnahan 21 butchers av 927 at \$5.75; to Fineman 2 cows av 940 at \$5.

Haley & M. sold Thompson Bros. 2 steers av 1105 at \$7.40, 2 heifers av 855 at \$6, 1 bull wgh 1190 at \$5.40, 11 cows av 1030 at \$5.40, 10 do av 1184 at \$5.90, 2 steers av 1215 at \$7.40, 2 heifers av 855 at \$6, 1 bull wgh 1190 at \$6; to Bray 1 cow wgh 840 at \$5.50, 2 do av 1000 at \$5.50, 3 heifers av 670 at \$6; to Hibbard 2 bulls av 780 at \$5.60, 1 do wgh 1260 at \$5.50, 3 heifers av 670 at \$6; to Hibbard 2 bulls av 780 at \$5.60, 2 steers av 785 at \$6, 2 bull wgh 1190 at \$6; to Bray 1 cow wgh 840 at \$3.50, 2 do av 1000 at \$4.40; to Thompson Bros. 1 steer wgh 600 at \$6; to Bray 2 cows av 940 at \$6.55; to Bray 9 cows av 1400 at \$4.40; to Thompson Bros. 1 steer wgh 600 at \$6.55; to Bray 2 cows av 1000 at \$4.40; to Thompson Bros. 1 steer wgh 600 at \$5.50; to Bray 2 cows av 1600 at \$6.50; to Bray 9 cows av 180 at \$5.60; to Costello 4 steers av

Veal Calves.
Receipts 663. The veal calf trade was active and a few choice brought \$11.59@11.75; bulk of sales for good \$10.50@11, and medium and common \$7.6.10

#7@10.

Haley & M. sold Sullivan P. Co. 4
av 180 at \$11, 2 av 140 at \$11, 3 av
160 at \$9.50, 15 av 150 at \$11.

Reason & S. sold Thompson Bros. 2
av 180 at \$11.50.

Sheep and Lambs.

Receipts 4880. The sheep and lamb
trade was active and as high as \$10.50
was paid for good lambs and \$6.50@
6.75 for prime sheep. This commodity
is very high and prospects look higher.
The close was strong as follows: Best
lambs \$10@10.50; fair do \$9.25@9.75;
light to common lambs \$8.25@9; yearlings \$8.50@9; fair to good sheep \$6@

lings \$8.50@9; fair to good sheep \$6@ 6.75; culls and common \$3.50@5. Sandel, S., B. & G. sold Sullivan P. Co. 4 lambs av 85 at \$10, 37 do av 45

Co. 4 lambs av 85 at \$10, 37 do av 45 at \$9.50, 46 do av 60 at \$9.25, 20 do av 60 at \$9.25, 20 do av 60 at \$9, 10 do av 52 at \$8.

Haley & M. sold Sullivan P. Co. 16 sheep av 80 at \$4.50; to Parker, W. & Co. 8 do av 85 at \$4.50, 44 lambs av 80 at \$10.25; to Nagle P. Co. 31 do av 80 at \$9.90, 14 do av 80 at \$9.75, 3 sheep av 150 at \$5.50, 9 do av 95 at \$5.25, 49 lambs av 70 at \$9.85.

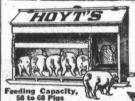
Roe Com. Co. sold Sullivan P. Co. 2 sheep av 135 at \$5, 39 lambs av 70 at \$10.

Reason & S. sold Nagle P. Co. 7 lambs av 75 at \$9.75, 56 do av 65 at \$9.85, 6 sheep av 85 at \$5.

Hogs.

Receipts 14,251. In the hog department the trade was active and 15@20c higher than on Wednesday. Pigs \$6.75 and yorkers and heavy \$7.10@7.25.





#### Self-Feeder for Pigs and Lambs

Earns its cost first month--Sold on 30 Days' trial
"Self-fed pigs gain faster" says Iowa Experiment Station. This new selffeeder meets all their requirements. Endorsed by breeders. Saves feed and
labor. Six separate bins for salt, corn, tankage, middlings, oil meal, etc. Water proof.
Keeps feed dry and swoot. Strong, handsome, well built. Has adjustable trough
made of 2 in. lumber. Silding bar to keep out larger pigs. Automatic sgitator.

MAKE MORE MONEY IN HOGS THIS YEAR
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Farms For Sale -- Continued on Page 83.



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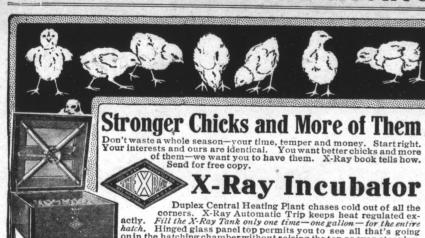
The greatest of all live stock conditioners. What is more, I will send that with my tonic you will actually get more milk from your cows, that you will after a seeding the stock Tonic with the distinct understanding that it is to be used for two months at my risk—that if at the end of the two months feeding the Stock Tonic has not been entirely satisfactory—no charge is to be made.

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I have made and sold this tonic for over thirty vey cars. Over a million of the please send me at once one of your beautiful \$5.00 Wood host stock raisers in America are feeding it every day to their live stock—many of them have for over thirty years—I have thousands upon thousands of the fines thad of letters from all parts of the country telling me of the wonderful results from feeding this Stock Tonic. I agree to feed the tonic for two months, at my risk—that I take all the risk in this stock raisers in America are feeding it every day to their live stock—many of them have for over thirty years—I have thousands upon thousands of the fines thad of letters from all parts of the country telling me of the wonderful results from feeding this Stock Tonic. I agree to feed the tonic for two months, and if it does what you claim, I will pay you for it at the raise of only \$2.00 per month until I have you for the the charge and will owe you nothing. You are also to ship merror of the producer—to offset all freight charges on the shipment, It is unlessed than \$5.00 to \$6.00 anywhere. It's a blanket—84 x 90 inches—never sold for less than \$5.00 to \$6.00 anywhere. It's a blanket of the min the pink of condition. The last of the shipment, It is unlessed to the min the pink of condition. The last of the stock to be mine—Absolutely Free—whether I pay for the Stock Tonic or not.

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Conkey's Poultry Tonic turns listless, run down, lazy happy winter layers. Try it. CONKEY CO. CLEVELAND.

POULTRY.

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

Barred Plymounth ROCK COCKERELS, large, farm raised from prize winning flock. \$3 each, two for \$5. J. A. BARNUM, Union City, Mich.

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Bird Lawn Farm, A few exhibition Buff RockHens for Cockerels \$1.50 to \$3. Blue Orpington Cockerels \$1.50 to \$3. Blue Orpington Cockerels \$3 to \$10 each. Our Buff Rocks won thres firsts and one fifth Chicago 1914 on four entries. Bird Lawn Farm, Lawrence, Mich.

Bred to Lay: R.C. Rhode Island Reds. S. C. White Leghorns, a few breeding cockerels at \$1. Eggs and stock in season. J. C. Greene, St. Johns. Mich.

Eggs for hatching—From pure bred White Plymouth Rocks. Pekin and White runnner ducks. White African guineas. H. V. Hostetler, R. I, St. Johns. Mich.

FINE farm raised White Rock cocks and cockereis \$2, \$3, two for \$5, and \$5. One fine bird from Fishel yards reduced to \$5. G.B. Hoopingarner, R.1, Bronson, Mich.

For Sale—White Rock Cockerels 9 lbs. \$3.00, 8 lbs. \$2.50. Fine white birds. Order early.

Mrs. Elsie M. Robinson. Petersburg, Michigan

FOWLER'S BUFF ROCKS. Cockerels \$2 to \$3. White Holland Turkey Toms \$5; hens \$3. R. B. FOWLER, Hartford, Michigan,

Ferris Leghorns—200 Egg Strain. One customer's flock averaged 102 eggs in six winter mos., another 181 eggs in 10 mos., another 199 eggs in 12 mos. You can do as well. Eggs, chicks, breeding stock from hens with records up to 261 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. Is years square dealing-thousands of pleased customers. FERRIS LEGHORN FARM, 934 Union, GRAND RAPIDS, MICH.

Golden Wyandotte Cocks and Cockerels, also a few F. W. ALEXANDER. Vassar, Michigan.

PINE CREST WHITE ORPINGTONS, why wait un-I till Spring to purchase stock, by buying now, you get the benefit of reduced rates and get eggs all winter, Mrs Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Throughbred Rose Comb Black Minorca Cockerels \$1,50 each. Hens and pullets \$1.00 each. Good stock. E. D. Van Natter, Standish, R. 3, Mich.

Rose Comb Brown Leghorn Cockerels From Mad. Sq. and Mich. and Ohio State Fair win-ners \$1.50 each. CLAUDIA BETTS, Hillsdale, Mich.

 $\mathbf{R}_{ullet}$  and S. C. R. I. Red Cockerels, W. Runner Ducks, Eggs in season. Fine stock. Prices reasonable. O. E. Hawley, Ludington, Mich.

HODE ISLAND REDS and PLYMOU TH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 95 lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, \$ to 38 lbs. according to age \$6 to \$25, 10 eggs \$3. A. E. Crampton, Vassar, Mich

Rhode Island Reds large vigorous cockerels, both R. C. and S. C. \$2.00 each or 3 for \$5.00.

Mrs. F. J. Napier, Wixom, Michigan

Silver Golden and White Wyandottes. First prize sonable. Send for circular. C. W. Browning. R. 2, Portland, Mich.

S. C. White Leghorn Cockerels. Grand Birds—Utility
S. or exhibition. We won State Fair this year. Hatching Eggs, \$1.50 and \$2.50 per setting, \$8 per 100. Wishbone Leghorn Farm, A. B. & J. M. Wilsey, Ann Arbor. Mich.

White Holland Turkeys. Fine Large Healthy Stock, Toms \$6.00; Hens \$5.00.
Alden Whitcomb, Byron Center, Michigan.

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

Mammoth Bronze Turkeys Toms \$6: Hens \$4. Fawnand White Indian Runner,

CLOSING Out my White Indian Runner Ducks—V.R. Fishel strain. These ducks cost me \$5 apiece, Offering while they last, Drakes \$3: Ducks \$2. A rare bargain. RIVERVIEW FARM, R. 2, Vassar, Mich.

Pekin and Rouen Drakes for \$5.00, each or 3 for \$5.00, Sheridan Poultry Yards. Sheridan, Michigan.

DOGS

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

H. C. LYTLE, Fredericksburg, Ohio

HOUNDS FOR HUNTING—Fox, Coon and Rabbits, all ages. Send 2 cent stamp.
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WE PAY \$80 A MONTH SALARY and furnish ric and all expenses to introduce our guaranteed poultry and stock powders.
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#### Specializing-Its Value In Poultry Work

"Will I or will I not make more money of his business. by confining my poultry work to some specialized part of the business?" On the average farm there are often several breeds of chickens, a few ducks eas and a small flock of turkeys. Such a farmer is running a general poultry business and while it may be very profitable while conducted on a small scale he cannot develop any of his various poultry lines without infringing on the others. Specialization will' mean that this farmer must decide on which of the lines he likes best and then confine practically all of his energies along that line.

The Egg Specialists.

A farmer neighbor of mine states that he believes in the old saying, "The hen that lays is the hen that pays." He is keeping a nice flock of White Leghorns and ships all of his large white eggs to New York City where, during the past year, commission men have paid him from 38 to 62 cents per dozen. He is an "egg specialist" and finds that it pays. Another farmer in this section is special. izing in Barred Rocks and he has a nice strain that produce meat as well as eggs. He divides his specializing between high quality eggs and a large flock of broilers and he makes them

I do not believe that any farmer can make poultry very profitable unless he combined with ducks, geese and turkeys, may be profitable but they cannot be developed into a profitable business as well as one breed plus good ods. With one breed of hens a reputation for fine stock can be obtained and this makes the spring eggs especially profitable. The birds sold for breeders are disposed of at a price much higher than can be obtained on any other market. The farmer with a little of everything does not usually keep a good set of books concerning his business and usually the returns come in with such regularity that at been gained.

Advantages of One Breed.

as far as that breed is concerned.

The average farmer cannot be a chicken fancier as other duties take up too much of his time but he can build up a flock of 400 to 600 good birds of one breed and make more make if the farm had been stocked and loss in poultry work. flock often pays well but where the fed beef scrap laid 1.802 eggs. the average farmer who desires to be-

HE farmer who is raising poul- come a first-class poultry breeder, can try on a commercial scale, or be more sure of success if he selects who anticipates developing that one breed of one kind of fowl and reature of his business, has a decision then works every day to learn all he to make on the following question: can about that one specialized feature R. G. KIRBY.

#### FROZEN COMBS.

A method that may be used on valuand geese, possibly a half dozen guin- able birds before a cold night to prevent freezing is to give the comb and wattles a liberal coating of vaseline. We should prepare for cold spells by having birds in comfortable quarters. However, with the best of care the tall combs of the males will now and then get touched with frost.

> Occasionally a male bird is afraid of the other roosters and when evening comes he will roost outside rather than go in a comfortable home with the other birds. He will wake up in the morning without damage to anything except his head ornaments. He may get his feet frozen but this never happens until long after his comb and wattles have succumbed.

> We have noticed the power of cold resistance seems stronger with the females of the large combed varieties than with the cocks or cockerels. One trouble with the males when they must be shut up on account of bad weather, they do little scratching no matter how well the floor is littered. They sit humped up on the roost while the hens and pullets are singing and scratching.

There is no cure after the comb is frozen hard. If found in time and not specializes to a certain extent. The too badly frozen, comb and wattles miscellaneous flock of several breeds, may be saved by thawing out slowly with applications of ice water or snow and rubbing well with clear iodine, followed with olive oil and camphor twice a day for several days; then apbook-keeping and careful selling meth. ply vaseline once a day for a week. This treatment will not only save the frosted sections but will save the fowl much suffering.

It is hard for a fancier to sell a frosted bird. In bad cases their vitality is impaired. Valuable birds often die from frozen combs when neglected. Hens with badly frozen combs will do very little for a long time toward filling the egg basket.

The tall combs of the Single Comb the end of the year nothing much has Leghorns we find freeze quickly on a cold windy day if they do not have a comfortable place to stay and exercise, The breeders of fine poultry who but the Rose Comb Leghorn hen's make good" seem to make their rep- combs never freeze, no matter how utations on their work with one breed. much freedom they have during the There seems to be a tendency to wish worst weather, or how cold the house to buy breeding stock of the man with they roost in at night, but the males one breed. Naturally it is supposed of this variety, with their massive that if he keeps only one kind of combs, have to be well housed a . . ht fowls, he ought to know his business and kept out of cold winds during the day to save their headgear.

Indiana. FRANCES WOOD.

#### DO YOUR HENS LAY?

Milk or meat in the ration may money from them than he could ever make all the difference between profit with many kinds of fowls. On many know from tests and from the experifarms turkeys, ducks, geese and guin- ence of poultrymen everywhere. We eas can be raised with little expense got only 945 eggs from a pen of hens and they help out with the home meat that ate no animal food, while anothbill as well as bring in quite a little er pen of hens, no better in any way, money from the local market. Such a but fed sour milk, laid 1,783. Those chicken business is to be placed on a this is a higher record than either of real business-like basis it is just as the others, the sour milk is so much necessary for the farmer to specialize cheaper and easier to get on most in one breed of poultry as it is for farms that we recommend it most him to expend all his energy on one highly. At 20 cents a dozen, the eggs breed of cattle. It is almost impossi- from the hens fed sour milk brought ble to attain the best success on one \$29.71 and those from the hens fed farm if all kinds of pure-bred stock beef scrap, \$30.03. The difference are raised on a large scale. We sel- wouldn't begin to pay for the extra dom hear of one man being noted as cost and trouble of beef scrap. The a breeder of the finest sheep, hogs, big thing to remember is that the hens horses and cattle. He usually spe- fed no animal food brought little more cializes in one line and makes his rep- than half as much egg money. Theory utation in that way. In the same way and experience both say, "Feed the it looks to me as if the poultryman or laying hen sour milk as part of ration."

Corn, four parts; wheat, two parts;

bran middlings, one part; corn meal, one part. Sour milk separately. Give 100 hens two and a half gallons of milk and from 19 to 25 pounds of other food a day.

Mo. Agril. Col. H. L. KEMPSTER.

#### POULTRY PROGRESS.

When nature planned the workings of this earth she did it for Edenic or natural conditions and for such conditions nature cannot be improved upon. But man's ambition has caused him to improve things to suit himself and therefore nature's ways of doing things are in most cases antiquated. They are too slow and uncertain for the present day.

In the poultry business man has made great studies for he has developed the wild fowl into one of great utility as well as beauty. He has developed the egg-laying ability, which primarily was intended for the reproduction of its kind, so that now the hen is a veritable egg machine. In doing this he made the hen of commercial importance. The poultry industry resulted but it did not make any great strides until the regulation of the raising of chicks was brought about.

The raising of chicks by the natural hen methods is slow and uncertain and can be done only at certain times of the year. The incubator and brooder make possible the raising of any number of chicks, at most any time of the year, with convenience and economy. In other words, these two things have given man much greater control over the raising of chicks than he ever had before, and has given him the essentials by which he can develop the industry in keeping with the growing demands upon it.

At present the demand for good poultry products is greater than the supply, and with our rapidly increasing population the increase in demand will be faster than the increase in supply. This makes all the more necessary the use of all methods of economy, speed and convenience in the handling of the business.

It is true that many do not use many of the modern methods, but this is due to the fact that they do not realize the value of these methods or the importance of the poultry industry which is mainly constituted of farm flocks like theirs. The time is rapidly coming when the majority of poultry keepers will realize this and will see the profitableness of incubators, brooders, pure-bred poultry, etc

Each line of activity has its invention which enabled it to make great advances. For cotton, the gin did this; for the grains, the harvester; for commerce, the steam locomotive; for business, the telephone and telegraph, and for the poultry industry the incubator and brooder are doing this. The hen method has no more advantages than the stage coach, the scythe and cradle or the messenger on horseback.

#### POULTRY NOTES.

Rheumatism and colds may be caused by dampness and chilling winds reaching the birds. It is not necessary that the winter house should be overwarm but it must be protected from cold draughts. In-breeding tends to enlarge upon any taint of disease that may be in the flock. Be sure to change the male bird regularly.

Old runs that have been used many years often become tainted and full of disease germs. The hens should have new ground every year if possible. Where it can be done the yards may be planted every other year and made to produce green feed for the poultry.

Chickens should be marked before they are full-grown, so one can be certain as to the age of his chickens in selling market stock. A small belt punch makes a good marker. With a belt-punch the chickens are marked by cutting a hole in the web between the toes.—C. H. Chesley.

For \$2.00 you can build the simplest, most efficient, easiest to operate and very best out-sprouter ever constructed. A boy can make one in an evening with no tools but a saw and hammer. Cost of operation for a 40-hen size less than 7c a month. There are thousands in successful operation. Plans with plain directions for building, 25c postpaid.

I. PUTNAM, Route 111 KLMIRA, N. Y. Chickens should be marked before



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raises the highest percentage—how you can make the most
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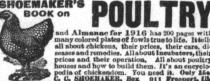


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the Heat-Check between chimney and heater? It does the work of two eyes and two hands — busy all the time, and makes an incubator hatch eggs the same as hens do it. Costs \$1.00 each. Attach it yourself. Full size illustrations. Send postal for them at once.
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#### Tells why chicks die

E. J. Reefer, the poultry expert, 4381 Farmer Bldg. Kansas City, Mo., is giving away free a valuable book entitled. White Diarrhoea and How to Cure it. This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch Vall poultry raisers about certainly write Mr. Reefer for one of those valuable FREE books.

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THE HARPSTER COMMISSION CO., Union Stock Yards, Toledo, O., Sell live stock on commission, get highest prices and best fills. Try them. Daily market, force of six looks after your interest. Financially backed by over \$1,000,000.

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Kentuckys Best Natural Leaf Tobacco by parcel pos \$1, 10 lbs. \$2. State if you want chewing or smoking. Special prices on larger quantities.
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188 Acre stock farm on electric line west of Ann Arbor. Running water, best of clay and sandy loam soil, clay sub-soil, 25 acres timber. Good buildings, etc; \$100 per acre, \$5,500 ceash required. 160 acres near Salem, best of soil, good buildings and fences near Salem, best of soil, good buildings and fences only \$12500: \$4500 cash. 80 acre hardwood-land in Montmorency County 2 miles from railroad, Only \$1600: \$300 down. GILMORE & CHAVENELLE, 412 Hammond Bidg., Detroit, Michigan.

(NOD farm, 126 acres. All inclosed mostly improved. Big base, where the barn and other building for complete steek farm. Would like to hear from a good man with from \$1,000 to \$1,500 cash to puchase some good beifers and cows to start in with. Will divide the profits with good party. Do not answer unless you mean business. E. E. Lockwood, Brutus, (Emmet Co.) Mich.

Farm Wanted: 20 to 30 Acres Within 50 miles of Detroit. ROSS LAND CO., L. Johns, Manages Farm Department, 1004 Penobscot Building.

FOR SALE CHOICE FARM OF 120 ACRES, near Detroit, Michigan. 80 per acre. 160 acre farm near McBain \$40 per acre. 8) acre farm near Falmouth, \$20 per acre. HENRY MLEYNEK, McBain, Michigan.

Virginia Farms and Homes. FREE CATALOGUE OF SPLENDID BARGAINS. R. B. CHAFFIN & Co., Inc., Richmond, Va.

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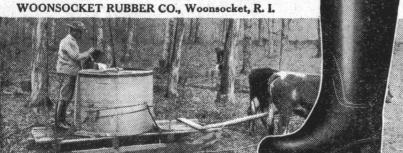
80 Acre Farm for Sale, partially improved, terms. Address I. L. Hubbell, Belding, Mich.

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

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#### Michigan Farmer's Club list.

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

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

Write for prices on publications not listed.

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

We send sample copies of the Michigan Farmer only.

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

| NAME OF PUBLICATION.  | See e  | above   |
|---|--|---|
| Daily, (6 a Week) on R. F. D. only Free Press, Detroit. Journal, Detroit. Times, Detroit. Herald, Grand Rapids, Mich. News, Grand Rapids. Press, Grand Rapids. Courier-Herald, Saginaw, Mich. News, Saginaw.  | . 2 50<br>. 2 50<br>. 2 50<br>. 2 50                               | \$ 2 50<br>2 70<br>2 00<br>2 50<br>2 2 50<br>2 50 |
| News, Saginaw Tribune, Bay Oity, Mich Blade, Toledo. Ohio News-Bee, Toledo. Ohio State Journal, Lansing. Mich Tri Weekly Newspapers   | 2 00   | 2 05<br>2 05<br>2 00  |
| World, N. Y., City  Semi Weekly Newspapers  Journal, Detroit, Mich  | 1  | 1   |
| Weekly Newspapers Blade, Toledo, Ohio Commoner, Lincoln, Neb Enquirer, Cincinnati, O  | 1 00<br>1 00<br>1 00   | 1 05  |
| Cattle, Sheep, Swine, Poultry, etc<br>American Bee Journal, Hamilton, Ill. (w<br>American Poultry Journal, Chicago, (m<br>American Poultry Advocate, Syracuse<br>American Sheep Breeder, Chicago (m).<br>American Swineherd, Chicago, (m).<br>Breeders' Gazette, Chicago, (w)<br>Green's Fruit Grower, Rochester, (m.).<br>Hoard's Dairyman, Fort Atkinson, Wis<br>Jersey Bulletin, Indianapolis, Ind. (w<br>Kimball's Dairy Farmer, Waterloo, Ia | 50<br>1 00<br>50<br>1 00<br>50<br>1 00<br>1 00                     | 1 05<br>1 20<br>75<br>1 35<br>1 45<br>70<br>1 20<br>1 35  |
| Poultry Keeper, Quincy, Ill. (m)  | 50<br>50<br>50   | 70<br>75<br>75  |
| Michigan Poultry Breeder (mo)   | <b>5</b> 0   | 80<br>70  |
| opular Magzines.  Everybodys Magazine, N. Y. City. (m)  Etude, Philadelphia, Pa. (m)  MoUres, Magazine, N. Y. City. (m)  Musician, Boston, Mass. (m)  National Sportsman Boston, Mass. (m)  People's Home Journal, N. Y. City. (m)  Red Book Magazine, Chicago, Ili. (m)  Review of Reviews, N. Y. City. (m)  | 1 50<br>1 50<br>1 00<br>1 50<br>1 50<br>1 50<br>25<br>1 50<br>3 00 | 1 60<br>1 60<br>1 50<br>1 55<br>1 15<br>85<br>65<br>1 56<br>3 00  |
| Delineator, N. Y. City. (m).  Designer, N. Y. City. (m).  Housewife, N. Y. City (m).  Ladies World, New York City (m).  | 1 50<br>75<br>50<br>1 00   | 1 60<br>1 05<br>80<br>1 25  |
| Mother's Mag. Elgin, 111. (m). Piotorial Review N.Y. Oity. (m) Today's Magazine and Free Pattern (m). Woman's Home Companion, N.Y. Oity. m Womans World, Ohioago. (m).  | 1 50<br>1 50<br>50<br>1 50<br>35                                   | 1 55<br>1 50<br>70<br>1 60<br>60  |
| Religious and Juvenile. American Boy, Detroit Mich. (m). Boys Magazine, Smethport, Pa (m) Little Folks, Salem, Mass. (m). Young People's Weekly, El gin, Ill. (w.) Youth Companion, Boston, Mass  | 1 00<br>1 00<br>1 00<br>75<br>2 00                                 | 1 50<br>75<br>76<br>90<br>2 25  |

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Write, OZMENT, 17 F. St. Louis.

#### Farmers' Clubs

Associational Topic for January .-'What can our Club do to help the State Association the coming year?"

#### CLUB DISCUSSIONS.

Completes Decade.—The Looking Glass Valley Farmers' Club has opened its eleventh year with two fine meetings, one in November with the president, W. King Lee, and one in December with the vice-president, A. W. Oliver. Miss Hall, a speaker from the Battle Creek Sanitarium, gave a most interesting and instructive address at the first meeting, and at the dress at the first meeting, and at the December meeting R. A. Smith, assistant state geologist, of Lansing, instructed the members as to the origin, composition and use of the common rocks found in our state. Both speakers were full of their subject and we hope to have more along these lines in the future. Henry Wesseler represented our Club at the state association and brought back a fine report, also the encouraging fact that we were doing as well as the other Clubs. Good music is furnished at the meetings and summinous dinners that are ings and sumptuous dinners that are the delight and danger of all. The Club is backing its fifth "Lecture Course," costing \$275. We do a little co-operative buying, and are ready to co-operate in any good community work. Would be pleased to exchange programs and ideas with other Clubs of Michigan Bel Maior Beauties.

of Michigan.—Bel Maier, Reporter.

The December Meeting of the Summit Township Farmers' Club, of Jackson county, was held at the home of Mr. and Mrs. Blake, of Vandercook Road. Roll call was answered by each Road. Roll call was answered by each member participating in a "Grab-bag Game." After a sumptuous Christmas dinner the meeting was called to order by President J. A. Wright. Election of officers for the ensuing year took place, resulting as follows: President, Mr. Mount; vice-president, Mr. Coleman; secretary, Mrs. Vredenburg; treasurer Mrs. Greenwood: chaplen treasurer, Mrs. Greenwood; chaplain, Mr. Wright; financial secretary, Mr. Ellyrow; pianist, Miss McGraw; corresponding secretary, Mrs. Wright. The new president appointed the necessary committees and after further husiness the Club was entertiared by essary committees and after further business the Club was entertained by music by Miss Aleta Blake, and Mr. H. N. Wills, an invited guest, gave several readings which were highly enjoyed. The January meeting will be held at the home of Mr. and Mrs. Bingham Vandercook Road — Reporter

held at the home of Mr. and Mrs. Bingham, Vandercook Road.—Reporter.

Elect New Officers.—Washington Center Farmers' Club held their December meeting at "Riverside," the home of Mr. and Mrs. C. N. Curren. Called to order by President Crowel. Minutes were read and approved and considerable miscellaneous business disposed of before adjournment for dinner. The social hour is one of the most enjoyable features of the Club, as well as the excellent dinner which is always served. Roll call was reas well as the excellent dinner which is always served. Roll call was responded to by telling what a home ought to have. After a select reading, the delegates gave a very interesting report of the State Association of Farmers' Clubs held in Lansing on December 7-8. Club then elected officers for the ensuing year as follows: President, S. Z. Crowel; vice-president, Mrs. Frank Cook; recording secretary, Mrs. S. N. French; treasurer. Mrs. Mrs. S. N. French; treasurer, Mrs. Frank Heinlen; corresponding secretary and organist, Mrs. B. S. Gilman. Next meeting will be held at "Elm wood," the home of Mr. and Mrs. S. N. French French.

Cut Out Smoker.—The December neeting of the Indianfields Farmers' Club was held at the home of Mr. and Mrs. Amos Andrews, Jr. After the so-Mrs. David Andrews, the meeting was called to order by the president, Wm. the short winter days, all favoring having dinner served at 12 o'clock, standard time, meeting to be called to order at 1:30, cutting out the hour for smoking by the men. The next meeting will be gentlemen's day and it is expected that a fine time will be is expected that a fine time will be enjoyed by all present. Club adjourned to meet at the home of Mr. and Mrs. Albert Arnold, January 20.

### Grange.

#### STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings. Overseer—C. H. Bramble, Tecumseh. Lecturer—Dora H. Stockman, Lan-

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.

#### ANNIVERSARY POMONA MEET-INGS

Seventy-five Pomona Grange Meetings will be held in the state of Michigan in January in the week beginning the seventh, and one of the number will be held in Ypsilanti at the Masonic Temple on the nineteenth, with A. E. Illenden, of Lenawee County Pomona Grange as state speaker.

The meetings have been arranged by State Master John C. Ketcham, of Hastings, with a view of celebrating the fiftieth anniversary of the founding of the order in the United States and of giving an added inspiration to

and of giving an added inspiration to Grange work. There will be two sessions, and a banquet at noon. All Granges in the county are welcome. The meeting which was to have been held January 11 has been cancelled.

held January 11 has been cancelled.

—A. C. A.

Wayne Pomona meeting will be held with Harmony Grange at Romulus on Thursday, January 20.

A Special Meeting of Charlevoix County Pomona Grange will be held with Pine Lake Grange, Friday, January 21. This will be one of the many special Pomona meetings simultaneously held throughout the state by Grange leaders to promote the welfare Grange leaders to promote the welfare of the Patrons of Husbandry and stimof the Patrons of Husbandry and stimulate the interest in the effort to increase the membership. W. M. Coon, of Roscommon, one of the state speakers, will have charge of the program. His topics will be: First, "Survey of the Field." Second, "Increasing our Trade Contract." Third, "The New Grange Movement for 1916." Fourth, "What can we do to Promote Subordinate Grange Growth During 1916?" The topics the speaker will dwell on are of vital interest to all Grangers, and a good attendance is desired. Mr. and a good attendance is desired. Mr. Coon is a very capable speaker, and Grangers will be well repaid for their attendance. Pine Lake is able to take care of all who attend and extends a welcome.

Monroe County Pomona Grange will meet with Azalia Grange, Friday, January 21, 1916, at 10 o'clock. Mr. A. E. Illenden, of Adrian, will be the speaker. This meeting is part of the statewide campaign to be carried out the week of January 17-22, in the state of Michigan Michigan.

#### AMONG THE LIVE GRANGES.

Peninsula Grange started the New Peninsula Grange started the New Year O. K. by having a feast in the Grange hall at noon on New Year's Day and following the same up with an exhaustive discussion regarding methods for marketing farm produce. A number of the officers of the Grand Traverse Fruit & Produce Exchange were present and the marketing operations of that organization for the past year were considered at length. A number of fruit growers not members of the Grange were present to take part in the discussion. The general feeling seemed to be that, considering

the season, the exchange had done well, very well.

A Grange Fair will be held at the Odd Fellows' Hall, in Coopersville, on January 14-15. This event, which is to be an annual one, was organized by the Western Pomona Grange with Ottawa County Granges and the merchants of Coopersville co-operating. Competition for premiums is onen onyear; secretary, Mrs. Harton Moore; organist, Edith Andrews; chorister Mrs. John Miller. S. G. Ross being delegate to the State Association of Farmers' Clubs at Lansing, made a fine report. The members enjoyed the Xmas tree, Ellenor Van Buren acting as Santa Claus, remembering all with a present. Mrs. J. B. Delling called a short meeting of the ladies in recent the short with the mers of Coopersville co-operating. Competition for premiums is open only to Grange members who have contributed to the support of the fair, excepting three departments in which any boy or girl can compete. One of the support of the fair, excepting three departments in which any boy or girl can compete. One of the support of th acre and the best ten ears grown by a boy, the best of various farm crops, fruit and canned goods, exhibits of grade school work, collections of grains and seeds, baked goods, girls' baked goods, girls' hand sewing, and hand sewing. A silver loving cup will be given for the best ten ears of corn and a hand-testing outfit for the best dairy herd record for one year. In the boys' corn contests the first premiums will be trips to M. A. C. In the boys' and girls' contests only those under 18 are allowed to compete. The der 18 are allowed to compete. The public is invited to the fair and the admission is free.

#### HE BEST LINIMENT

#### Gombault's austic Balsam IT HAS NO EQUAL

For —It to penetrating, soothing and healing, and for all the Sores, Bruises, other wounds, Felons Exterior Cancers, Boil Human Bunions
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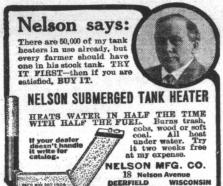
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Lincoln, Neb. Dept. 15 Lincoln, Factories: Lansing, Mich.; E. St. Lo





HOGS BY THE CARLOAD.

(Continued from page 67). sale as a total, to save time and space. Mill feeds and shelled corn were weighed, ear corn measured, and hay and pasture estimated, also milk. The accounts are approximate, beginning President, John Hull, Dimondale; with stock on hand, including breeding secretary, Comfort A. Tyler, Coldaccounts are approximate, beginning stock, and closing with same.

Debit. Nov., 1909. .....\$ 152.00 

 Pigs
 \$ 152.00

 One brood sow
 20.00

 Mill feed
 321.80

 Rye, 110 bushels
 79.20

 Barley, 8,100 lbs..... Ear corn, 40 bushels.... Total .....\$ 784.10 Profit ..... 378.19 \$1,162.29

ses charged, to show about the expense of shipping live stock.

Debit. Stock on hand Nov., 1914....\$ 502.50 Wheat middlings, 10,570 lbs.. 166.89 Cereal feed from factory, 194.25 20.70 10.43 Pasture, June grass......

Alfalfa hay, three tons.....

Freight to Buffalo ......

Feed on road and at Buffalo...... 100.00 36.00 14.00 

\$2,303.74 Credit. Two hogs for home use.....\$ Six sold in April...... 85.50 48.00 

The above was somewhat disappointing as I have been selling for five years from \$9.50@9.90, all hogs have sold fully \$1.00 per head lower the

past year than five years previous. Had the market remained steady the above results would have netted about \$200 more.

I have produced all kinds of domestic meat animals and expect to continue while I manage the farm, or as long as they will pay market price for the products of the farm, and use it at home, our soil is producing better each year by so doing. I expect to yet produce 200 pounds of hogs for every acre of land the farm contains (240), and make the farm produce equivalent to all feed they consume. Should hog cholera or some other epidemic overtake us it might put us out of the hog business, as we were put

No person can succeed in producing meat, who does not take an interest in care. It is not all pleasure. We are continually fighting lice and internal money proportionately than are year-parasites, and have so far had good lings and two-year-olds. results, and are willing to assist our fellow farmers in any way we can.

out of sheep feeding.

G. H. FORCE. Lapeer Co.

#### THE LIVE STOCK MEETING.

(Continued from page 66). F. B. Sotham. Election of officers. Discussion of plans for the association for the coming year.

Michigan Merino Sheep Breeders' Association.

President, H. L. Mayo, Nashville; secretary, E. N. Ball, Hamburg. Meeting called to order at 9:00 a.

Michigan Shropshire Sheep Breeders' Association.

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

Meeting called to order at 9:00 a.m., Wednesday, January 19, Room 400. Michigan Hampshire Sheep Breeders'

Association.

Meeting called to order at 9:00 a. m., Wednesday, January 19, Room 113. Michigan Oxford Sheep Breeders' As-

sociation. President, 1. R. Waterbury, Detroit; secretary, B. F. Miller, Flint.
Meeting called to order at 9:00 a.

m., Wednesday, January 19, Room 113. Michigan Sheep Breeders' and Feeders' Association.

President, C. A. Tyler, Coldwater; secretary, W. H. Schantz, Hastings.

The above Sheep Associations combine in a general meeting in Room

Four hogs sold to butcher...\$ 57.59
Forty-one hogs sold to drover 827.70
Two consumed on farm.... 24.00
Stock on hand Nov., 1910... 253.00

As there were not enough in above for carload I sold to drover and butcher. Since I have shipped a car each year, the following will give the full aday. Mutton dinner served by the association to its members at 12:00.

#### Michigan Poland China Breeders' Association.

President, J. C. Butler, Portland; recretary, Robert Martin, Hastings.

Meeting called to order at 10:00 a. m., Thursday, January 20, Room 113.

Michigan Duroc-Jersey Breeders' As-

sociation.

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

Meeting called to order at 10:00 a.
m., Thursday, January 20, Room 110.

Michigan Berkshire Breeders' Association.

President, J. F. Miller, Caledonia; secretary, B. B. Perry, Leslie.
Meeting called to order at 10:00 a. m., Thursday, January 20, Room 405.
Michigan Swine Breeders' Association.
President, W. H. Schantz, Hastings; secretary, Carey U. Edmonds, Hastings

ings Business meeting called to order at 11:00 a. m., Thursday, January 20, Room 400. Adjournment for dinner in

body.

Program at 1:00 p. m., Room 206.

"Control of Hog Cholera," Dr. J. W.
Conaway, University of Missouri;

"Methods of Hog Cholera Eradication
in Branch County," Dr. H. M. Newton,
U. S. D. A.; "Michigan Live Stock Sanitary Laws and their Relation to the
Control of Hog Cholera," H. H. Halladay, President Michigan Live Stock
Sanitary Commission. General discussions. Sanitary Commission. Genera sion, led by Dr. G. W. Dunphy. General discus-

#### LIVE STOCK NEWS.

Experienced stockmen who have fattened cattle for years are reversing their tactics, having lost money in relent years through buying the best class of feeders and feeding them on high-priced feed, and they are now buying the cheaper class of stock cattle. This is the plan of J. G. Imboden, who lives near Danville, Ill., and he has been buying common stock steers on the Kansas City market for feeding purposes. He reports very few cattle being fattened in his locality, stockmen having lost money a year ago. Conditions are widely different from years ago, when the western ranches were full of cattle that could be pur-Experienced stockmen who have fatwere full of cattle that could be pur-chased at low prices for feeding, al-though the ranchmen have at last stopped selling their calves and cows and heifers and have returned to the breeding stock. Restocking the ranges is now going forward, and the west is returning once more to the cattle rais-

Advices from northern lowa are that by the end of January not many cattle will be left there, and even in Nebraska and Kansas stockmen are now roughing their large holdings of cattle through the winter, intending to graze them through the summer. Feeders offered on the Kansas City market were sold recently for \$7.25@7.90 per 100 lbs. Generally, stockmen are not inclined to feed their cattle for very long periods, and short-fed shipments ot market may be expected all through the winter feeding season. Soft corn possesses poor feeding quality, and most stockmen in such districts are disinclined to bring in high-priced to market may be expected all through m., Wednesday, January 19, Room 115. corn belt.



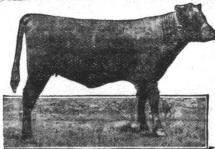
I don't even ask you to risk a penny for postage. I want to prove to you before you pay and at my risk, that Corona Wool Fat is thegreatest healing compound ever used on the farm for all kinds of hoof and skin diseases. Produced from the skin and wool of the sheep, this great natural remedy has no equal as a cure for Hard and Contracted Feet, Mud Fever, Spit Hoofs, Corns. Grease Heel, Thrush, Quarter Crack, Barb Wire Cuts, Galled Shoulders, Sore Teats of Cows, Ulcers, etc. It

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—grows hair over cuts and sores—makes new hoofs.
Often worth hundreds of dollars by saving injured animals from lameness and permanent blemish.

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If you are in need of anextra good bull or a few choice young cows or helfers, we have them for Sale. Our herd is headed by the Grand Champion Black Monarch 3rd. We invite you to come to our Farm and see them. They are bred right and priced right, U. L. Olark, Hunters Creek, Mich. Sidney Smith, Mgr.

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Combine quality and health, the foundation of a perfect Herd.

In the sixteen months we have advertised in The Michigan Farmer, we have sold 17 bulls and 30 females of our own breeding which we consider very satisfactory when most Breeders are complaining of slow sales. But good stock is always in demand when offered at fair prices. It has been impossible to answer all inquiries but we wish to thank all who have written.

At present we have Registerd Bull Calves only for sale.

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

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

FOR SALE A choice lot of Registered Guerns cows, helfers and bulls of May Hose breeing. H. W. WIGMAN, Lansing, Michigan.

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

Guernsey Bull Calves from A. R. dams and whose for service. IG. A. WIGENT, Watervliet, Mich.

For Sale: Registered yearling Guernsey Bull also Bull Calves. Write JOHN EBELS, HOLLAND, MICH. R. No. 10.

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

REGISTERED Guernsey Bulls from A. R. Dams, ready for service, tubercular tested, also Registered Bull calves from A.R. Dams, at Farmers' prices. Byers & Barnes, Coldwater, Mich.

FOR Sale 4 registered Guernsey Bulls 6 to 17 mos. old, Great Grandsons of Starlights Excelsior, 22 A. R. daughters, Grand Dam Arvon's Julia A. R. cow, 572 lb. fat. Also yearling Holstein Bull, a grandson of Colantha Johanna Lad, who has 92 A. R. O. daughters. Geo. W. Reeves, R. 2. Grand Rapids. Mich.

Herefords—3 Bull Calves
EN BROS. PAW PAW, MICH

#### Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a buil that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6½ % fat daughter of Pontiac Aggie Korndyke who has more 30 lb, daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

#### The Two Greatest Bulls KING OF THE PONTIACS

DE KOL 2d's BUTTER BOY 3rd I have young bulls from cows having high official records and Granddaughters of above bulls. Stock

BIGELOW'S HOLSTEIN FARMS,

DAIRY TYPE Plus PRODUCTION Equals Crandall's

#### Holstein Friesian Cattle

y Good young Bulls for sale, Sired by Beauty Walker e Prince 2nd. No. 107658. Dam, Hengerveld DeKol's aghter. Butter 33.62, milk 582.70. Write for Pedigree Frank R. Crandall & Son, Howell, Mich.

HOLSTEIN Bull Calf: Born Nov. 8th. A nice indi-vidual, well grown, about evenly marked. His dam and Sire's dam have A.R.O. records that average Butter 7 days 24.83 lbs. Milk 563 lbs. W.B. READER. Howell, Mich.

\$190 Buys Reg. Holstein heifer 8 mos. old and Reg. Bull 3 mos. old. Not akin. Good breeding. FERD J. LANGE, Sebewaing, Michigan.

Have Reg. Holstein Cows and heifers for sale at close prices.

Wm. MEYER, Fowlerville, Michigan. Fowlerville, Michigan.

### HERD SIRES

#### Maplecrest Korndyke Hengerveld and Finderne Pontiac Johanna Korndyke

The two great Holstein sires at the head of the herd. Maplecrest Korndyke Hengerveld's dam and grand dam each made more than 1200-lbs. of butter in a year, and including the great grand dam each made more than 30-lbs. of butter in 7 days. His sire has sired three daughters that averaged over 1200-lbs.

Finderne Pontiac Johanna Korndyke is the son of the world's champion cow, Finderne Pride Johanna Rue, who gave 28,403-lbs. of milk and made 1470-lbs. of butter in a year He was sired by a brother to the 40-lb. 4 yr. old Mable Segis Korndyke. The dam of the sire is a 30-lb. daughter of Pieterje Hengerveld Count DeKol. This is believed by many to be one of the most productive combinations in Holstein breeding.

I take pride in tendering the services of these animals to the breeders of Michigan who are interested in yearly production. Many people feel it is the yearly work that makes the greatest profit and our effort is along the lines of yearly records. These two herd sires represent the highest culmination ever

yet produced for yearly production.

A few high class helfers in calf to Maplecrest Korndyke Hengerveld, and a few bull calves from dams with records as high as 30-lbs. butter in 7 days, for sale.

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 circula and state your wants. Write, or better come. Swine Dept., Brookwater Farm, Ann Arbor, Mich.

FOR SALE
Three Pure Bred Holstein bull Calves 3 to 6 mo. old,
from A. R. O. dams with records up to 22.51. Prices
yery reasonable. R. B. Cummings, Wixom, Mich.

\$50 gets another 2 mo, old Hazel-let grandson of Maplecrest De Kol Parthenea and Pontiac Maid 30.2 lb. butter 7 days. Dam traces to Pontiac Korndyke twice Pietertje 2nd twice, DeKol 2nd five times. M. L. McLaulin, Redford, Mich.

**Desiland Garms** Registered Holstein youngbulls of choicest breeding at \$30 and up. Ypsilanti, Michigan.

12 Registered Holstein heifers, 3 to 15 mos., \$125 each delivered. 4 are bred. Also bull calves, too cheap to mention price. Ernest A. Black, R. 3, Howard City, Mich

#### Holstein Bulls Ready For Service.

7. Grandsons of Friend Hengerveld DeKol Butter Boy and Pontiae Aggie Korndyke. From high record A. R. O. dams at farmers' prices.

LONG BEACH FARM, Augusta, Michigan. (Kalamazoo Co.)

#### **Choice Holstein Bull Calves** Ready for service, World's Champion Parentage HILLCREST FARM - Kalamazoo, Mich.

I Have Holstein Bulls, that I offer for sale, I can show breeding, records, individuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

#### Espanore Farm, LANSING, MICHIGAN.

Offers for sale five Holstein Bull Calves sired by the great bull Pledge Spofford Calamity Paul and out of good A. R. O. cows. This sire has more daughters with records of over 30 lbs. than any bull in the state. If you are looking for this kind of breeding, write for prices and pedigrees,

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

"TOP NOTCH"
HOLSTEINS.

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

H OLSTEIN-FRIESIAN bargains. High grade heifers \$25 to \$75 each. Reg. heifers \$100 to \$150 each. Reg. Bulls \$40 to \$75 each. B. B. Reavey, Akron, 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 41.5; average record of 50 dams in his pedigree 31.25 in 7 days: average per cent of fat three nearest dams 4.37; of his own dam 4.9. 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 bull calves, the best breeding in the world, grandsons of Grace Fayne 2nd's Homestead, Pontiac Korndyke, King Fayne Segis and Hengerveld De Kol. The dams of these bulls and calves, have large advanced registry records For prices, write Callam Stock Farm, 204 Bearinger Bidg., Saginaw, Mich.

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

Choice Holstein Bulls. All from A.R. O. Dams. Semi-of-tyre, old class toover 1000 lbs. in mature class Breeding: Cross King of the Pontiacs' and the "Demmick blood, "Cherry Creek Stock Farm, Hilliards. Mich. M. E. Parmelee. Proprietor.

Holstein-Friesian Bull calves at reasonable prices. Pontiac Korndyke, Hengerveld DeKol breeding. John A. Rinke, Warren. Mich.

\$75.00

Buys a pure bred Holstein bull calf 11 mos. old, a son of Colantha Johanna Creamelle Lad. One of the good producing sires. GEO. D. CLARKE, Vassar, Mich.

Reg. Holstein Heifer Celves. Dame' records 17 and 18 livered \$130 each. Also, 1 yearling bull 231b, dam same price. DEWEY C. PIERSON. Hadley, Michigan.

Registered Holstein bull3 mos.old, 2 nearest dams average 26 lbs. of butter 649 lbs. of milk in 7 days. Mostly white, excelent individual, \$100 delivered, asfe arrival guaranteed. Write for pedigree and photo. Hobart W. Fay, Mason, Mich.

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

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.

#### The All-Around

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



THE AMERICAN JERSEY CATTLE CLUB 846 West 23d St., N.Y. City

THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Herd headed by Majesty's Won-der 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.

Ferseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emanon, No. 107111, from high producing dams. SMITH & PARKER, Howell, Mich.

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

### Jerseys For Sale Young Cow just Fresh. Waterman & Waterman. Ann Arbor, Mich.

HILLSIDE Farm Jerseys, yearling bulls, solid 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.

23 Registered Tuberculin tested Jersey Cows for sale. Also, young females therman HARMS. Reese, Michigan.

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

Shorthorns For Sale Syoung bulls also females, farm 1/2 mile east of Davis crossing on A. A. R. R. W. B. McQU'LLAN, Howell, 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. BIDWELL SHORTHORNS

Registered Bulls, Cows and heifers, Scotchfor sale, Farm at N. Y. Central Depotalso D. T. & I. R'y. BIDWELL STOCK FARM Box B. Tecumseh, Mich.

Shorthorn and Po'led Durhams for sale. Have white. C. CARLSON, Le Roy, Michigan.

Dual Purpose Shorthorns A few young bulls for sale cows hand milked. M.A. Bray, Okemos, (Inghan Co.) Mich.

Milking Strain of Shorthorns. Young bulls \$100 to \$125 each.
WARNER BROS. Almont, Michigan, MILKING SHORTHORNS. Bull 9 months old \$100,00 DAVIDSON & HALL, Tecumseh, Michigan

For Sale-3 Bull Calves Sired by a 30 lb. bull. 1 from a 28.58 lb. dam. Also 2 heifers 8 and 15 months old, Wm. Griffin, R. No. 5, Howell, Mich.

#### Hous.

Durocs & Victorias due March and April.

of Superba, Defender, Much Col., Orions and others.

A few young boars. M. T. STORY. Lowell, Mich.



G. S. BENJAMIN R. No. 10 Portland, Michigan, Royalton Bred Berkshires—Fine October pigs both Emperor, registered with papers at fair prices. Write to D. F. Valentine, Supt., Temperance, Michigan.

#### SWIGARTDALE BERKSHIRES

Are the kind that win at the Fairs and also produce the litters as all of our show stock are regular breeders. They have the size with the bone to carry them and their breeding is unsurpassed. All the leading families are represented. We have a few choice Spring Boars now crowding the 300 lb. mark, for sale, prices from \$20 up. We are now booking orders for Fall pigs for January delivery. Can furnish choice Trios not akin, for \$45 to \$50. We Guarantee Satisfaction.

Swigartdale Farm, Petersburg, Mich.

Berkshires of best breeding. Special price on two Spring Boars.
D. W.SMITH, Wixom, Michigan.

Berkshires at cut prices. Choicespring boars. Open or bred gilts. Sow farrow in December. Fall pigs, no akin. Chase's Stock Farm, Marlette, Mich. R.1.

Berkshires Have a choice lot ofigilts. I am breed-your wants. A. A. Pattullo, Deckerville, Mich.

DUROC JERSEYS-A few choice spring BOARS (Carey U. Edmonds, Hastings, Mich.

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

Duroc Jerseys Big Type, Heavy Boned Boars ready Volunteer Grand Champion, F.J. Drodt, R.1. Monroe, Mich

DUROC JERSEY BOARS a choice lot of spring boars, not akin. W. C. TAYLOR, Milan, Michigan. Duroc Jerseys Fail and spring pigs either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

J. W. KEENEY, E ie, Mich. Breeder of Duroc local from Monroe or Toledo, Keeney Stop.

DUROC Jersey, Mar. & Sept. pigs either sex sired by a son of Volunteer. And two Holstein bull calves and 2 Holstein cows. E. H. Morris, Monroe, Mich. **DUROC JERSEYS**—A few choice sows bred or spring boars. Wm.W. Kennedy, R. 3, Grass Lake, Mich.

Duroc Jerseys-Choice spring boars and sows of best breeding also 5 high grade Holstein heifers due in Dec. Priced to sell. E. R. Cornell, Howell Mich Duroc Jersey Boars of the growthy, heavy boned type, also a few gilts. Inspection invited. E. D. HEYDENBERK, Wayland, Mich.

DUROCS of the best of breeding. April farrow, farrow. Price \$2.00 to \$25.00 while they last, H. G. Keesler, R. No. 5., Cassopolis, Mich.

CHESTER WHITES: The long type, prolific kind, either sex. Write your wants. Meadow View Stock Farm, R. 5, Holland, Michigan. Registered Chester White males and females. Reg. Holstein male calves, herdbull and cows. Parham's Pedigree Stock Farm. Bronson, Mich. H AMPSHIRE HOGS-the belted beauties. One year-ling boar and spring pigs, either sex. Write your wants. John W. Snyder, St. Johns, Mich., R. No. 4.

HAMPSHIRE SWINE. The kind that makes such big gains on pasture. Have a few choice full pigs for sale, also one July boar. I have a very choice herd of breeding sows of the best blood lines, headed by a mammoth son of the Great Look Out. Am booking orders now for spring pigs, can furnish pairs and trios not akin. Geo. E. Starr, Grass Lake, Mich.

HAMPSHIRE SWINE. A few choice March and good yearling boars. Yearling and Spring Gilts sold open or booked, to be bred for March on April farrows. Fall pigs single, pairs or trios notakin. Price to sell. Write me your wants. Floyd Meyers, R.9. Decatur. Ind.



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

REGISTERED O. I. C. BOARS & GILTS J. CARL JEWETT, Mason, Mich.

O. I. C's Fine gilt farrow in February, year-ling, bred, sows, price right. A. R. GRAHAM, Flint, Michigan.

0. I. C. Gilts Big Type and second to none in breeding.
Bred to Prince Wildwood, due to farrow Apr. 15-16. 320 each. Reg. Holstein calf (bull)born, Oct.12. Nicely marked, good breeding, price \$30. Jay J. Nefey, Plymouth, Mich.

O. I. C. SWINE Yes, I will pay express charges to your express office on August and September pigs during the month of January, I also have choice gilts bred for April farrow, A. J. Gorden, R. 2, Dorr, Mich. O. I. C. SPRING BOARS of good type and Red Polled bull calves. John Berner and Son, Grand Ledge, Mich.

O. I. C. Sows bred for March and April far-stock. E. B. MILETT, Fowlerville, Michigan.

Breeders' Directory-Continued on page 8 .

### Veterinary.

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

Stocking.—I have a horse whose right hind leg is greatly swollen from hock to fetlock. When not exercised the leg is much worse than if she is walked a little every day. J. B., Peacock, Mich.—Give her 2 drs. of acetate of potash at a dose twice a day and ½ oz. of Fowler's solution at a dose three times a day. She should be well fed, groomed well twice a day and exercised two or three times a day, but not exposed to cold bleak wind storms. Also bandage leg in cotton.

Contagious Abortion.—I have three cows which lost their calves, one a month too early and the other two three months before time. They have been fed silage, bean fodder, cornstalks, bran and dairy food. W. H. B., Morley, Mich.—Give each cow 3 drs. of methylene blue in a gelatine capsule daily for six days, then thoroughly disinfect your stable and a week later repeat the treatment and you will perhaps obtain fairly good results. Spasmodic Colic—Acute Indigestion.

What can be done for a horse that

will perhaps obtain fairly good results.

Spasmodic Colic—Acute Indigestion.

What can be done for a horse that occasionally has spasmodic colic? I would also like to know what caused the death of my neighbor's yearling colt? The colt was very thirsty, he drank a large quantity of water, the colt almost immediately bloated and died in less than an hour. C. E. R., Moore Park, Mich.—It is not always necessary to do much for a horse when they have a mild attack of spasmodic colic; however, it is good practice to give a cathartic of aloes, raw linseed oil or Glauber's salts. If the animal bloats give hyposulphite soda or alcoholic stimulants or give 1 oz. doses of aromatic spirits of ammonia. Your neighbor's colt died of acute indigestion which should have been prevented.

Acute Indigestion.—Have a cow that Acute Indigestion.—Have a cow that was giving ten quarts of milk daily, but suddenly her milk flow ceased, she lost her appetite and was very stiff. We called a Vet. and he thought she had neuritis. F. B., Eckford, Mich.—Give your cow 2 drs. sodium salicylate at a dose three times a day, and if her bowels are inactive give her epsom salts as a cathartic.

Vertigo.—I have a steer calf nine months ofd which staggers and falls down occasionally. His appetite is good and most of the time he appears well, before a sick spell he appears drowsy. J. L. R., Long Rapids, Mich.—Give steer a teaspoonful of hyposulphite of soda at a dose in feed two or three times a day. If his bowels are inclined to be costive, give epsom salts.

salts.

Hoven.—A short time ago one of my calves took sick and acted very much like a horse with colic. Would kick at its belly, turn nose around to side and bloated badly. I am inclined to believe that it ate too much ensilage. C. B. L., Vanderbilt, Mich.—Your calf suffered from acute indigestion and if you have another case, give either hyposulphite of soda, salicylic acid or aromatic spirits of ammonia, and remember in some cases it is necessary to use trocar and canula, puncturing rumen, left flank.

Wounded Teat.—I would like to

rumen, left flank.

Wounded Teat.—I would like to know how to heal a teat that has been cut through to the milk canal, without closing the opening to teat. J. N. H., Webberville, Mich.—It is hardly possible to heal a teat without inserting a milking tube and leaving it there until wound heals; furthermore, it is very necessary to use septic measures and to bring the edges of wound close together while they are raw and hold them there, either by stitches or surgeons' plaster, applied when hot.

Scurvy.—I have a bunch of hogs

Scurvy.—I have a bunch of hogs that are troubled with scurvy which causes an itchy condition of the skin. I have applied coal tar disinfectant, but it appears to fail to effect a cure. P. S., Metamora, Mich.—Apply one part coal tar disinfectant and four parts vaseline; or apply one part oxide of zinc and nine parts vaseline occasionally. A clean bed, and keeping your hogs warm and comfortable will have a good effect.

have a good effect.

Indigestion—Weakness.—Some two weeks ago I bought a 16-year-old horse that, is low in flesh and moves about as if he was very weak. I feed him three pints of ground rye and two quarts of wheat bran twice a day and give him two quarts of carrots and a quart of bran at noon. R. J. C., Otsego, Mich.—Perhaps his grinder teeth need floating. Also increase his grain ration and give him 1 dr. ground nux vomica, ½ oz. ground gentian and ½ oz. of powdeerd charcoal in each feed.

This Big Book -Yours for a Mere Postal! OU might as well make up your mind right now to plant cleaned and graded seed grain or pay a fearful penalty in loss of crops at harvest time—particularly this year when farm seed everywhere is reeking with foul weeds and sickly grain (due to last summer's heavy rains). In this latest book of mine, "A flarvest of Gold": prove then seed of cleanes seed so conclusively that you will never plant another bushed of ordinary

#### How to Clean and Grade Seed Grain and Grass Seed

This remarkable book explains the cheapeat; quickest, easiest way to clean any kind of farm seed. Wheat or Rye—how to remove wild oats, chess, cockle and wild buckwheat. How to grade wheat or rye. Oats—how to remove mustard, kaie, wild peas, quack grass, cockle, straw joints, this buck; and how to separate the court all twin cats, the properties of the court all twin cats, the court and hull onts; how to get perfect coats for drill. Barley—how to get prevers or seed grain free of wild oats, mustard and all other weeds. Beans and Peas—how to clean, grade and remove splits and defectives from 18 varieties, including cow peas. Corn—how to remove cobs, chaff,

Best Offer I Ever Made on a Chatham Grader and Cleaner

This Big Book also tells you how you can get my latest model Chatham Grain Grader and Cleaner at an astoundingly low price; how you can try the machine 30 days free; how you can buy on easy credit terms. Write me at once and I will include my Corn Grader or Wild Oat Separator absolutely free with The Chatham Mill. This is far the best offer I ever made. Send a postal now and get the Big Free Book, together with my Special Offer, by return mall.

MANSON CAMPBELL CO. Detroit, Mich. Minneapolis, Minn.

Dept. AA-11 Kansas City, Mo.



## SALE OF 40 SHORTHOR

**30 Females** 10 Bulls By The

Michigan Shorthorn Breeders' Association In the Stock Pavilion, East Lansing, Mich. 9:30 A. M. January 21,

W. W. KNAPP, Pres. Howell, Mich.

### DRAFT HORSES

BY THE

Michigan Horse Breeders' Association 23 Stallions. 35 Mares. 58 Head. 2 Belgians. 56 Percherons.

Will be sold in the same Pavilion at 12:30 P. M. R. S. HUDSON, Sec'y. East Lansing, Mich.

Col. Carey M. Jones, L. L. Seeley, Auctioneers.

Catalogues Ready

When Writing Mention The Michigan Farmer.

CLOVER We have the kind you used to sow. Large, plump, blue seed; over 99% pure and high vitality. Remember, every five pounds of dead seed and impurities to the bushel, adds \$1.00 to cost; also, that the country is flooded with seed containing five to fifteen pounds to the bushel that will not grow.

The C. E. DePuy Co. PONTIAC

WANTED—A CAR OF "A No. 1 ALFALFA HAY" G. P. WIRT, R. No. 8, Battle Oreek, Michigan.

CATTLE

Aberdeen Angus Four young bulls also young cows and heifers, Extra good. Priced rasonable. Inquire F. J. Wilber, Cilo, Mich.

A BERDEEN ANGUS BULL, registered, 9 months old, a good one, for quick sale price \$110.00.

WILSON BROS., Lake Ann, Benzie Co., Michigan.

Guernseys for sale from A. R. dams. 2 heifers bred to freshen in June. 1 2-yr.-old bull and 3 bull calves. Geo. N. Crawford, Holton, Mich.

FOR Sale—18 Reg. fShort Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 2 to 13 mos. old John Schmidt, Reed City, R. No. 5., Michigan.

HOGS

Bred Sow Sale in Feb. 40 Big Stretchy Sows w. J. HAGELSHAW. Augusta, Michigan.

I. C.'s STRICTLY BIG TYPE. March, April and May pigs Sired by Lengthy Prince, White Monarch and Frost's Choice, all big type boars and sows weighing from 500 to 700 fbs. with quality second to none. Can furnish in parts not akin. Prices reasonable.

Newman's Stock Farm, Mariette, Mich. R. 1.

0. I. C. Choice 18 mos. old boar. Grand Champ. at West A. J. BARKER, BELMONT, MICH. R. No. 16.

O. I. C.'S <sup>3</sup> July boars. Bred gilts with size and quality. \$22 to \$30 each.
C. J. THOMPSON, Rockford, Michigan.

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

O. I. C. serviceable boars, tried sows, gilts bred for I warch and April farrow, summer and fall pigs, I pay express. G. P. ANDREWS, Dansville, Mich.

O. I. C. Gilts bred for March, April and May farrow. Recorded in buyer's name. H. W. MANN, Dansville, Michigan.

O. I. C. and CHESTER

Big type with quality. We have the undefeated breeders young herd at seven State fairs this year. They were sired by Abo 2nd, one of our many good herd boars. Special prices on all boars for the next 30 days. Get a Gilt bred to the Great Schoolmaster, the highest priced boar of the breed, Champion over champions. Write for our big catalogues with history of the best herd in the whole country. Come and see them.

--Line Viaw Stock Farms, Cass City, Mich. O. I. C. and CHESTER WHITE SWINE

O.I.C. Choice Spring boars and bred Gilts.
We pay Express and Register free.
Glenwood Stock Farm, Zeeland, Michigan.

Registered O. I. C's. Attractive prices on fall pigs and last spring glits. All from large litters. Elmer E. Smith. Redford, Mich.

0.1. C Service boars and fall pigs not akin and 25 Mar. boar, vt. 300, bigtype, heavy bone. Come and see them. ½ mile west of depot. Otto B. Schulze, Nashville, Mich.

POLAND - CHINAS From our thousand pound Grand Champion Boar and Big Stretchy Sows, of best breeding. at a bargain. Hillcrest Farm, Kalamazoo, Mich.

FOR SALE: P. C. Bred sows and fall boars, also S. C. B. Minorea Cockerels. SALINE, MICHICAN.

R.W. MILLS, SALINE, MICHIGAN.

Big Type Poland China Brood Sow Sale Sat. Jan.

By offering excells any offering ever offered at public sale in the State. Write for catalog.

WILLIAM WAFFLE, Coldwater, Michigan.

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

POLAND CHINA gilts bred for March and April far-anteed. G. W. HOLTON, Kalamazoo, Michigan.

POLAND CHINAS of the big type. Boars ready for a. A. WOOD & SON, Saline, Michigan.

Large Strain P. C. a few choice boars of spring and of spring Gilts bred for spring farrow sired by Big Defender the boar that every body goes wild over.

H. O. SWARTZ, Schoolcraft, Michigan.

Large Type P. C. Gilts and sows. Bred for Mar. and Moines, Big Knox Jr., and Giant Defender. Bred to Big Knox Jr., Smooth Wonder 3 and Big Jumbo, four greatest boars in state. Comeor write. W. E. Livingston, Parma, Mich.

Heavy BONED POLAND CHINA Spring Boars and gilts not akin. Also older stock. Prices right. CLYDE F. SHER, St. Louis, Mich.

Spring Pigs at Half Price: Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once, Pairs and trios not akin \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

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SHEEP.

Oxford Down Sheep. no stock for sale at present.
M. F. GANSSLEY, Lennon, Michigan.

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