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

VOL. CXLVIII. No. 3

DETROIT, MICH., SATURDAY, JANUARY 20, 1917

How Much Milk Should an Acre of Land Yield?

By W. MILTON KELLY

ANY things that at first appear amazingly complex turn out amazingly simple. The purely fundamental has a trick of ambushing itself behind a screen of mystery, but when by the simple process of deduction and elimination-in short, by subtraction and division-we have stripped away the mask, the fact stands so plainly revealed that we marvel that we did not understand it from the beginning. With the deductionist cult of agricultural writers fundamental is a favorite word and one much employed by them in the elucidation of factors that contribute to the success of some

particular undertaking. The Acre is the Economic Unit.

One of the great troubles in figuring profits and losses on the dairy farm has been the fact that many dairy farmers, attempting to follow the methods of the deductionist cult of agricultural writers, have put the cart before the horse by using the individual cow as the fundamental factor upon which to estimate dairy profits, whereas it is, of course, the yield of milk per acre which must be considered in getting at the net result. The dairy farmer may be a master of dairy cows and feed stuffs, but still when we come to check up his business at the end of the year we find that the cost of bringing the feeding materials to his cows reveals a leakage so great as to preclude every possibility of making a profit,

Importance of the Raw Material.

It is important that the dairy farmer should select the right viewpoint from which to look at any important question. That is the very essence of wis- othy hay, a favorite crop on many which 240 pounds are protein mate dom. In the first place, he should dairy farms does not produce more rials. If in addition to this the total make a careful estimate of the amount of feed needed for the coming year and plan to produce as much as possible of it on his farm. The man who thinks and acts from the standpoint of producing the greatest possible amount of digestible nutrients on his own farm is facing the light. From that point is unfolded the great broad question of fertility; of building up his soil so that its production shall approximate the quantity of raw material needed to produce a profitable output of milk. From the standpoint of using the individual cow as the fundamental factor upon which to estimate dairy profits has come a long list of evils that affect our dairying from the stunting of the growth of his brain and intelligence in the farmer himself to the widespread neglect of dairy farms as it exists at the present time.

Make the Land Working Capital.

produced on eight or ten acres of land of clover that yields two and one-half two most valuable crops for the dairy ling the milk yields of the cows in the we thought lightly and feebly of the tons of clover hay will furnish 2,321 farmer to grow. Clover and oats, while

ital. We know, for instance, that it figures speak for themselves. costs much less to produce, say, 400

acres of land.

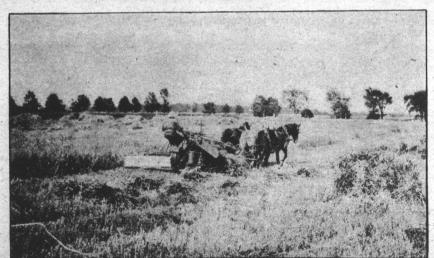
question of soil fertility. When we pounds of digestible feed nutrients, of study the question from the standpoint which 340 pounds are protein materiof feeding the cows, and not the cows, als. It is hardly necessary to point we can see clearly the greater profit in out the advantages of growing clover the working capital over the fixed cap- and alfalfa instead of timothy, for the

pounds of butter-fat from four or five ducing powers of an acre when grain poor ration. When timothy hay, or its acres than it does from eight or ten crops are grown we find that the grain from a fifty bushel yield of oats con-Let us briefly analyze the present tains about 1,000 pounds of digestible dairy situation. There is a tremendous nutrients, of which 147 pounds are prowaste in dairy farming because the tein material, and as usually very little

Studying Exhibits at Wixom Fair—a Part of a Comprehensive Program for Community Betterment. (See Page 69).

majority of dairymen are not raising of the straw can be profitably fed, this crops that yield anything like the is an approximate value of the oats. that they should—particularly protein oats to the acre should yield fifty-five -or crops that are best adapted to the bushels of corn, which will furnish successful feeding of dairy cows. Tim- 2,500 pounds of digestible nutrients, of

amount of feeding nutrients per acre Land that will yield fifty bushels of



not so valuable from the standpoint of digestible nutrients, serve as a complement to the crop rotation and help out in the economical distribution of labor on the dairy farm.

Combinations of Home-grown Feeds.

Alfalfa hay will make a good ration when fed with corn silage, while tim-Likewise in comparing the feed-pro- othy hay fed with corn silage makes a equivalent, and corn silage are the only roughage produced on the farm, it becomes necessary to purchase large amounts of protein concentrates to balance up the rations. There is no escape and one makes little or no profit from feeding dairy cows. This does not mean that no protein concentrates should be fed, for in nearly all instances a limited quantity of concentrates will increase the efficiency of the ration, especially if the cows are good producers. Most dairy farmers can save a vast amount of expense by growing these leguminous hay crops to balance up the corn silage. Clover works in rotation with corn and oats much better than alfalfa, and though it does not yield so great a quantity of digestible nutrients it is of great value in furnishing protein to balance up the corn and also aid in keeping up the fertility of the soil. On every dairy farm where alfalfa and clover can be grown successfully they should have a place in the crop rotation. Not only does alfalfa yield more feed per acre and provide nourishing properties that will supplement corn, but it is a valuable crops for soil building purposes. When grown under right conditions alfalfa enriches the soil in nitrogen; and this may also be said of clover and other legumes.

The Pasture Area.

At least a small amount of pasture should be found on every dairy farm, because the cows will thrive better and give more milk during a series of years if given a change of several weeks each year from stall or yard feeding. It is also a fact that a vast amount of labor will be saved if the cows harvest their own feed. An acre of good pasture will yield 850 pounds of digestible nutrients, of which 160 pounds are protein materials. On farms where the land is cheap and labor scarce and high in price it will pay to utilize considerable of the land for pasture and allow the cows to gather considerable of the feed during the grazing period.

A careful study of the yields and feeding values of the feed crops com-Harvesting Winter Barley at M. A. C. Yield 59 Bu. Per Acre. (See Page 61). that by growing alfalfa in place of tim-There is an economic principle in than one-eighth the amount of digesti- corn plant can be fed, as is done by othy the average yield of digestible volved in considering the production of ble protein that an acre of good alfalfa placing it in the silo, an acre will yield nutrients for each acre will be increasmilk from the standpoint of the acre, does. Notwithstanding this fact many nearly 4,000 pounds of digestible nutried more than 100 per cent. By growing and not the cow, that should be defi- dairy farmers continue to grow and ents, or about four times as much as clover a gain of approximately onenitely and scientifically worked out. feed timothy hay to their cows. An an acre of oats, where the grain alone third in the quantity of protein mate-When we think of the amount of milk acre of timothy hay yielding one and is fed; nearly three times as much as rials will be attained. In other words, that can be produced from the feed one-half tons of hay per acre should an acre of timothy hay, and about the by growing alfalfa and clover in place grown on an acre of land we change at produce as much as three tons of al- same as an acre of alfalfa. The acre of timothy one could increase the effionce our viewpoint. We begin at once falfa hay, and in three tons of alfalfa of alfalfa, however, has a greater feed- ciency of home-grown feeds for milk to put our land in the best possible hay there are 3,204 pounds of digesti- ing value on account of its higher pro- production 100 per cent and 33 per cent condition for production. So long as ble nutrients, of which 666 pounds are tein content. It will be seen from these respectively. Such an increase would we used one cow to consume the feed made up of protein materials. An acre figures that corn and alfalfa are the mean approximately the same as doub-

(Continued on page 67).

The Lawrence Publishing Co. Editors and Porprietors 39 to 45 Congress St. West. Detroit, Michigan TELEPHONE MAIN 4525.

NEW YORK OFFICE—381 Fourth Ave. CHIOAGO OFFICE—III W. Washington Street. CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E. PHILADELPHIA OFFICE—261-263 South Third St.

M. J. LAWRENCE. President
M. L. LAWRENCE. Vice-President
E. H. HOUGHTON Sec.-Tres.

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

TERMS OF SUBSCRIPTION.

RATES OF ADVERTISING: 4) cents per line agate type measurement, or \$5.60 per inch (1) agate lines per inch) per insertion. No adv't inserted for less than \$1.20 each insertion. No objectionable advertisements inserted at any price.

Member Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as second class matter at the Detroit, Michigan, post office.

DETROIT, JANUARY 20, 1917

CURRENT COMMENT.

of legislative doings with mixed feel- venient and condensed form. ings, depending largely upon the point of view of the reader. The farmer who the reader the benefit of the experinged of the introduction of a bill to prohibit the slaughtering of cattle under two years of age, or sheep under one year of age, is bound to discount working under different conditions any ability as a statesman which the any possess, because of his prove of great value to every farmer and provided the commission, including a uniform particular to the experingers of the expering the reader the benefit of the expering the results of the expering the reader the benefit of the expering the results of the expering the reader the benefit of the expering the results of the expering the reader the benefit of the expering the reader the benefit of the expering the reader the benefit of the expering the results of the expering the reader the benefit of the expering the reader the province that the total conditions to the uniform and the reader the benefit of the expering the reader the province that the total conditions are the reader the benefit of the expering the reader the province the reader the reader the province that the ings, depending largely upon the point

share of criticism and condemnation ers whose answers are here summarizthan they really merit, particularly ed are users of comparatively old type when we consider that legislative ac- machines which are probably less effition is in the final analysis dependent cient than the more modern machines upon compromises in all cases where which have been developed by manuing. But in cases where public senti- experience of these thirty users demonment is united, meritorious legislation strates the success of the farm tractor. is usually given the right of way with a Even the farmer who gives the most result quite satisfactory to public-spir- unfavorable report of the tractor in ited citizens who have interested them- the accompanying table has since statselves in behalf of any legislative ed his intention to buy a new machine propaganda which they believe will be next year. beneficial to the state and its people.

much rather than too little legislation, Farm Profit. which have been conyet many changes in public policy which have been consistently advocat- of the United States for the purpose of ed by considerable factions of our peo- determining the source of profit or loss duplicate certificate must be presented or business interest may inspire them living other than in cash receipts. to more constant and effective activity. ganizations in this state have for many demonstrations credits the average sion, they have not worked effectively ed on reports from 950 families aver to secure the enactment of the legisla- aging 4.8 persons per family. The anwhat is generally believed to be a bet- cent. The annual value of fuel used ter system of land transfers, the inter- by such a family is shown by these ested sponsors of the proposed new figures to have a value of \$62, of which system could long ago have secured its the farm furnishes 46 per cent. The adoption by a more vigorous support annual value of use of the house for of the proposed plan by personal and the average farm family is fixed at organized appeals to the leigslature \$132. and its members.

The obvious remedy for this undesir- farming as a business. able condition of affairs is a more constant interest in the legislature and its more frequent conference or correspondence with the local members of the two houses as well as the chairmen of committees having under consideration proposed legislation in which the individual has either a direct or public interest. Such an attitude on the part of the average citizen would have a most beneficial effect upon the "grist" which will be ground in our legislative mill during the session now in progress.

The Farm Tractor. terested in the possi-

tractor asks for information as to the use under given conditions. As a to a large number of tractor users in Credit Act. every section of the state, with a view from tractor users. From the first Now that the Legis- thirty replies received, the statistical sioners, held at Chicago last August, a The Legislature. lature has completed table which will be found on the oppolaw providing for the Torrens system its organization and site page was compiled. These replies of land transfers in Michigan was its members have begun to give notice were not selected in any way but were among the laws recommended for pasof their ambitions along legislative taken just as they came and a tabula- sage by this state commission. The lines by the introduction of the usual tion made from them as a means of force of this recommendation is greatflood of bills, the public reads reports presenting the information in a con-

a fairly united public sentiment is lack- facturers. As a whole, however, the

An interesting result of While we probably suffer from too A Source of the farm demonstrations ducted in various parts

ple are slow of accomplishment be- from the operation of the farms of a at the register's office before any volcause of the influence constantly ex- district is in the classification of the untary transfer of title can be regiserted by other factions whose personal contribution of the farm to the family

A recently compiled summary of the For example, at least two farmers' or- data secured from a number of such years expressed themselves in favor of farm with a contribution of \$424 toward simplified. the adoption of the so-called Torrens the annual value of food, fuel and use system of land transfers, but while of house for living purposes. In this they have been constant in this expres- summary the figures for each are bastion establishing this system. While nual value of food consumed per famthe legislature and its members have ily is fixed at \$448, of which it is estibeen blamed for this failure to adopt mated that the farm furnishes 58 per

When figuring up the year's business It is undoubtedly true that a goodly the average farmer probably does not percentage of the criticism bestowed give his farm credit for the full value upon members of this body is unmerit- of these items which it has contributed

The State Association of

real estate transfers in this state. Year after year the bill has been introduced and failed of passage, mainly because the people of the state who advocated the system did not exert their whole influence toward the passage of a bill providing for its establishment in this state. Good as have been the reasons for advocating this law in previous till every term of their demands has been fully complied with.

Franz Bopp and E. H. von Schack, respectively German consul general and vice-consul at San Francisco, recently convicted of violating the neutrality laws of the United States by conspiring to destroy munitions consigned to the entente allies, have been relieved from duty by German Ambassador von Bernstorff. Frequently a subscrib- for advocating this law in previous er who has become in- years, there are added reasons which should make it comparatively easy to bilities of the farm secure the enactment of such a law by the present legislature. It has been practicability of such an implement for authoritativly stated that the use of a uniform and simple system of land means of answering these inquiries sat- transfers would greatly facilitate the isfactorily, a list of questions was sent operation of the new Federal Rural

A commission on uniform state laws of securing data which would afford was created by the last legislature, and the inquirer first-hand information as a result of a national conference of law providing for the Torrens system of land transfers in Michigan was among the laws recommended for passage by this state commission. The force of this recommendation is greater because of the fact that only a small list of laws was recommended by the commission, including a uniform particle. A careful study of this data will give commission, including a uniform part-

If the organizations which have previously declared in favor of the adoption of the Torrens system in Michigan and individuals who have or may take an interest in the simplification of land titles will use their direct influence to that and the process of this cost by the that end, the passage of this act by the present legislature would seem almost JANUARY FARMERS' INSTITUTES. assured.

For the benefit of those who are not already acquainted with the Torrens system, it may be briefly stated that it provides for the final settlement of title to real estate by a competent court which issues to the owner a copy of the original certificate of title, which duplicate certificate must be presented at the register's office before any voluntary transfer of title can be registered. Thus the possessor of this certificate has, under this system, absolute and indisputable title to the land which it describes, and the transfer of title to real estate is thus greatly simplified.

County Institutes.

Ingham Co., Mason, Jan. 19-20; Mason Co., Ludington, Jan. 24-25; Clare Co., Clare Co., Mason, Jan. 29; Tuscola Co., Caro, Jan. 29-30; Sanilac Co

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Teutonic forces operating in Roumania are continuing their advance toward Galatz, an important position on the lower Danube. They have taken Vadeni, six miles below Galatz. The invaders have the east and Macomb Co., Richmond, Jan. 22; Areles made headway to the east and Macomb Co., Richmond, Jan. 22; Areles made headway to the east and also made headway to the east and north of this point. Operations are being greatly hindered by storms and fog. Farther to the north in Roumania fog. Farther to the north in Roumania however, the Russians are reported to have repulsed the Austro-Germans.— In the Riga district last week Russian forces were successful in advancing their lines and later succeeded in repulsing a heavy attack by the Germans at Kalnzem.—On the other fronts the usual artillery engagements and patrol and recoinoitering operations continued, except near Ancre in norththe usual artillery engagements and patrol and recoincitering operations continued, except near Ancre in north-

The Michigan Farmer

ed and the result of mis-understanding to his living during the year. If he caused by wholly different though perwould do this, it would no doubt add to haps equally honest points of view. his appreciation of the farm and of reports the capture of two Austro-Hungarian submarines, one of which is now being used in the Italian torpedo

For years the Mich-squadron.

The reply of Greece to the entente work by the average citizen and a Torrens System. and the Michigan ultimatum asking for the immediate more frequent conference or corres-Farmers' Clubs have advocated a law been unsatisfactory, and now these providing for the Torrens system of powers declare that the strict blockade of Greek harbors will not be raised un-til every term of their demands has

sador von Bernstorff.

Reports from Queretaro, Mexico, where the provisional government is in session indicate that Mexican leaders session indicate that Mexican leaders are pleased at the result of the conferences between the Mexican and the United States commissioners at Atlantic City, N. J.—The Villa chief Moreno and sixty followers were killed in a fight forty miles north of Parral on January 10.—Major General Funston has left United States for headquarters of the American troops in Mexico to inspect the camp of the punitive expedition at Colonia Dublan, preliminary to the vacating of Mexican soil. His trip as a result of a national conference of similar uniform legislation commissioners, held at Chicago last August, a law providing for the Torrens system

author may possess, because of his prove of great value to every farmer poorly considered and ill advised, who is considering the advisability of though perhaps honest attempt to lower the cost of living for his urban considering the first unbiased effort to situency. In like manner the city resistature for their point of view upon mooted quesions of public policy.

The natural result is that legislative share of criticism and condemnation the fact that many of the reader share of criticism and condemnation at the provision of great value to every farmer will make our laws conform to similar ilar laws in other states.

This work is in line with previous efforts to secure uniform legislation which will facilitate the transaction of interstate business. Among similar laws at present on our statute books are the negotiable instrument act, the uniform bill-of-lading act, the uniform stock transfer act, the uniform stock transfer act, the uniform stock transfer act, the uniform sole lieved that the explosions were due to accident.

The Dupont powder plant at Pomptian laws in time with previous efforts to secure uniform legislation which will facilitate the transaction of interstate business. Among similar laws at present on our statute books are the negotiable instrument act, the uniform bill-of-lading act, the uniform stock transfer act, the uniform stock

accident.
Col. Wm. F. Cody, more familiarly known as "Buffalo Bill," died in Den-

County Institutes.

Gratiot Co., St. Louis, Jan. 19-20; Sickles, Jan. 22. Berrien Co., Berrien Center, Jan. 20; Watervliet, Jan. 23; Millburg, Jan. 24; Sodus, Jan. 25; Baroda, Jan. 26; Stev-

Macomb Co., Richmond, Jan. 22; Armada, Jan. 23; Meade, Jan. 24; Davis, Jan. 25; Utica, Jan. 26; Warren, Jan. 27.

Hillsdale Co., Litchfield, Jan. 22; Allen, Jan. 23; North Adams, Jan. 24; Montgomery, Jan. 25; Pittsford, Jan. 26

Experience of Thirty Michigan Tractor Users.

To present first hand information on how the modern tractor is adapting itself to the widely varying needs of the farmers of the state The Michigan Farmer has brought together the experience of thirty tractor owners living in twenty one different counties of the state and arranged the information in the following tabulation. Where spaces are blank no answers were made. In column giving kind of fuel used "K" & "G" stand for kerosene & gasoline respectively:

m	ide. I	n colu	ımn giving	kind of fuel use	ed "]	K"	& "(G"s	tand for k	erosene	& gase	oline	respe	ctive	ly:							where spaces are blank no answers were
Number of Tractor Owner.	County in Which Owner Lives.	What is Size of Your Farm? How Many Acres are Under Chityation?	Character of Your	What Cash crops do You Grow?	ive Size of Your Tractor.	Many Plows Does it	Use? Use? Wuch Gas is Required to	Much Oil is Required to	Any Weaknesses De- oped in Tractor?	tas Work Been Delayed by Fault of Tractor?	Snumerate Kinds of Work for Which Tractor has been J Used.	Tractor.	Horses Used Since. Has Introduction of Tractor	educed Man-Labor? You Keep up Work Bet-	four Opinion do You Get	fow Many Acres do You Plow with Tractor?	o You Plow Deeper with Tractor?	What Have Your Repair Bills Amounted to This Year?	umber Da	Iow Many Years do You Es- imate Your Tractor Will Last?	No You Operate Your Own	Abbreviated replies to the question: "What do you find to be the principal advantages and disadvantages to the farmer, of tractors from your experience with them?".
	Berrien	1500		Peppermint	30-60		K 3	-	None	No	*1, 2, 3,	40	10 6 less	Ye	es Yes	10	es Yes	s \$50.00	Z	H 3 1	No No	Get work done when ground is in condition—Save man and horse labor—Adaptable to wide range of service.
2	St. Joseph	120 120	0 Prairie	Wheat	12-20	3	G 4	1 pt.	Yes	Yes	6, 7, 12	No Ch	ng Less	Ye	es Yes	7½N	Vo			5	No Yes	Clutch slipped and could not be remedied—Can save time and labor and have more time to get ground proper
4 3	Saginaw	205 160	O Sand and clay loams	Sugar beets and beans	7-20	2	G		Yes	Yes	1, 8, 9,	7	7 Less	Ye	es No	4	No No	0		 	No No	erly fitted for seeding or planting. Fail to secure proper traction. Find machine O. K. for belt work, but not dependable for field service.
1 4	Delta	320 180	O Clay loam	Wheat, oats, rye and hay	7 10-20	3	G 2	½ 1 pt.	No	No	10	8	4 50%	less Ye	s	. 8 1	es Yes	s None			No Yes	Feel satisfied that tractor is an economical source of farm power.
5	Cheboygan	250 200	0 Sandy loam	120 acres apple orchard	8-16	2 G	-K 4	4 1 pt.	Sand cut cyl-		1,2,3	8	4 One m	nan Ye	s ?	Y	es Yes	\$65.00	1		No	Tractor makes me quite independent of labor. In hot days on sandy sail dust would have about to the
	Dickinson	1 1011 111	5 Sand and clay	apples and potatoes Potatoes and cabbage	10-20	9.1	G 2	1/11 mt	linders	N.	1005			1	_ -							hoed crops. On steep side fills it is difficult to work tractor. Have been unable to adjust for cultivating
4			loams		- 105			1/2 1 pt.	No	No	1, 2, 3, 7, 8, 13	3	9 .		Yes	18. 3	No No				Yes No	2 researed out to the practice at reason one team to make it is good investment.
	Saginaw	140 12	5 Clay loam	Beans, wheat, oats, po- tatoes	8-16	2	K	3 1 qt.	No	No	1, 2, 3, 7, 8, 9, 10, 14, 15	5	3 Do m		es Yes	4	No Yes	None	50	10 Y	Yes Yes	Reduces cost. Can rush work. Should have work enough to keep the tractor and a few horses busy, as one cannot dispense with all horses. Small farmer can do custom work and make tractor pay.
8	Saginaw	400	. Not given	Hay, wheat, beets and oats	7-20	2	G 8	3	No	No	1, 2, 3, 9,	10	8 One m	nan Ye	s Yes	7 Y	es Yes	5.00	0	5 1	No Yes	Difficult to secure good operator. Tractor helps farmer to concentrate his work.
9	Kent	350 200	River bottom,	No cash crops	13-30	3	G		Trouble with governor	No	1, 8, 9	10	10 Do m		8	Y	es Yes	None	1		No No	Saves time. Can rush work. Does not work on side hills,—tractor has tipped over twice.
10	Ottawa	306 200	0 Muck, sand loam	Potatoes and beans	8-16	2	K 2	½ 1 qt.		No	1, 2, 3, 8,	9	6 Same	100	es Yes	4 1	es Yes	None		5 1	No Yes	Can rush work. Provides farmer with belt power. Not always dependable.
11	Gratiot		O Clay loam	Beans and wheat	8-16	2	K i	3	No	No	1, 2, 3, 4, 8, 9, 10, 15, 16, 17, 18	5	2 One le	ess Ye	8	5 Y	es Yes	10.00		5 1	No Yes	Can work it night and day. Repair service of companies should be improved to prevent long delays for repairs in busy seasons.
) 12	St. Clair	240 200	Clay and sandy loams	Not given	Not	4	G		No	No	1, 2, 3, 5			••••		10		Small	1	1	No P't	Mine is a home-made machine. Have never farmed before using tractor, so could not make comparisons.
13	Manistee	300 7	OlClay loam	Hay and oats	8-16	2 0	-K 2	3 1 pt.	No	No	1, 2, 3, 4, 19, 20	4.	2 One n less		es Yes	5 1	es Yes	25.00	1		No	Can rush work. Gives one belt power. Tractor will work on bottom lands where horses would be mired.
14	St. Clair		O Clay and sandy loams	Wheat, oats and hay	20-30	4	G 8	3 1 qt.	No	Occasion- ally	1, 3, 8, 9,	6	4 Do wo		s	6-10 Y	es Yes	12.50		1	No No	Have used tractor 4 years with total repair bills amounting to \$50. Doing better work this year than it did the first. Can handle it better now because of experience.
15	Gratiot	671 300	O Clay loam	Wheat, beans and oats	20-30	4	K		Not enough power	No	1, 2, 3, 8,	9	7 Same	No	0	5-7		. None	1	5 1	No Yes	Have much to learn about operating the tractor. Season unfavorable. Find machine cannot handle four plows well in our soil.
10	Ottawa	400 300	O Hardwood up- land, clay sub- soil	Canning crops, potatoes and wheat	30-60		G 3	1/2	Gears wear rapidly	Yes	1, 2, 3, 11, 15, 20	Same	Do wo		es Yes	4-10 S	'm Yes	\$350.00	35	5 1	No No	Difficult to get good operators. Think repair bills are too high.
17	Kent	240 200	Sandy loam, Heavy clay	Peaches, wheat, pota- toes, corn, oats, and clover seed	8-16		G 2	½ 1 qt.	No	No	1, 2, 3, 8, 17, 21	9	50% 1	ess See N'1	e See te N'te	4 Y	es Yes	\$8.65	1	1	No Yes	Cannot till wet ground. Can hurry work, especially in hot weather. Does better work and provides farmer with belt power. Because of the wet spring no just comparison with normal years can be made.
18	Mason	230	. Clay loam	Peas for canning, wheat	8-16	2	K 3	1/2	Need more power	No	1, 2, 3, 8	Same	Same	Yes	s Yes	4-5 Y	es Yes	\$50.00	40	Y	ės No	Difficult to use during past wet spring. Does good work where soil is in condition. Think repairs are high.
19	St. Clair	200 15	Sand, clay	Dairy products, hay and wheat	12-24	3	K 4	1 1 qt.	No	No	1, 3, 8, 9,	6	4. 1 less	Ye	s ?	5-6 Y	es	. None	1	10 Y	es Yes	Relieves the horses of the heaviest work. Past season has been an extreme one for any motive power.
20	Hillsdale	440 300	Cobblestone and gravel	Wheat and potatoes	8-16	2	K 3	1/2 1 1/2 pts	No	No	1, 3, 7, 8, 9, 11, 16, 18, 22	8	4 1 less	Yes	s ?	5 Y	es Yes	\$6.00		5 Y	es Yes	The work is done more quickly with less man labor. One man and tractor will do more than two men and
21	Shaiwassee	420	. Sandy loam	Wheat and beans	8-16	3	K 3	½ 1 qt.	No	No	1, 2, 3, 8,	2		Yes	s Yes	4-6 Y	es Yes	\$5.00	100	10 Y	es Yes	Use tractor 16 hours a day when rushed. Tractor is no good on hilly land.
22	Allegan	120 100	O Clay loam	Dairying, wheat	8-16	2]	K 33	½ 1 qt.	No	No	10, 16 1, 2, 3, 8, 18, 23	-			8	4 Y	es Yes	\$20.00	90	10 Y	es Yes	Work done more quickly and better. Have had trouble getting repair service.
23	Wexford	200 130	O Gravel, sand and clay	Potatoes, oats and wheat	8-16	2	K 4	4 1 pt.	No	No	1, 2, 3, 8,	4	4 Do wo	ork Yes	s Yes	4-5 Y	es Yes	\$0.10) 44	5 Y	es Yes	Works fine on level ground, but no good on hills. Does as much or more than four good horses would and
24	Saginaw	80 8		Hay, oats, wheat	10-20	3	K 4	1 1 qt.	No /	No	9, 16, 23		bett		s	6 1	No Yes	Small		Y	es Yes	is less care. Is a great help in keeping the work up to date.
25	Branch	610 48	5 Sandy loam	Wheat	8-16	2	K 2	1/2	Lacks trac-	No	1, 2, 8, 9,	12	8 25% 1	ess Yes	s Yes	5 1	No	. \$40.00	0 60		No Yes	Furnishes steady power. Excellent in hot weather. On plowed ground dust correcting a status about the
26	Mason *	408 27	0 Clay loam	Wheat and peas	8-16	2	K 4	4 1 qt.	No.	No	22, 23	6	6 Some	less Yes	s Yes	5 Y	es Yes	None			No Yes	Independent of help. Saves horses on heavy work. Was able to get over 70 ceres wheat is which would be
27	Van Buren	600	. Prairie	Wheat	8-16	2	K 3	3		No	1, 2, 3, 8,	12 1	2 Same	?		5 1	No Yes	\$50.00	0 65	3-4 N	No No	have been done with horses. Think tractor too expensive for the work it does. Excellent for fitting soil for seeding.
28	Allegan	1420 142	0 Muck	Corn, mint, hay	30-60	10	G		No .	No	10, 18, 23	45 3	0	Yes	s Yes	25 Y	es Yes	\$175.00	100	N	No No	Can rush work in busy season without expense of feeding when there is less to do. Use 6 four horse dish
29	Kent	135 10	2 Sand, clay	Melons and beans	8-16	2	К	•	Lacks trac-	No	11 1, 3, 4, 7, 8, 9, 17,	4	4 Same		. Yes	4 Y	es Yes	\$10.00	60	Y	es Yes	behind tractor. On barren, sandy soil wheels slip but if ground is covered with rye or clover all goes O. K. Think tractor handlest thing on farm.
30	Ontonagon	200 8	0 Clay	Wheat, oats, peas and	8-16	2	K 3	½ 1 qt.		No	1, 2, 3,	1.4	2	Ves	s l	3 V	es Ves	INone	1 100	13	Vo IV-	
				hay Terent kinds of work done							10, 11, 22		5 D 70 D.	MAN I							No Yes	Fits fields quicker and does more thorough work. Can do heavy work in hot weather.

*Numbers in this column refer to the different kinds of work done by tractors as follows: 1—Plowing. 2—Discing. 3—Harrowing. 4—Rolling. 5—Cultivating. 6—Renovating affalfa. 7—Hauling. silos and shredding. 9—Sawing wood. 10—Grinding feed. 11—Threshing grain and hulling clover. 12—Cutting corn and clevating fodder onto a 3-Departing cement mixer. 14—Shelling corn. 17—Spreading manure. 18—Harvesting grain. 19—Lifting roots. 20—Pulling stumps and trees. 21—Digging potatoes. 22—Baling hay. 23—Loading hay with loader.

Case Announces A New Sized Tractor

Case now presents to the agricultural world a fifth farm tractor-conservatively rated as nine horsepower at the drawbar and eighteen horsepower at the pulley.

This 9-18 is especially designed for smaller farms. Its performance is remarkable. At all of the tractor demonstrations held recently this Case 9-18 proved a sensation. It was welcomed by men who wanted a smaller sized tractor backed by a big and long established company. Previously our own 10-20 was looked upon as the smallest standardized tractor on the market in the quality class.

This new final-type Case Tractor is the outcome of several years of field and laboratory experiments, based on 26 years' experience in the gas engine world. And back of that are 75 years of experience in manufacturing farm machinery. Case never lets the farmer do the experimenting. That rule means money to you, and protection.

In this smaller sized tractor are combined the merits of all tractors now on the market, together with Case principles of construction and Case national service. This makes a combination that is not to be found elsewhere.

Case now manufactures five types of tractors—rated as follows: 9-18, 10-20, 12-25, 20-40 and 30-60—in addition to the regular line of Case farm machinery.

Before buying a tractor, know the Case line. Better be safe than sorry.

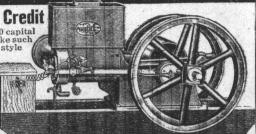
In commemoration of our seventy-fifth anniversary we have just published an unusually beautiful catalog in colors, which is now ready for distribution. This costs us 20 cents to pro-



Money In Advance

Hartman's Special Farm Credit

Only Hartman's with their \$12,000,000 capital and over two million customerscan make such an offer as this. Order any size or style Majestic enrine you want—no deposit—no C. O. D., or security. When the engine comes, work it 30 days, and if you are not fully satisfied with it, send it back at our expense and you will not be out one cent. If you are completely convinced that the "Majestic" is a wonderful bargain and just the engine you want, then keep it and pay one-tenth in 30 days, or one-sixth in 60 days, and balance in equal payments monthly or every two months—giving 10 months or



FULL YEAR TO

SEND FOR FREE BOOK and note the senfor its for its bargain price put on each engine. Book also tells how to judge an engine, how much to pay, how to pick out size and style engine best suited to your needs, and explains the Famous Farm Credit Plan. Get this -valuable engine book at once. Send the coupon or a postal today.

THE HARTMAN COMPANY, 4043 La Saile Street, Dept. 342 Chicago

Town.

2, 3, 5, 7, 9 and 14 H. P.—Stationary and Portable The Great Majestic Engine Most economical to operate. Fewer number of working parts. Perfectly balanced—just the right weight for its H. P. rating. Big improvements, Gives ever lastingly good service without trouble or bother. Absolutely guaranteed by The Hartman Co., backed by its 312,000,600 capital and resources. Fully described in our Book. Send for it.

THE HARTMAN CO., 4043 La Salle St., Dept. 342 Chicago Without obligating me, send your Engine Catal and particulars of selling plan.

Farm Notes

Concrete Floors for Granaries. Please tell me if cement flooring is suitable for granaries? Monroe Co. G. N.

It is entirely possible to make satisfactory concrete floors for use in gran-timber worth nothing. Very few men aries; in fact, reinforced concerte is now used extensively for the building day's work with a cross-cut saw. They of large storage elevators, not alone are not used to it. They don't know the floor, but the entire storage capa- how. They would be working at a still city being constructed of this material. greater disadvantage with an axe. These are usually built of cylindrical shape like a silo, with pit bottoms per- early in the spring, was to repair fencmitting the removal of all grain without shoveling. The floors in this type sometimes forty rods at a stretch of concrete storage are of course built would be all blown down during the above ground, but a floor can be constructed on the ground which will be moisture proof, provided proper meth- the corners every three or four years, ods are followed in its construction. or the bottom rail will lay on ground This subject has been discussed by many Michigan Farmer readers, some of whom have had satisfactory results from the use of concrete floors in granaries. Unless the floor is made moisture proof, of course trouble may be expected, and on heavy soils a timber floor would probably be more satisfactory.

In case concrete is used, it should be laid on a coarse gravel or cinder foundation of a depth to destroy capillary connection between the moist earth and the floor, and artificial drainage should be placed about the building if necessary

Poisoning Sparrows.

Will you please give me a plan for catching sparrows? I know some people dope them and then gather them Do you know of a better method? alhoun Co. W. F. Ctalhoun Co.

In his work on Michigan Bird Life, Dr. Barrows, of M. A. C., describes an sparrows at the usual time and place. look as well, but it is business. Most of the sparrows eating the grain will die within a few moments and and pigeons may be protected by cova slatted coop, which will admit the be carefully swept up after its mission has been accomplished.

LILLIE FARMSTEAD NOTES.

of it sold, believing that the pasture former mode of living has changed as from the land would be of more value much. If conditions would stand still than the fire wood. I have heard many for a while until we could establish good lecturers on forestry and, with some system of doing things that would

father, had to cut the fuel for the year plans. directly after the winter term of school closed and before spring work com-With good hard coal it is different.

While we have no woods, properly speaking, we have a grove and some of the trees are decaying. They should be cut into fire wood. A friend recently asked why I did not do it. Now, the reason is that it would be mighty expensive fuel, even when we call the in this neighborhood now can do a

Another job we used to have to do es. Most of them were rail fences and winter. These must be laid over, besides new blocks must be placed under and soon rot. Now the job of repairing fences is reduced to a minimum.

Business Readjustment.

such conditions change we change our business to meet them. At the present time my men would have no time to cut wood or repair fences in the spring. They are busy from morning till night, day in and day out, caring for the cows and other stock, and drawing manure. Stable manure is a very valuable product in modern farming. We all realize that. Why, a man's success at farming nowadays is measured almost by the amount of manure he produces. But it costs a lot of money to haul out this manure. It is some job on a dairy farm where fifty cows are kept, with other stock

Other things have changed with the changed conditions of labor, etc. It was a common practice to cradle a swath around a grain field before puteasy and effective method of poisoning ting in the reaper, so as to save the English sparrows. Briefly described, grain. But now no one thinks of dothis method is as follows: In winter, ing this. The man's wages would cost when snow has covered most of their more than the price of the wheat he available food supplies, bait the spar- would save. My father used to mow rows to a convenient feeding ground the corners of the fences in the meadby scattering grain for them for sev- ow when cutting hay, now we have no eral successive days. Note the amount corners, and besides it would not pay of grain which will be consumed by from a business standpoint. The hay them at a feeding, soak a similar is not worth the cost of the labor. We amount with a solution of strychnine, can simply do what can be done with carefully dry same and feed to the machinery and let the rest go. It don't

Enter the Machinery Age.

Without modern farm machinery the within a few yards of the feeding place. farmers could not now clothe and feed The others will flutter away, but with- the world. We could not have the in a few hours practically every spar- world population we have today if it row eating the grain will die. This were not for modern farm machinery. method should be used only in winter Undoubtedly we could mow fence corwhen useful birds are absent. Poultry ners and cut some wood if we had to, and would work as hard and as many ering the selected feeding place with hours as we did years ago, but we don't have to do it and we simply sparrows and exclude the poultry, and don't. Some people think we are on any residue of poisoned grain should the road to destruction, but I don't believe it. We are meeting changed conditions, and meeting them in a hurry, and it is a wonder we do as well as we do.

Think of the changes that have tak-Winter is the usual time or used to en place in farming in a life time. I be at least, for the farmer to get up his have seen the evolution from the jumpyear's supply of fire wood. Many farm- ing shovel plow to the modern tractor ers no longer have a woodlot. That is plow; from the old scythe to the modthe case with us. The last piece of ern mowing machine; from the ox woods was cut off and a large portion team to the tractor engine; and the due respect to the argument set be stable, we could learn how to do forth, I still believe I did the right them better. But there has been no thing in cutting off the woodlot. standing still; one invention after an-Oh! how things have changed snice I other, brings new conditions so fast was a boy. At that time we boys, with that we can hardly make permanent

Changes for the Better.

Yet we can see that all is for the menced. The hired man was rarely em- better. Every new invention and conployed to begin until active farming dition is better than the old. Farmers, operations commenced. But if I had a and the whole people, are much better woodlot now I think it would cost off today than ever before, and the conmore to cut the wood and prepare it ditions are going to be better instead for the stove than it costs to buy coal of worse. We can't stop. We do not and gasoline. Besides, I prefer to use wish to. There are drawbacks to this coal, if it costs a little more. It is too age, but we are so much better off than much trouble to keep a uniform tem- our forefathers that we ought to be perature with a furnace and wood. thankful, and I believe most of us are, COLON C. LIELIE.

Barley as a Michigan Feed Crop By J. F. COX

F all grains widely grown, it is place in Europe as corn does in this country.

the most important feed grain, but black and white in color. throughout the corn belt barley is of the superior value and yield of corn.

Barley as a Feed Crop.

ing their early growth possess a frame same end. which will carry much more fat when later topped off with heavier barley being too hard to feed whole.

feeders to get finished hogs on the good barley crops. market before the corn-fattened hogs of the corn belt are shipped in large numbers and depress price. The new winter barley offers great possibilities of such a practice because of its high yielding ability and because it is harvested and ready for feeding in June. For the Upper Peninsula and under certain conditions in southern Michigan, barley yields more and is better adapted as a feed grain than corn. If properly seeded the winter barley may extend the area in which barley competes with corn considerably to the south and even into the corn belt.

Varieties of Barley.

dinary Oderbrucker, its parent stock.

The Michigan Experiment Station in early fall. It is ready for harvest in enough to carry through the winter. the proper time, yields of over sixty the Michigan winter barley. busehls per acre as far north as Saginaw have been secured. The winter barley gives great promise but it must be more thoroughly tried out before definite statements as to its value to "Good for the Michigan Farmer."

"Your paper is truly a wonderful paper. For example, I got letters today as follows: definite statements as to its value to Michigan can be made. Those who and from all of the other ten publicaseed it should be sure that seed is setured in time for early planting. The Hessian fly does not appear to lessen the yield.

The Wichigan Parmer 25.

And from all of the other ten publications I used I got but 18. This is a sample of my mail most of the time. I shall be with you again next year."—(Signed) N. A. Knapp, Rochester, Ohio. White and brown ferrets.

Hooded barley (commonly termed probable that the general public beardless) is frequently used successis least familiar with barley, its fully in getting a stand of alfalfa, the varied types, particular adaptations barley being cut when in the milk and uses, and methods of cultivation. stage and used for hay purposes. Hay Historically, it is an ancient grain. Bar- from hooded barley being free from ley is mentioned in Exodus, and barley beards does not injure the mouths of heads have been taken from Egyptian animals or work into the wool of sheep. tombs more than 3000 years old. The Hulless barley is being grown to some ancient Romans not only used barley extent in Michigan but most growers for food but made beer of it. In early report that it does not yield as much times, barley meal was largely eaten, as common barley and it is necessary and has always been the great feeding to grind it the same as other barley. grain of Europe, filling much the same There are many other types and varieties of importance not adapted to Michigan. In the Dakotas, the two-In Canada, California, and certain rowed type is grown; in the Rocky sections of the west, barley is today Mountains a hooded, hulless type, both

Of all grains, barley is the most varlittle importance in feeding because of jable. A study of the barley plats of the Michigan Experiment Station will show many types and variations of in-According to present indications, bar- terest, among which are a true, beardley growing in Michigan will be of less barley, developed by the United much greater importance than in the Stats Department of Agriculture, void past. As a grain feed for sheep, its even of the characteristic hood of the value is recognized among sheep feed-commonly termed beardless; two-row, ers and hog raisers claim that as a four-row and six-row types, hooded and summer feed barley excels all other bearded types, hulled and hulless bargrains. Barley is not as good a fatten- leys. One of the variations of interest ing feed as corn, but for growing ani- is a smooth awn type differing from mals it furnishes a much better feed, the ordinary barley in that the awn is being to a greater extent supplied with devoid of barbs and smooth as a minerals which build up bone and needle. At present it serves only as make for a large frame. Barley is also an example of the plant breeder's skill high in protein, which is needed in and the possibility of his work. While muscle building. Barley is an excellent this smooth awn strain is not as yet of grain to feed during the growing sea- economic importance, it may in the son when the hogs are in clover, blue future prevent the general exodus of grass or alfalfa pasture, and next to hired men from barley growing seccorn is the best grain feed for topping tions at harvest time, in case the true off. Animals fed on such a ration dur- beardless types do not accomplish the

Planting Barley.

Barley requires a more fertile, porfeeding, or corn. In feeding barley, to ous and better drained soil than wheat. secure best results it is necessary to Its root system is comparatively shalgrind the grain, even the hulless type low and not as effective in penetrating the soil as that of wheat. Barley does Through the early feeding of barley not do well on many heavy clays. Soils it is easily possible for Michigan hog high in organic matter usually produce

Spring barley should be seeded as soon as the ground can be properly prpared in the spring. At seeding time the seed bed should be firmed and the surface worked into good tilth. Fall plowing puts the land in good condition for barley, since it is easily put in shape with the disc or harrow in the spring and is properly firm. In the spring, plowing should be done as early as the ground can be worked to a depth of about four inches, and followed with a roller and harrow so as to pack the furrow slice thoroughly and leave the surface in good shape. The usual rate of seeding is two bushels Of the spring barleys, the Oderbruck- seeded in at an early date and two and er variety is usually conceded to be one-half bushels if seeded during the the best yielder. It is a six-rowed, latter part of the sason. Seed should bearded, hulled type. The highest be treated with formalin solution made yielding strain is the Wisconsin Pedi- by mixing one pint of forty per cent greed, considerably superior to the or- formalin with forty gallons of water, so as to prevent smut.

Winter barley should be seeded on Plant Breeder has recently developed fertile, well prepared land during the a new barley known as the Michigan first half of September. Seeded at this Winter barley. This barley is seeded time gives it opportunity to develop It yields one-third to one-half One bushel per acre is the rate of seedmore than spring barley and requires ing advised by Mr. F. A. Spragg, plant but one bushel of seed, since it tillers breeder, who developed this barley. profusely. It is most important that Being fall seeded, it has time in which this barley be seeded early, before to stool out remarkably. Muck soils September 15, if possible, since late or poorly drained soils of the type seedings may not come through the which heave badly during the winter winter successfully. Where seeded at should be avoided in choosing land for

The Michigan Farmer 29.



Flour Facts

Unusual weather conditions during the last growing season have produced a smaller, lighter kernel of wheat, making it necessary for flour millers to take extreme precautions in wheat selection and in milling.

The Pillsbury Flour Mills Company is fully prepared and equipped to meet this situation. Huge wheat-storage capacity and unexcelled laboratory facilities make it possible for us to select the right wheat and to mill it the right way.

As a result, Pillsbury's Best flour is being produced on the same high-quality basis which has always characterized it. It costs us more money this year to maintain the Pillsbury standard, but we are making the same good flour and will continue to do so.

You who already know and use Pillsbury's Best need not worry about spoiled bakings. You can rest assured that with Pillsbury's Best your usual methods will produce the same delicious bread, cake and pastry; so we say,

The Flour Question Settled "Because Pillsbury's Best"

for a copy of the famous Pillsbury Cook Book. Address Dept. F29 Pillsbury Flour Mills Company, Minneapolis, Minn.

Bates All Steel Oil Tractor

The The Market. Years of hard service has developed every detail and it is entirely out of the experimental stage. It is a Real Tractor and will stand years of hard work.

If you buy a long time. You won't have to buy a new machine every spring.

No Chains

The Break to the has positive Steel Gears that are guaranteed not to break for five years, you won't have to bother with troublesome chains that have proven a failure in all self-propelled machines.

A Four Wheel Tractor

The MS Molecular has four wheels, two wide rear wheels for drivers which provides an abundance of traction and won't mire in sandy places or on soft ground in the spring of the year but will go where horses can be driven practically. This construction has become a standard with manufacturers who have had long experience in building self-propelled machines, therefore, we could not ask our customers to accept a machine that is experimental.

All Steel

extreme and sacrificed strength and rigidity that we might produce a machine that is extremely light. Our engine is slow speed and will last a long time.

The Oil Carbureter used in the results of special design. It can be found only on our engines and is the product of 20 years actual experience in the manufacture of gas engines. It is fully developed and will operate equally as well on kerosene as gasoline under all speeds and all loads. It won't bother with carbon or tar. You won't have to change from kerosene to gasoline when the engine is running empty or under part load. Think of the immense saving with this cheap fuel.

Solid Facts

The Burn 1/5 to 01 lister is directly connected to the plow carriage and you can back the plows into the corners of the fence and plow all of the field. The plows operate independently and will do good work in stony and rough ground. One man can operate the entire outfit.

The facilities has two speeds for-ward and will draw heavy loads up steep hills. Our cab is appreciated by handreds of our cus-tomers. We are not assemblers, we build our entire outfit in our own factory. 2 sizes: 16 and 30 H.P. Send for catalog.





To get this exceptional value you need our catalog. In selling direct to you we depend Send for it today. Drop us a postal now. GREEN'S NURSERY CO., 31 Wall St., Rochester, N. Y.







THE CRESTLINE TINY WHALE

PEACH & APPLE TREES 2c and up.



EVERGREENS Best for windbreaks and hedges. Protect buildings, crops and stock. Added warmth saves fuel-saves feed. Hill's evergreens are hardy, mursery grown. Get Hill's free illustrated Evergreen Book and list of the Great Bargamofilers—from \$4.50 per thousan six years' experience. World's largest grow D. Hill Nursery Co. Evergreen Snee

Mention The Michigan Farmer Whea Writing Advertisors 2300 Gedar St., Evergreen Specialists Dundee, M

State Vegetable Growers' Convention

Michigan State Vegetable Grow- methods. ers' Association, held at the Tulization. It showed that the vegetable this highly important industry. branch of agriculture.

\$14.95.

Importance of Vegetable Crop.

ue for vegetables of \$470,726,031 and cretion of the executive committee. that of fruit \$160,841,828. In the group of states comprising Ohio, Indiana, the fruit crop was only \$33,308,433. In the same year the value of the Michigan vegetable crop was \$27,255,073, while of the fruit crop the value was only \$12,579,764. Since the last census there has been an estimated increase in value of the vegetable crop in Michigan of 25 per cent. In one of the leading trucking sections the increase has been over 200 per cent.

In thirteen states the vegetable crop exceeded in value the corn crop. In seveals and in eleven states the value was brought over in soil which was used as greater than the value of all other ballast for boats.

These facts are not understood by most people and while other agricultural industries are being fostered by state and nation, the vegetable indusshould in this respect.

Better Methods Should be Encouraged. urged that the association use its efculture, standard grades for packing

> Before **Drinking** Coffee, You Should Consider Whether Or Not It Is Harmful

"There's a Reason" for

POSTUM

HE first annual meeting of the and marketing, and better marketing

The report of the secretary, C. W. ler Hotel, Detroit, January 9, was a de- Waid, emphasized the necessity of orcided success in every respect and ganization and the value of organized spoke well for the future of the organ- effort in securing needed reforms in

growers realize the necessity and ad- After this report the constitution vantage of organization of this great and by-laws, prepared by a special committee, was considered and adopted. A. N. Brown, who was president for This constitution provides for the usthe past year, was not able to be pres- ual officers, an executive board, coment, but his address, which was read posed of the officers of the association, by Secretary Waid, brought out many and secretaries of affiliated local and valuable facts regarding the import- county organizations, and an executive ance of the vegetable industry. For in- committee consisting of president, secstance, of the important crops grown, retary and one member elected by the the vegetable ranked next to fruit in executive board. The executive comthe average net value per acre, the mittee is to transact all necessary busvalue per acre of fruit being \$110.01 iness of the association when the exand that of vegetables \$83.02. The avecutive board is not in session. A large erage net value of the cereals was number of standing committees to give attention to the problems of the various phases of vegetable gardening are The total value of the vegetable crop also provided for. The annual dues is three times greater than that of are one dollar and the time and plan fruit, the census figures showing a val- of the annual meeting is left to the dis-

The New Officers.

The following officers were elected Illinois, Michigan and Wisconsin the for the ensuing year: President, G. C. value of the yegetable crop in the cen-Raviler, Plymouth; vice-president, L. L. sus year was \$90,733,938, while that of Yonker, Grand Rapids; treasurer, Eugene Davis, Grand Rapids; secretary, C. W. Waid, East Lansing.

After the business session Mr. D. B. Whelan, of the Agricultural College, gave an illustrated talk on controlling root maggots. There are three kinds of root maggots that do the most damage, the cabbage maggot, the seed corn maggot and the imported onion maggot. The first two work mostly under ground while the onion maggot works in the bulb and stalk. All three were en states it exceeded that of all cer- originally imported from Europe, being

The cabbage maggot, the most important of the three, is found in all Europe, except France and Italy, and north of the fortieth parallel in the United States. The maggot doing damtry has not received the attention it age in the south is probably the seed corn maggot.

There are three broods of the cab-In closing his address Mr. Brown bage maggot which range from the middle of May to late in September. forts to encourage better methods of It has been found that the first brood appears at the time of the blossoming of the Windsor cherry. It is in the maggot form that the insect does the damage. The pupae stage is spent near the roots of the host plants and the eggs are also laid very close to the

Controlling the Cabbage Maggot.

Means of control are the use of a fly-proof cheesecloth frame on the seed bed, the use of poisoned bait near the seed bed, and the use of tar paper disks around the plants in the field.

The poisoned bait, consisting of onehalf pound of white arsenite to one gallon of syrup, should be put in shallow dishes which are covered with a screen so that the bees cannot get to it. Just enough of the bait to cover the bottom of the dish is all that is

An Efficient Method of Control.

It has been found that the tar felt disks are better than the plain tar paper, as the paper curls when the weat er gets warm. This paper collar method is very efficient in controlling the maggot, because the fly lays her eggs on the paper and when hatched the maggot gets tar for its first meal.

Corrosive sublimate has proven very good as a remedy but is dangerous to use and therefore not advised. The destruction of old cabbage stumps or anything left after harvesting will keep the maggot in check as many of the insects hibernate in this refuse.

The control of the other maggots is similar to that of the cabbage maggot. However, for the onion maggot irrigation before the eggs hatch has proven valuable. The irrigation scatters the eggs and if they are moved more than Better Municipal Markets.

they are comfortable in bad weather. the Experiment Station at Guelph. An all-day market should be maintaindemand for such markets and there farmer and vegetable grower. would be no better place for an enlarginstitution will soon vacate.

Results of his experiences in soil fer- er. There were over sixty in attend-

three inches from the plant the maggot making an honest endeavor to supply dies, as it cannot get to its host plant. good seed. With very few exceptions they were all working conscientiously Mr. Milton Carmichael, editor of the for improvement in their methods, and Detroit Courier, gave some very prac- it is really surprising that we get as tical suggestions regarding the im- good seed as we do for the price we provement of the Detroit municipal pay. Two dollars an ounce for seed markets in his talk on "Local Market that we were quite certain would come Needs." He said that at present they true to type, was not too much to pay. were known for their excessive venti- Prof. MacLennan showed slides illuslation and lack of protection from the trating work of selection in which he weather and dust. The markets should has been interested in his connection be cleaned up and enclosed so that with the Heinze Pickle Company and

In the absence of Prof. Mumford, Mr. ed so that the farmers can leave their C. B. Cook, of the Farm Management left-over stuff for sale during the day. Department of M. A. C., gave a very in-The hours for marketing are too short teresting talk on "Co-operation." He and are not arranged for the conven- brought out the necessity of getting toience of the general public. The city gether and co-operating for the solushould also provide for the increasing tion of the larger problems of the

The interest throughout the entire ed and improved market than the site program was very good and the discusof the House of Correction which that sions showed that the subjects related to matters vital to the vegetable grow-



The Orchard Irrigation System is Being Used by Many Truck Gardeners. tility work, successful and otherwise, ance and the success of the meeting

were given by I. R. Waterbury, editor sures one of great accomplishments for of the Michigan Farmer, in his talk on this association in the future. "Getting Ready for Gardening." He also told of the methods used by successful intensive farmers and of the importance of vigor and thrift in the production of vegetable plants.

The Cost of Disease.

Coons, of the Agricultural College. Dis- ing the dead canes which have borne control, sanitation and hygiene, plant enlarges the fruit producing area. protection and repair, and immunity ing seed, getting rid of infectious ma- and keep the bushes from becoming terial, eliminating sick plants or parts infested with disease. The dead wood

and spraying before the disease at- the propagation of insect pests and tacks the plant. Bordeaux is the chief fungous diseases. Careful pruning prospray material for diseases. Its effect duces a better quality of fruit and as is due to the fact that the growth of the patch does not become a tangled the spore causes an acid condition mass of briars it is much easier to harwhich dissolves the copper in the Bor- vest the berries. The growing of small deaux, which causes its death.

sin great work has been done in the se- berries. lection of disease-resisting specimens from badly infected fields.

Secretary Waid gave a very interesting selection of slides showing various phases of greenhouse work. Many practical things were brought out in trees and other plants may be saved the comments and discussion of these from attacks of the rose bug by proper

Hotel Tuller. There were over fifty in case. Valuable plants may be covered attendance and a delightful social hour with mosquito netting for two to three was spent. Many of the prominent weeks when the beetles are swarming growers responded to toasts.

Good Seeds Economical.

The evening session was opened by closed in paper sacks. a discussion of "The Improvement of For a large number of plants, a ough investigation of the seed business this cloth and through the hole into a convinced him that the seedsmen were pail of kerosene and water.

PRUNING BRAMBLES.

Raspberries and blackberries produce fruit on the wood which they developed during the preceding year and "Diseases of Truck Crops" was the after bearing fruit the canes die. The subject very ably handled by Dr. G. H. necessary pruning consists in removeases caused great losses each year; the year's crop and also heading back oat smut alone causes losses at the the new canes which will produce next rate of \$45 for each ten acres of oats. year's crop. Heading back the new There are three general methods of growth causes it to branch out and

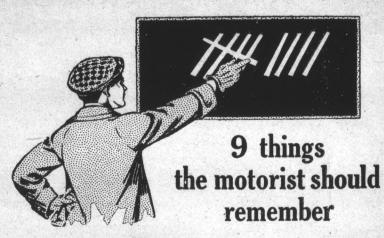
A thorough pruning of the berry relations. The first consists of treat- patch will remove many diseased canes of plants, rotation and soil disinfection. removed should be raked up and burn-Plant protection consists of dusting ed, thus destroying many chances for fruit is becoming very profitable near The hope of the future, Dr. Coons good market centers and careful prunsays, is in the selection of disease re- ing is one of the factors in producing sisting varieties or strains. In Wiscon- annually a fair quantity of marketable

R. G. KIRBY. Ingham Co.

CONTROLLING ROSE BUGS.

Rose bushes, grapevines, small fruit means of protection. Poisonous sprays The annual banquet was held at the have been found ineffective in this which occurs in late June or early July. Newly set grapes will be safe if en-

Varieties of Vegetables Through Selec- practical device is an umbrella-shaped tion," by Prof. A. H. MacLennan, of collector having a hole in the bottom. Guelph, Ontario. He said that a thor- The beetles may then be shaken into



expenses — lubrication — is your chief safeguard against your heaviest expense—depreciation.

2. Friction is relentless.

The effects of the incorrect oil will not be apparent during the first piston stroke or the second. But when piston strokes run up into the millions-and that does not take long-friction begins to get its due. You need not look for the effect of wear then. You can hear it.

3. Worn motors never "come

4. If given intelligent care and scientific lubrication, your car should run better the 2000th mile than the first.

5. No matter how freely a low quality or wrong- MOD bodied oil is used A grade for each type of motor nearest office.

1. One of your smallest it can never do the work of the correct lubricant.

> 6. No one oil will suit all cars. This is absolute.

7. You selected a car that suits you. Now select an oil that suits your car.

8. Though you may want correct lubrication, you will seldom stumble on it by chance.

9. The Lubrication Chart, printed in part below, was prepared only after an engineering analysis of every American car and the leading foreign makes. It is revised yearly to include each season's new models. It represents our professional advice and specifies the correct oil for your car.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. mation, kindly address

CORRECT AUTOMOBILE LUBRICATION

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

Gargoyle Mobiloil "A" 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	917	1	916	1	915	19	14	19	113
CARS	Summer	Winter								
Abbott-Detroit	Arc	A	Arc							
'Allen (8 cyl)			A	A	A	A	12	100		100
" (Mod. 33-34-35).	1 A	Arc	14	Arc	A	Arc.	A	A	A	A
" (8 cyl) Allen " (Mod. 33-34-35) Apperson	. Arc	Arc	Arc	Arc	Arc.	Arc	Arc	Arc	Arc	Arc
Auburn (4 cyl)	A	A	A	A	1	10	1	10	1.2	A
" (6 cyl)	Are	Arc	Arc	Arc	Arc	Arc.	Arc	Arc	A	A
Avery	1	1	IA	A	A	A	A	A	A	A
" (Mod. 5 & C1 ton)		Arc.	Arc	Arc.	Arc.	Arc.	Arc		
Avery (8 cyl). Briscoe (8 cyl). Buick Cadillac	A	Arc	A	Arc	A	Arc.	A	Arc		
Buick (8 cyl)	Are	1	A	A		200	13	2.		
Buick Cadillac (8 cyl) Case (8 cyl) Case (Mod. 6-49) " (Mod. 6-49) " (Mod. 6-50) Chandler Six (hevrolet (0) Cole (6 cyl) Dart (Mod. C) Detroller (8-cyl) Dodge (6 cyl) Federal Ford (6 cyl) Federal Ford (7 cyrathin (1) Fo	Parc	Aire	PAIC.	Arc	ATC.	Arc.	Are	Arc	Arc	Arc
" (8 cyl)	IA	A	A	A	Arc	Arc	me.	- are	Tit.	- nic
Case	A	Arc	A	Arc.	A	Arc.	A	Arc	A	Arc
Chalmers		1.	Arc.	Arc	Arc.	Arc.	A	A	Arc	Arc
" (Mod. 6-40).	100	100	A	Arc.	0				1	
Chandler Six	A	A	A	A			20		20.00	
Chevrolet	Arc	Arc	Arc.	Arc.	Arc.	Arc:	Arc.	Arc.		
Cole	Tite	True.	Arc	Arc	Arc	Arc.	400	Arc.	Arc	Are
" (8 cyl)	A	A	A	A	A	A	Parc.	arc.	Tare.	-sic
Dart	A	Arc.	A	Arc.	Arc.	Arc.	A	A	A*	Arc
" (Mod. C)	A	Arc.	A	Arc.	A	Arc.	A	A		
Detroiter	Arc.	Arc.	Arc.	Arc.	A	Arc.	A	A	A	Arc
(8-cyl)	100	200	9.0	10	Arc.	Arc.				
Dort	A	Arc.	A	Arc.	A	A				***
Empire (a cyl)	A.	Arc.	A	Arc.	Are	Arc.	Are	And	And	Ave
" (6 cyl)	Arc.	Arc.	Arc.	Arc.	anc.		Tut.	arc.	Arc.	Aire
Federal	Arc.	Arc								
Ford	E	E	E	E	E	E	E	E	E	E
Franklin	A	A	A	A	A	A	A	A	A	Arc
Grant	A	Arc.	A	Arc.	Arc.	Arc.	Arc.	Arc.	1.20	
" (raced)	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc
Franklin Grant Haynes (12 eyl) Hudson (Super Six)	"	13	Arc	Arc	Arc	Arc	Ann	Arc	Δ	Are
" (Super Six)	A	Arc.	A	A						ZAIC
Hupmobile	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc
I.H.C. (air)	ire.			100	B	A.	B	A	B	A
I.H.C. (water) (2 cycle)			A	A	A	A	A	A	A	A
I.H.C. (water) (4 cycle)	-		A	Arc.	1	11.4		14.0	44.5	
Interstate	A	Arc.	A	Are.	A	Arc.	A	Arc.	A	Arc.
" (6 cvl)	A	A A	A	Arc.	A	Arc.	4		****	
Hupmonie L.H.C. (air) L.H.C. (water) (2 cycle) L.H.C. (water) (4 cycle) Interstate Jeffery " (6 cyl) " Com'l. King	A	Arc	A	Arc	A	Arc	Arc	Arc	Arc	Arc
King		200			A	Arc.		A	A-	E
" (8 cyl)	A	A	A	A	Arc.	Arc.	ii.	300	2000	
Com	Arc.		100							

Model of	1	917	1	910	1	915	1	914	1	913
CARS	Summer	Winter								
Kişsel Kar " Com'l " (Mod. 48).	I A	LArc	JA	Arc	.I A	Arc	A	Arc	Arc	Arc
Lovington	Arc	Arc	Arc					1000	100	
Locomobile Marmon Maxyell	A	A	A	A	A	Arc	A	Arc	Arc.	Arc.
Mitchell	Arc	Arc	Arc	Arc	Are	Arc	Arc	Arc	Arc	Arc.
Moline	1	25	A	A	1:	13	1	1::	A	Arc.
Mitchell (8-cyl). Moline. "Knight. Monroe Moon (4-cyl). "(6-cyl) National	A	A	A	AE	A	Arc	A	A	-	-
Moon (4 cyl)	Arc	Arc.								
National (12 cyl) Oakland	Arc	Arc	A	Arc	A	Arc	A	A	A	A
Oakland	Arc	Arc.	Arc	Arc	Arc	Arc	Arc	Arc	A	Arc.
" (8 cyl). Oldsmobile	A.	-	Arc.	Arc.	Arc	Arc	Arc	Arc.	Arc	Arc.
				Arc	Arc	Arc	Arc	Arc	Arc	Arc.
" (12 cyl)	A	A	A	A	10	Arc.		Arc.	Arc	Arc.
Packard (12 cyl) Com'l Paige (6-46) (6-26 & 18)	I.A.		A	A.	A	Arc.	Arc	Arc.	Arc.	E.
(6-36 & 38). Pathfinder	Arc	Arc.	Arc.	Arc.	Arc.	Arc.		1		
Peerless.	Arc	Arc.	Arc.	Arc.	Arc	Arc.	Arc.	Arc.	A	Arc.
Pierce Arrow	Arc	Arc	Arc	Arc	Arc.	Arc.	Arc	Arc.	Arc.	Arc.
Possit	A	A	A	Brc.	A	Arc.	A	Arc.	A	Arc.
(8 cyl) Reo Saxon Stearns-Knight "" (8 cyl) Stephens Stephens	A	Arc	A	A	Arc.	Arc.	A	Arc	A	Arc
Saxon	E	E	E	E	E	E	E	E	Α.	Α
" (8 cyl)	A	A	В	A						
Studebaker	A	Arc.	A	Arc.	Arc.	Arc.	A	Arc.	A	Arc.
Velie (4 cyl)					A	Arc.	A	Arc.	Arc.	Arc.
Westcott	Arc.	A	Arc.							
Velie (4 cyl) " (6 cyl) Westcott White Willys-Knight Willys Six	Arc.	Arc.	B B	Arc.	B.	Arc.	Arc,	Arc.	Arc.	Arc
Willys Six	Arc.	Arc.	Are.	Arc.	Arc	Arc.	Arc.	Arc.	Arc	Arc.

YOUR TRACTOR

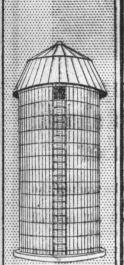
also may be lubricated efficiently with Gargoyle Mobiloils. On request we will mail you a separate Chart specifying the correct grade for each make and model of tractor.

VACUUM OIL COMPANY, Rochester, N.Y., U.S.A. Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

Domestic Branches:

Boston Kansas City, Kan,

AND REPUBLISHED AND A SERVICE



SAGINAW Leader-Silo

moderate priced slio, stangard in every way—equip-ped with steel braced girder, medern door frame construction, spline-dowel, im-proved base anchor, and other famous Saginaw features.

Saginaw Silos **Set New Standards** of Silo Value

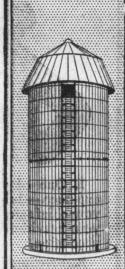
Famous for its superior construction the Saginaw Silo has been recognized as the standard of silo values. This year two types of silos bear the name Saginaw. And each represents perfection developed to a greater degree than ever before.

the tremendous resources and reputation of one of the largest makers of silos in the world. Today thousands of silos bear Today thousands of silos bear that name—bringing the benefits of silage feeding to countless farmers. These facts are sufficient reasons for your choosing a Saginaw, to say nothing of the many Saginaw features that have made it undisputed leader in the silo field. Every member of our organization strives continually to guard the good name Saginaw—to make in mean more real value to the farmers of this country.

Back of the name Saginaw are

Take advantage quickly of our present extremely favorable prices. Consider-ing the advancing market on raw ma-terials we cannot guarantee prices.

Ask us for the name of Saginaw salesman in your territory. He can help you choose the best silo for your needs. Please address Dept. 170 The McClure Co. Cairo, Ill. Saginaw, Mich.



SAGINAW Steel-Built

A super-quality Sarinaw Silo, famous for its steel construction, equipped with Sagriana Steel door frame, angle steel rib, aplina-downels, perforeted anchoring system, a silo that represents the highest type of ails construction of ails construction.

e e incex

What Should an Engine Weigh?

Cushman Light Weight Engines 40 to 60 Pounds per Horse Power

40 to 60 Pounds per Horse Power

H. F. Weighs Only 190 lbs.
30 H. P. Weighs Only 1200 lbs.
Cushman Engines have Throttle Governor and Schebler Carburetor, suring regular speed even on jobs of irregular loads, like sawing.
Their perfect balance also helps to make them steady, insuring musual durability and freedom from engine trouble.

The 4 H. F. and the 8 H. P. are mounted on trucks, if desired, and may be pulled around by hand. These are very useful engines, as besides doing all work heavy engines do, they may be attached to machines in the field, as 4 H. F. on grain and corn binders and 8 H. F. on hay balers. All over 4 H. P. are double cylinder, giving steadier power.

The Cushman is not a cheap engine, but it is cheap in the long run. Ask for free Light Weight Engine Book.

Cushman Motor Works

r fares werk, this is the fluid Binder Engine. 826 N. 21st St. Lincoln, Nebr



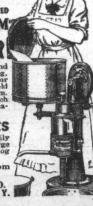
Before Buying Any Engine Ask These Questions How much does it weigh? If it weighs more than 60 lbs. per H. P., why?

American SOLID PROPOSITION to send w, well made, easy running, rfect skimming separator for 1,95. Closely skims warm or cold **Monthly Payments**

Bowl a sexitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

Western orders filled from Western points.

AMERICAN SEPARATOR CO. Bex 3061 Bainbridge, N. Y.



AGENTS WANTED

r safe and dependable 400 c. p. Akron as Lantern. Clear, brilliant, white light, times stronger than off double mantle, idea globes, won't blow out or break, mokeless, odorless, beautiful, economical,

AKRON LIGHTING SYSTEMS and portable lamps excel in simplicity, quality and latest improvements. Write for agency terms and our Handy Demonstration Outfit.

AKRON GAS LAMP CO. 635 South High St. Akron, Ohio



SING is the quality con-struction. Reinforced throughout with twisted steel. The steel rods get a tight grip in the cement—cannot slip. Blocks are set together with ends overlapping—brace tile against tile with less mortar exposed. Gives you a better looking silo—smoother wall inside—less chance for frost.

Write for Catalog If you can use a silo, you can afford a Lansing Vitrified Tile. Get our prices. Write today.

J. M. PRESTON COMPANY Dept. 309 Lansing, Michigan Also get our offer on Climax Silo Fillers and Bidwell Threshers.

Training The Fractious Colt By EPHRIAM GREGORY

many horses are ruined at this time. suits in this way I would resort to hob-Some learn to balk, some to kick or bles. I would not throw the horse, run away, or other vicious habits. All however, when he started. But should this represents a direct money loss. A simply raise one front foot-let him spoiled horse is just about equal to a stand on three legs for a while. I would dead horse-you can't sell him and you still be patient with the young horse, can't get much work out of such a and leave any rough treatment until horse. Either you don't do the work the very last thing. I would let him well so as to profit from it, or you get stand on three legs just for a moment it done at a high cost in labor and then let the foot down. If he started time when using such a horse.

ways. And all sorts of horses are colt stand too long at first. Just so he spoiled. But the sort that is oftenest stands still until you tell him to go. ruined during the breaking process is This shows the colt what you want the high-lifed or naturally fractious him to do and he will soon learn it. horse. And this kind of horse is the Then, after he has learned to stand most valuable. He is full of life and in the harness, you can begin teaching ambition, ready to get up and go at him to walk slow. For all horses any time-and able to keep on going should be taught to walk slow as well for a long time. Usually, the fractious as fast. And most horses want to walk horse is the most sensible, the finest slow just after starting up. Stop and looking horse and has large powers of rest for a moment, then start and let endurance. He is so valuable when the horses walk as long as they walk properly trained that we should be slowly and quietly. But the minute very careful and patient while training the colt begins to chafe and to plunge such a horse. This rule applies when ahead in a sweeping walk, stop again. working all young horses, but to the This operation repeated several times, fractious horse especially.

horse and will not permit it to form young horse to walk slow. in this way.

spoiled in quite a different way-by the colt has had plenty of practice. training him to travel too fast and by not training him to stand to rest. I know of dozens of such horses in our immediate neighborhood which are almost worthless but which would be he had had the right training.

Encourage Correct Habits.

walking fast. This doesn't hurt any- \$6.30, making a total of \$27.18. thing-nobody is going to get killed by

trying to make him walk slower and to for labor. I had the corn in a selfstop to stand and rest. But, too late. feeder and would take the milk to breaking such a horse would be to about all the labor was to deliver them make him stand on the road. Not to two miles to market. stop and fidget about for a minute, but The above is my experience with one to stand until told to go, and to stand bunch. I never before kept account quietly. Usually, quiet handling, with and was always one that thought it maybe a side line, and the colt tied would not pay to buy grain to feed. back to the old horse, will be suffi- The above result changed my mind and cient. He may not be bridle-wise as I am going to try it again.

yet, but he learns in a very few min-

WE hear a great deal of talk about utes that the bit is easier when he horses being spoiled in break horses being spotled in break- doesn't try to go. But this lesson must ing, and it is a fact that many, be taught. If I were unable to get retoo soon raise the foot again and make Horses are spoiled in many different him stand. But don't try to make the

with some gentle pressure on the bit, The fractious horse is the kind to is usually sufficient. But too much make a run-a-way. Fortunately, how- pressure on the bit irritates and worever, this doesn't usually happen. The ries the young horse so that he fights fractious horse very seldom develops against you and tries to forge ahead. into a run-a-away horse because people This might learn him to walk fastfear the vicious run-a-way so much although a very poor method—but not that they guard against it. They are to walk slow. Avoid too much presalways careful while breaking such a sure on the bit when teaching the

the habit, even if they have to resort After these two lessons are learned to such things as hobbles and "jaw- the next will be easy. A good, fast breakers." So, comparatively few of walker beside the colt and a little those fine high-lifed horses are spoiled encouragement always produces the desired result, especially if you are This kind of horse is most often persistent enough to keep at it until

PIG FEEDING PROFITABLE ON HIGH-PRICED GRAIN.

I recently heard that the farmers very valuable today if they had been around Brooklyn, Mich., and theretrained carefully. I have at different abouts were killing entire litters of times come into possession of some new-born pigs, believing that owing to such horses, to my sorrow. One had the high cost of feed it would not been badly overheated, another was pay to raise them. For their benefit, wind-broken, another was such a fool and not that I want to boast, I would to go that he wouldn't stop a minute like to relate my experience with eight unless he was unhitched. You had to pigs, four of which were born July 15 hitch up, jump in quick and let him and the other four were born about out until you got there, then jump out August 1. I weighed these pigs Decemand unhitch. The power of endurance ber 4. They weighed 1080 lbs., (135 of this horse was almost beyond be- (bs. each), and I valued them at \$8.75 lief. What a valuable animal, if only per cwt. I fed them for twenty-two days and during that time they ate 19 bushels and 19 lbs. of shelled corn at When we start to break a horse it \$1.08, and six bushels of shelled corn always tries to get away from us and at \$1.05, and 1,274 lbs. of skim-milk. to get rid of the harness. The mule I sold them December 26 for \$10.25 per kicks, the broncho bucks, the ponder- awt. net. After feeding them the 22 ous drafter simply twists and squirms, days the value of the original weight and the high-lifed roadster wants to had gained \$1.40 per cwt, so 1080 times run. But the man that breaks him to \$1.40 equals \$15.12. During the 22 days work usually has him fixed so that he they gained 518 lbs.; 518 times \$10.15 can't run. But he must do something. equals \$52.58, value of gain; \$52.58 So he pulls out to walk fast-just plus \$15.12 equals \$67.70; 19 bushels about as fast as he intended to run. and 19 lbs. of corn at \$1.08 cost \$20.88, And he does walk fast, and keeps on and six bushels of corn at \$1.05 cost

I don't know what skim-milk is vala horse walking fast. So he is allowed ned at ner cwt, but in this case it is to walk as fast as he pleases and as not more than fair to let it be worth far as he pleases. And he is allowed the difference of the cost of the corn to do this several times, never once and the value of the gain, or \$67.70 stopping to rest, before you become minus \$27.18 equals \$40.52; \$40.52 diaware of the fact that he isn't going vided by 1,274 equals \$3.18. You to slow down. Then you commence will notice that I have made no charge The first thing I should do when them when I went to feed my cows, so

DELEON SMITH . Hillsdale Co.

Feeders' Problems

A Ration for Growing Pigs.

me a better ration?

Hillsdale Co. G. M. P.

in this case. Then the feed is very and sold as feeding stuff. poorly balanced. Oil meal is a concenbran and skim-milk.

the free choice system, and it would C., the following report was submitted: be much better to substitute corn, bar-

ried to a polishing machine. This machine consists of several pairs of feltcovered rolls. The polishing agent, usually wheat middlings, is delivered on Kindly tell me where my feed ration is wrong for pigs averaging 40 to 60 lbs. Four weeks ago I put them on a self-feed of oil meal and bran of equal amount in weight, and fed milk and water for drink. Also gave them a trough of stock salt and now three of them have developed a case of piles. Is the feed too blame and can you give the feed too blame and can you give palm oil. The mixture of middlings and palm oil. The mixture of middlings and palm oil is then carried to a clean and palm oil is then carried to a cleaning machine and passed over vibrating Undoubtedly the ration used has not screens to remove the lumps of midbeen well suited to the needs of these dlings and oil and the larger pieces of pigs. Bran is not a good pig feed, be- iron and tin plate and finally over two ing too bulky and containing too much electric magnets which remove the fibre for growing pigs where it is made smaller pieces of iron and tin plate. a considerable factor in the ration as The cleaned mixture is then bagged

This feed has been under investigatrate very rich in protein, as is also tion by the Association of Feed Control Officials of the United States for the You would get much better results past three or four years and at a rewith self-feeder by what is known as cent meeting held in Washington, D.

"Your committee believe that the soley or some other carbonaceous feed, called refuse cleaned middlings consupplementing same with oil meal, sisting of wheat middlings and palm tankage or middlings fed in separate oil when carefully cleaned from slugs, compartments of the self-feeder so that bawls, splashes and slivers of tin or



"Pick and Top," Property and Pride of Ed. Davis, Kent County.

growing pigs do better when a portion factory and safe feeding stuff." of the grain ration at least is given in the form of slop, but we do not believe these pigs is an unbalanced ration con- process. taining both too much protein and too much fibre to make a thoroughly digestible combination.

In some extensive experiments conefficiency.

PALMO-MIDDS.

I am up against a question that I would like to have you answer as it might help some other subscriber as might help some other subscriber as well as myself. I have bought some "Palmo-Midds," with the following analysis: Crude protein 16 per cent; crude fat 6 per cent; crude fibre 7 per cent. Now what per cent of the above protein is digestible? As I would like to know how much I am stuck at \$35 per ton f. o. b. our station.

Clinton Co.

Palmo Midda

the manufacture of tin plate and is a mixture of, usually, wheat middlings and palm oil.

for the market, it is passed through a exports of bacon aggregated 23,592,000 bath of palm oil after receiving the lbs., comparing with 9,932,000 lbs. a coat of tin and then by a conveyor car- year ago.

the pigs could follow their own appe- tin plate and containing not above 0.2 tites in making a selection of feeds. per cent tin, can, in the light of feed-A great many feeders think that the ing tests made, be considered a satis-

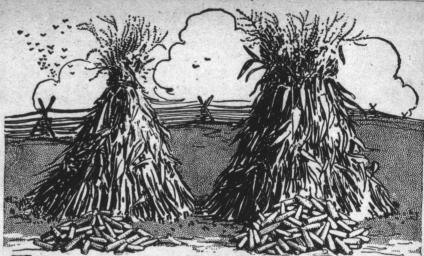
A. J. PATTEN. Mich. Ag. Col. Editor's Note.—The digestibility of this is essential to good feeding meth- the protein in the middlings is prob-Undoubtedly the trouble with ably not altered by their use in this

SHELTER THE BROOD SOW.

Extremes of cold and heat injure ducted at the Iowa College last year hogs more than any other class of doit was determined that pigs fed on self- mestic animals, and it is especially feeder under what is known as the free necessary to furnish good shelter for choice system—that is, being permit- the brood sow. The shelter may be ted to consume such portions of the good without being expensive, but it several grains fed as their appetite de- should be warm and ventilated, dry manded-made, the best and most eco- and so arranged that as much sunnomical gains, and that the grains con- shine as possible may get in to keep it sumed conformed quite closely to a dry and healthy. Sunshine is a great theoretical balance of nutrients. A germ killer, but should be aided by change of feed, such as suggested lime sprinkled where it will help conwould unquestionably reduce the cost trol cholera and other diseases. Don't of the ration and add greatly to its cut off the returns from the mortgage raiser by supplying wet floors, filth, and dark quarters. Individual hog cots and houses serve a good purpose at farrowing time.

Mo. Ag. College. L. A. WEAVER.

Within a short time pork has sold in the Chicago makret around \$28 a barrel, the quotation a year ago having been \$19; while similar advances have taken place in lard and short rib sides. The biggest bullish influence acting on prices of provisions is found in the continued enormous demand from Eu-Palmo-Midds is a by-product from ropean importing countries. During a recent week exports of lard from our Atlantic ports amounted to 13,089,000 lbs., comparing with 4,921,000 lbs. for In the process of preparing tin plate the corresponding week of 1915; while



Expense \$200 Per Acre

Above we show the yields from two different parts of a single field. One produced forty bushels of corn to the acre without fertilizer. The other produced eighty bushels of corn with fertilizer. The fertilizer expense per acre was only \$2.00.

Based on the present price of corn, this fertilizer netted this farmer \$38 more profit from each acre than from fields not fertilized. Is there any other investment which yields such returns as this?

Mr. Frederick Graff, of Ionia, Michigan, raised 150 bushels of corn per acre at fertilizer expense of only \$4.

Mr. L. J. Stroutzenberger, of Prout, Ohio, raised 125 bushels of corn and 86 bushels of oats to the acre at a fertilizer expense of \$2.

All of these men use Nature's own fertilizer-

Lake Erie puts back into your soil the elements each crop extracts. Crops, as you know, take out of your soil eleven different plant foods. All but three are present in sufficient quantities to practically lasts forever. But these three, Ammonia, Phosphoric Acid and Potash, must be supplied each year. Otherwise, there comes a time when there is not sufficient readily available plant food in the soil's pantry to give the young plant a quick start and grow the stalks of corn and plump the kernels.

You can no more continue to draw out your plant food without putting it back than you can continue to draw upon your bank account without making any deposits.

Lake Erie Guano contains fish—the richest plant food that Nature ever created. It contains Nitrogen, (Ammonia) informs that chemist cannot imitate. This Nitrogen is in an organic form, the form in which plants use it. It does not have to change its nature in order to feed the crop. There is no waste It remains in the soil—always available—feeding the crop as growth unfolds wants. It cannot be washed away.

This fish is combined with tankage, with Bone Black, Phosphate and Potash, allowed to stand and season for months and contains the combined plant foods that will nourish each plant alike,

The free acid is neutralized so that Lake Erie Guano cannot sour your soil or use up the lime in your land, instead it sweetens the soil and makes it more productive

Unlike dry mixed fertilizer, in which the materials are simply mixed together, in Lake Erie Guano these foods are combined just as floor, sugar and eggs are combined in a good cook's cakes. This fertilizer comes to you in perfect mechanical condition. It will not clog your drill

Start this year to get bigger yields the "fertilizer way." Can you afford not spend \$2 to \$4 per acre when it means almost doubling the earning capacity of your farm?

Write today for full information about Lake Erie Guano-made with fish-and get name of our dealer in your locality. Dealers wanted in unoccupied territory.

THE JARECKI CHEMICAL COMPANY Sandusky, Ohio

6 REASONS WHY

simply mixed together.

Acidity neutralized. Sweetens your soil

Perfect mechanical condition. Goes thru drilf without clogging.

Has produced record-breaking yields at a big profit.





CUTTING WOOD MADE EASY WITH OUR DRAG SAW orth its weight in gold to any farmer who has timber to cut. One at whole te where you have no agent. We also manufacture a full line of Horse wers, Wood Saws. Well Machines, and Saw Mill Machinery.

D and prices. R. R. HOWELL & CO., Mfrs., Minneapolis, Minn.

Easy to Turn-Why?

BECAUSE the women-folks can turn as slow as they please, and still get all the cream!—true of no other separator. Most separators have to be turned 55 to 60 turns a minute or they lose cream. But if you want, you can turn a Sharples at only 38 or 40 revolutions per minute and still get a perfect skim-for the wonderful Suction-feed drinks up the milk only as fast as it can perfectly separate it. Again, the bowl hangs from a single frictionless ball-bearing running in a constant bath of oil. That, too, means easy turning. The bowl has no heavy discs in it-little power is required to set it spinning.

CREAM SEPARATOR

-is the only separator that will skim clean at widely-varying speeds

is the only separator that delivers cream of unchanging thickness-all speeds

is the only separator that you can turn faster and finish skimming quicker

is the only separator that has just one piece in the bowl-

no discs, easy to clean is the only separator with knee-low supply tank and a once-amonth oiling system

Made and strongly guaranteed by the largest and oldest separator factory in America. Repair cost is practically nothing-so ruggedly built that many a Sharples has not cost one dollar for repairs in fifteen years. Over a million users—in every dairying country of the world. Send for catalog to Dept. 18

The Sharples Separator Co. West Chester,

Also Sharples Milkers and Gasoline Engines

Branches: Chicago San Francisco Portland Toronto





Will Solve Your Silo Problems They're built to meet the exacting farmers' needs and

are the best in design, material and workmanshipcombining every desirable feature a silo should have and embodying the "know how" acquired through more than twenty years experience in silo building.

Glazed Tile Silos

This construction is fire-proof, frost-proof, storm-proof, decay-proof, vermin-proof. Galvanized reinforcing. Requires no paint, no upkeep expense or repairs. First cost is the last cost—a written guarantee goes with every one.

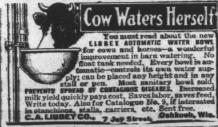
Wood Stave Silos

Your choice of four time-defying woods. The Kalamazoo is the only factory Your choice of four time-defying woods. The Kalamazoo is the only factory where this outfit is manufactured complete from the raw material to the finished product. Our silos are quickly and easily crected by inexperienced home labor. All Kalamazoo Silos are made with Galvanized Steel Door Frames, continuous doors, forming safe ladder entire height of silo.

Write today for our free descriptive booklet, and early sales plan.

& SILO COMPANY, D.





ROUGH ON RATS" ends RATS, MICE,

Efficient Use of Milking Machines

ment of Agriculture.

to be the elimination of unnecessary \$7.34 in herds of fifty or more. labor. Herds that normally required milk and otherwise care for the herd, size of the herds. the labor of the third milker required under the hand system being dispensed milking machines must be operated by since depreciation, fuel consumption, ited during the studies believe that the repairs, interest on investment, etc., milking machine has no effect one which must be charged to the milking fare of the herd.

The Time and the Cost.

Chenango and Chautauqua counties, N. greatest speed is made when one man Y., and among mixed dairying and operates and strips after two units, farming enterprises in Lenawee coun- each of which milks two cows. ty, Mich., Fulton county, Ohio, and Mcaverage time required to milk a cow and machine milking on farms with by hand was a fraction over seven herds of different sizes.

HAT milking by machinery, com- minutes, and by machine a fraction unpared with hand milking, is less der five minutes. In herds of over fifty expensive, in general, in herds cows, however, the time required to more than fifteen cows, and more milk by hand was a fraction under sevso in smaller herds, is indicated in re- en minutes and by machine 4.15 mincent studies made by farm manage- utes. In milking by hand the average ment specialists of the U.S. Depart- cost per cow in herds of fifteen cows or less was \$10.91 a year, as against One of the most important condi- \$10.45 in herds of fifty or more. When tions affecting the economy of milking machines were used the cost was large herds with machines was found \$11.77 a year in the smaller herds and

The value of the labor replaced by three men for milking by hand, only the milking machines as found to vary two of whom were needed to feed and from \$2.63 per cow in herds of fifteen care for the animals, required only two cows or less to \$8.33 per cow in herds men to milk by machine. The available of more than fifty cows. The addition labor and the labor requirements are of time available for field work due to therefore better balanced in the latter use of the machines was found to vary case, since the same two men may from 1.5 to 5.1 hours, according to the

Attention is called to the fact that with. This tendency toward economy competent operators and that stripping when machines are used can not result by hand after the machine is essential in actual economies in all cases when if satisfactory results are to be obtaina small number of cows is milked ed. The majority of the farmers visare responsible for considerable costs way or the other on the general wel-

The Fastest Way.

Studies of the comparative efficiency The studies were made in typical in- of various combinations of milking tensive dairying regions in Delaware, units and operators indicate that the

The following table shows the data Henry county, Illinois. It was found gathered in the studies in regard to that in herds of fifteen cows or less the the comparative annual costs of hand

		Milk	ing Ma	chine.			Hand	Milking.
	ment (per	of gas and oil (per	of repairs.	Depreciation (per cow).	cost.	cost (per	No. of	Labor cost (per cow).
15 cows and less. 3 16 to 30 cows 7 31 to 50 cows 4 51 cows or more 1	$\begin{array}{ccc} 2 & .79 \\ 1 & .61 \end{array}$.84	.20 .25	1.49	7.31	\$11.77 10.14 9.22 7.34	63 16	\$10.91 10.26 10.11 10.45
Average15		\$0.86	-		-	\$ 9.93	-	\$10.41

Dairy Problems

What Grain to Feed.

We can only buy corn, bran, cotton-seed meal and oil meal in the home market.

W. H. S.

It is practical to keep cover without

You can get good results by feeding two pounds of cottonseed meal once a day and two pounds of oil meal once each day. I fed this ration all one winter and got good results. It contains a little more protein than necessary, but there is not the difference in price now between protein and carbohydrates that there once was, so it would make little difference in the cost.

I would prefer for several reasons to feed two parts corn meal, two parts bran, and one part oil meal, mixed together. It gives more variety and furnishes the food nutrients in more nearly the correct proportion. To do this best the cows should have about one pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain, or would it be more pound of grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain to every three or four most of the grain three or four most of the grain to every three or four most of the grain three or four most of the grain three or four most of three grain three or four most of the grain three or four most of t pounds of milk produced.

How Many Acres Per Cow?

What is your opinion as to amount of land necessary to keep a cow for one year, if she is pastured during the summer? If she is kept up all the year and fed? Would the feeding of cows the whole year, without pasture, be profitable to the farmer? Do you think a cow would do well the year round on ensilage alone, or with a little roughage added?

So many conditions enter into this

acres, 40 acres will keep 20 cows. That they would not take up much land.

is, the right kind of a forty, and the I have good clover hay, oat straw right kind of a man to run it. Some and silage to feed each once a day. dairymen have even done better than grain ration to feed with above to fresh milch cows for milk production? ion that one can keep a cow to the

It is practical to keep cows without pasture. They can be kept healthy and profitably, even more profitably than on pasture. The labor problem here is of great importance. No one can tell just how to do all this. It must be worked out by one's self. Commence with an ordinary number of cows and gradually increase in number as experience teaches. Remember that corn silage and a legume hay should be the basic foods. In intensive dairying I think it more practical to purchase a part of the grain.

profitable to keep cows and feed ensilage largely? Would you recommend either of these plans for a small farm?
Tuscola Co.

B. W. F.

I have no doubt that hog raising could be made fairly profitable on a farre of 34 acres. But I believe you would have a greater chance for success with dairy cows and then keep hogs to utilize the skim-milk. Chickens are also a splendid auxiliary to So many conditions enter into this dairying. In fact, cows, hogs and question that it cannot be answered chickens are a combination that is with any degree of satisfaction. It near hard to beat on a small farm. If near lv all, like everything else, depends on a market some market crops could also the man, what man tries to do hard be produced, or strawberries or small enough he can generally do. Many fruits of any kind would fill in, utilize dairymen have kept a cow to two labor and bring an added income, and

HOW MUCH MILK SHOULD AN ACRE OF LAND YIELD?

(Continued from first page). herd without any additional expense for supplemental grain feeds.

A Cow to Four Acres.

Allowing an average yield of twelve tons of corn silage per acre, three tons of alfalfa hay, two and a half tons of clover, fifty bushels of oats and one and one-half acres of pasture per cow we find that it is possible to provide the following ration for each cow in the herd from four acres of land. Six tons of corn silage, or fifty pounds per day per cow, twenty-five pounds of alfalfa hay, or twenty-one pounds of clover hay, and seven pounds of oats per one and one-half acres of pasture per a ration, while liberal for the average cow, could, undoubtedly, be made more efficient by feeding two pounds of linseed meal or cottonseed meal to each Under such a system of growing feed and hold her at maximum production amount of feed. throughout the year.

Good vs. Poor Cows.

This brings us down to the problem means approximately the same as doub-

and they cannot be grown on impoverished, poorly farmed soils. Good cows and the best of care and surroundings cannot return large profits and remain in vigorous health unless they have an abundance of palatable and nutritious farm-grown feeds to balance up the cost as well as the deficiencies of the purchased feeds of commerce. Years ago it was a question of good cows rather than of good feeds. Experience soon proved, however, that a cheaper and better supply of farm-grown feeds must be combined with an efficient herd of cows if the best results were attained.

"More Milk to the Acre."

More milk to the acre should be the slogan of every dairyman. Build up the soil by the use of fertilizers, maday per cow for 240 days, and leave nures and soil building crops. Breed up a herd of good cows and feed them cow for the remaining 125 days. Such liberally and economically, making such feeds as alfalfa, clover and corn silage play a more important part in the ration. This is the way to produce more milk to the acre. It is much eascow during the period of full milking. ier, generally speaking, to build up these two factors than it is to make crops four acres of land should support one cow produce as much milk as two an efficient dairy cow in good shape cows usually produce from a given

Doubling the production of feed crops, and improving them in quality,



A Jersey Parade at Columbus, Ohio.

of finding the best cows for converting ling the milking ability of the cows. cannot lift the dairy farmer to the time. cheerful heights of prosperity so long as he feeds them the crops grown on eight or ten acres of land, or depends any, better off financially at the end of ton made a report on his investigalow-producing cows from the crops milk. Among his items were: Cost of the farmer who has grown his feed on milk; care of the cow; housing of the a smaller acreage has accumulated a cow; investment, interest on investstore of humus and nitrogen in his soil ment, value of cow; bedding per cow; which greatly enhances the value of ice for cooling the milk; coal or wood his farm for crop production.

Soil Improvement is Fundamental. Soil improvement must precede all as veterinary service. other fundamental lines of betterment. He declared that the ordinary dairy

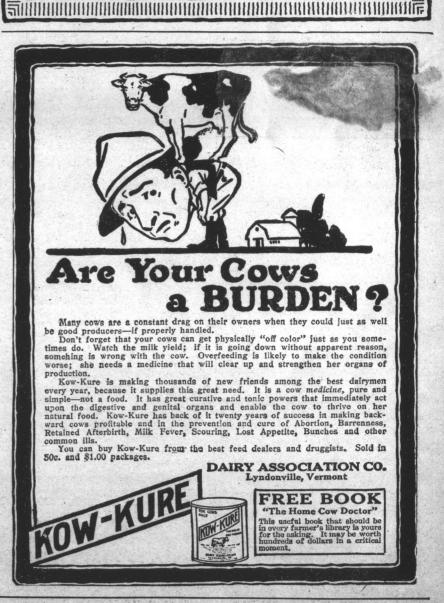
our supply of raw materials into fin- Crop production is the fundamental ished products. The low-producing cow problem of every sound system of with a 4,000-pound of milk per year dairy farming. Aside from furnishing yield means approximately 1,000 palatable and highly nourishing rations pounds of milk yield per acre per year, for the cows, such feed crops as alfalfa, while the high-producing cow with a clover and grasses, pay handsomely as 10,000 pound ofs milk per year yield manufacturers of soil fertility. Havmeans approximately 2,500 pounds of ing the peculiar power of obtaining milk per acre yield per year. Under their supply of nitrogen from the air the corn, oats and timothy hay crop ro- and mineral elements from below the tation the 10,000 pounds of milk per depths of the feeding zones of other year would produce less than 1,000 crops they not only add to the store of pounds of milk per year per acre from available plant food in the soil but the home-grown feeds, while the 4,000 they furnish the best of hay and paspounds of milk per year cow would turage for the cows. This added ferprobably fall below a 500 pounds of tility means a gradual increase in crop milk per acre average. The 4,000 yields, a great improvement in the phypounds of milk per year cow under the sical condition of the soil and an incorn, oats and alfalfa rotation would creased value of the farm at the end produce approximately as much milk of a series of years. The best test of per cow under the corn, oats and tim- any system of dairy management and othy hay rotation of crops. These fig- the accuracy of its accounting is found ures are not exactly accurate, but they in the increased value of the entire will serve to illustrate the fact that plant and equipment when a portion of feeding cows that have the capacity to the earnings have been converted into produce 10,000 pounds of milk per year betterments during a definite period of

FIGURING ON THE COW.

upon the grain markets for his supply At the "Milk Conference" recently of protein materials. He is little, if held in Chicago, Professor H. E. Horthe year than the farmer who feeds tions relative to the cost of producing grown on four acres of land, besides man labor in milking; handling the for heating water, and a miscellaneous column for expenses not foreseen, such

Of first importance is a productive soil. records are very incomplete and that Large crops, produced at a reasonable many items were left out, as, for incost, mean a cheaper supply of feed, stance, the cost of testing the cow for





Nine Million People Wear

"Ball-Band" Rubber Footwear.

Can you imagine it? Why do so many people prefer "Ball-Band"? Because of greater satisfactionbetter fit, more comfort and more wear at less cost per days wear.

Rubber Footwear has a mighty strong reputation behind it and long wear and comfort ahead of it.

Buy "Ball-Band" Rubber Footwear at any of the 55,000 dealers who sell and recommend it. You can't go wrong if you look for the bright Red Ball-the mark

on "Ball-Band" Rubber Footwear that assures full value for your money.

Ask your dealer for a pair of the new Weight Rubbers. They are of the highest quality and come in sizes for men, women and children.

Write for our Booklet "More Days Wear"

which shows the many different kinds of "Ball-Band" Footwear.

MISHAWAKA WOOLEN MFG. CO. 319 Water St., Mishawaka, Ind.

"The House That Pays Millions for Quality"





butterfat, which he estimated at \$1.50 per cow per year.

He had been carrying on correspondence with men owning dairy herds and had obtained from many of them estimates of the cost of keeping a cow a year. These estimates varied all the way from \$27.40 to \$94 per cow per year. This great variation he took to be largely indicative of error.

The elaborateness of the record he would have kept was criticized. An Illinois farmer declared that the farmer has no time for keeping such elaborate records. He was keeping such records, but had to do it at night, and it was sometimes near midnight when he completed his book-keeping work. He said that if he did this work in the daytime, he would have to hire an extra hand on the farm to do the work he had been accustomed to do. "More over," he said, "many of the farmers are not educated along the line of keeping books, and book-keeping is too great a labor for them to assume."

Another farmer declared that very little book-keeping was necessary, except that connected with the weighing and testing of milk; but that these two duties must be kept up, if a man was to know what kind of cow he was keeping.

One man asserted that in dairying "Ball-Band" Light the cost of raising each crop fed the cows should be kept a record of. It was urged against this that what a feed would sell for, be it hay or corn or roots, was what it should be figured at in the dairy expense book. general proposition this is all right. But there have been years in the past when, as all farmers had all the feed they could use, there was no sale for feeding materials. It is evident, in such a case, that the cost of feeding the cow could not be put down at nothing, but would naturally be what it had cost to raise the feeding crop. So in dairy cost records, as in everything else, circumstances alter cases.

How poor must a cow be to be too unprofitable to keep? The drift of discussion at the meeting was that the point was around 3500 to 4000 pounds of milk. It was remarked, however, that if all the cows in the country that give less milk than that were killed, the milk supply of the country would be decidedly short.

H. F. THURSTON.

VALUE OF CORN SILAGE.

What is the value of corn silage, and what amount would there be in a 12x30 silo, the silage being 15 or 20 feet deep?

Wayne Co.

G. S.

The market value of corn silage can only be estimated by comparing it with other feeding stuffs, because it is not bought and sold as other feeds are. The real cash value of anything is

what it will sell for on the market.

Take the food analysis of silage and compare it with timothy hay and we find it has about one-third the value, ton for ton. This, however, does not take into consideration the value of the succulency of the silage, and this certainly has a value, providing one has no other succulent feed. Good corn silage is usually considered worth \$3.50 to \$4 per ton. Some say \$5.

On the average, a cubic foot of silage is estimated to weigh 40 pounds. Near the top of the silo it will not weigh as and towards the bottom it will weigh more. I think it safe to say that the botom 15 feet in a 30-foot silo will weigh 50 pounds per cubic foot. Find the cubical contents in feet and multi-COLON C. LILLIE. ply by 50.

Immediately after separating cream should be cooled to at least 50 degrees Warm cream should never be poured upon cold as the temperature of the lot is raised and bad flavors may PAPEC MACHINE CO.
50 Main St., Shortsville, N. Y.
25 Distributing Stations

Mention the Michigan Farmer when writing Advertisers

Tesuit. It is essential that the cream be stirred frequently to insure uniform ripening. If the cream is left undisturbed, the fat rises the same way as it does in milk. As a result the cream is full of curd particles or it becomes "lumpy."



DAIRY OF H. G. ANDERSON & SON, JACKSON, MINN.

"It is now about three months since we got our hired man. His name is HINMAN and tight here, want to say he is the best ever. He miks three cows in the time that took to milk one; and that is not all; the work is done with neatness and dispatch. No running off on a Saturday evening and gone till Monday; always on the job seven days every week.
"One more great advantage; you know the dairy cow is quite different from the society woman; she

H. G. Anderson & Son

Hinman Milkers Will Surely Dairy Profits Will Surely Increase

Because they save where the only saving is possible in a dairy. You can't save on feed without losing milk yield, but you can save on hand labor. A 3-unit outfit costs less than wages and board of one hired man for six months. So simple a boy can milk 18 to 25 cows an hour.

No complicated pulsating mechanism -- no air pipe lines -no vacuum tanks

Just a simple combination of pump. vacuum in valve chamber and natural action teat cups.

SIMPLICITY that means LOW COST

"Nine Years' Success" Valve Chamber

The Hinman soon pays for itself and adds its first cost to

profits every six months to a year.

Big Illustrated Catalog FREE. Write for it now and learn why you cannot afford to put off buying the HINMAN another week.

Hinman Milking Machine Co., 73-83 Elizabeth Street, -:- Service Dealers Everywhere

PRICE CUT IN TWO FOR 1917

"Nitragin" tested side by side for years with other seed and soil inoculator years with other seed and soil inoculator has proven itself to be the best legume seed inoculators has proven itself to be the best legume without first inoculating the seed with "Nitragin."

ORDER IT OF YOUR SEEDSMAN or direct from us. Ask us for particulars and nearest dealer.

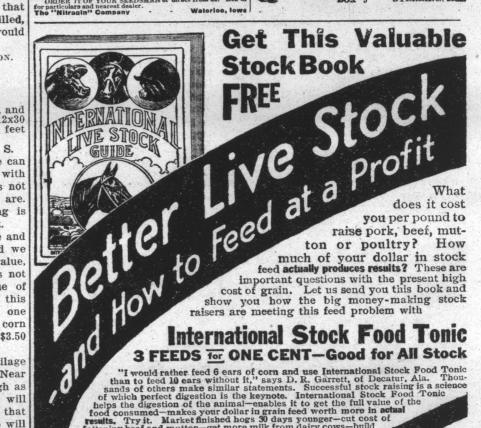
The "Nitragin" Company

Waterloo, James



"More Potatoes"

From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate, A simple, strong, durable machine. Write for CATALOG, price, etc. A. J. PLATT, MFR. BOX J STERLING, ILL.



"I would rather feed 6 ears of corn and use International Stock Food Tonic than to feed 10 ears without it," says D. R. Garrett, of Decatur, Ala. Thousands of others make similar statements. Successful stock raising is a science of which perfect digestion is the keynote. International Stock Food Tonic helps the digestion of the animal—enables it to get the full value of the food consumed—makes your dollar in grain feed worth more in actual results. Try it. Market finished hogs 30 days younger—cut cost of fattening beef and mutton—get more milk from dairy cows—build muscle in won't horses. Write today for this iREE Stock and Poultry Book—worth hundreds of dollars to stock raisers. Filled with helpful money-making suggestions—contains articles written by the foremost authorities on live stock. Write today.

Name

INTERNATIONAL STOCK FOOD CO. Department G

MINNEAPOLIS MINN

My dealer's name is

Address

Fill in number of stock you own

Sheep Cows Horses Hogs_

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

PROMINENT among the subjects which are attracting the attention of people who live in the rural communities and villages, is that of rural community development. The conditions in the rural districts, and country. the surrounding country is necessary

Rural Community Uplift

By N. A. CLAPP

villages are a necessity for the ideal all the people of both village and The teacher and the preacher may be

for the support of the villages. The be sustained and do their best work brought in contact with the patrons of best conditions are found where the when they can co-operate with the the school and the members of the perfect manner, may seem visionary, people of the villages work in conjunc- church, the Sunday school, and the day church congregation. The preacher but there is a community at and around tion with those in the country, and the school. No one organization can flour- may be and will be broader minded if Wixom, in Oakland county, that stands dwellers in one place are on a common ish as well alone and do as good work he hears and considesr some theories as an example and illustrates what can level with those of the other. The com- as is possible if working in connection which are not strictly theological, for be accomplished by the co-operation munity organizations can be best sus- with the others. The church and he will realize what constitutes the of organizations in that community. tained by the co-operation of all who school are necessary to give zest, life tenor of thoughts of those who are At Wixom there is a church well sup-

of more practical value to the school The Grange and farmers' clubs can and the church if they are frequently munity.

perplexities of the farmer's busy life. If the teacher is well up in science which may assist the farmers in solving some of their intricate problems in biology, physics, botany, and chemistry he can be of great value if he will become one of the helpers in the com-

To some, this plan, outlined in an im-

are vitally interested in the welfare of and polish to the other organizations. heavily burdened with the cares and ported, a school well managed, a

WORLD EVENTS IN PICTURES



Rich Oil Wells of Rumania have Fallen Into the Hands of the Central Powers.



Troops of the Central Powers Cross the Danube on Army Pontoons.





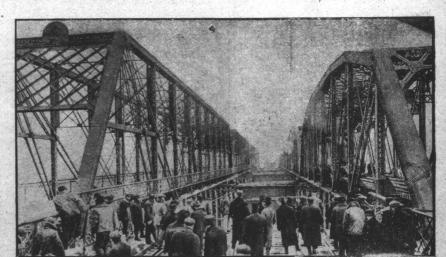
A Charming Bonnet for the Coming Switzerland's President and Vice-President Promise to be Important Personalities in Prospective Peace Conferences.



Belgian Refugee Children at Ellis Island, New York.

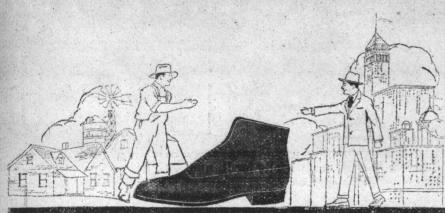


Kaiser, in Foreground. Reviews Troops Before Verdun.



Replacing Old Railroad Bridge at Omaha with New 11,200,000-pound Structure which was Moved into Position in Fourteen Minutes.

Copyright by Underwood & Underwood,



Hirth-Krause Dress Shoes Rouge Rex Working Shoes

Look Good and Are Good

THETHER your need be a dress shoe or a working shoe, the greatest amount of satisfaction to be derived from the money invested comes from Hirth-Krause shoes.

Just slip your foot into either a Hirth-Krause Dress Shoe or a Rouge Rex Working Shoe and know what real "foot comfort" really is. And when you wear them, that "foot comfort" will be more apparent than ever — and they'll wear, too — that's what they're made to do.

The shoe illustrated above is a mighty neat shoe and one that is a pleasure to wear, and is typical of the style and character to be found in all Hirth-Krause Dress Shoes.

We will send the name of your nearest dealer at your request.

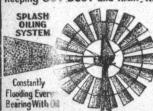
HIRTH-KRAUSE COMPANY 1-18 IONIA AVENUE, S. W. GRAND RAPIDS MICHIGAN



Mark of Quality noes for the Man Who Works

My New Concrete Mixer Offer Batch Mixers 朝I堅 Up Concreting In Your Section Build Your Own Concrete Mixer-

SELF-OILING WINDMIL With INCLOSED MOTOR Keeping OUT DUST and RAIN-Keeping IN OIL



SUPPLY REPLEN-ISHED ONLY ONCE AYEAR

DOUBLE GEARS - Each Carrying Half the Load Write AERMOTOR CO. 2550 West 12th Street CHICAGO

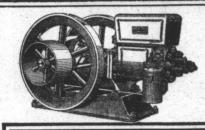


Easily put on any horse or tractor plow. THOUSANDS IN USE. . Low price. Address—

The KRAMER Rotary Harrow Discs, levels and pulverizes at one time. Quicker seed germination-brings bigger yields.

Folder Free — Write.

KRAMER ROTARY HARROW CO. Dept. 12 MORTON, ILLINOIS



Kerosene Oll. Gasoline and Gas engine to earn its ow

You Don't Have To Pay War Prices! 12 H-P, \$191.50 16 H-P, 265.50 22 H-P, 369.90

DIRECT FROM MY BIG FACTORY

90 DAYS' TRIAL Every engine I send out must make good all I guar-antee. No need to pay double my price for any good engine, or take an out-of-date engine for any kind of a price. Let me show you how to figure what an engine is worth and

as an engine is worth and
How To Know Better Engines
newest book helps you choose a safe and value-received
ine - How to make simple tests - and all about valve in
d motor. Send me your address today. Just a postal
d will bring this newest and latest book Geo. E. Long, OTTAWA MFG. CO. 1367 King St., Ottawa, Kansas

and practical.

These organizations have co-operat- for premiums. ed and have held five annual fairs of have been a pronounced success.

Each and every organization elects a committee to work in conjunction of which receive much attention. with the committees of the other ormittee." This "federated committee" compete for them. The money for the villages and cities. general prizes is raised by charging a of July and on fair day.

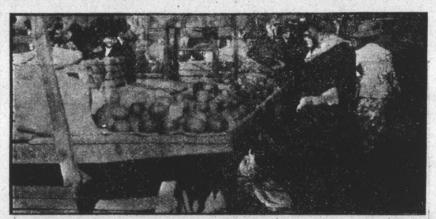
bles, fruits, poultry and sometimes live secure the greatest benefits.

Grange well attended, and a live Farm- stock. In the hall is exhibited articles ers' Club which, for about twenty years of various kinds shown by farmers' has wrestled with problems agricul- wives, rare and ancient specimens, tural, horticultural, biological, econom- school children's work and various othical, political, educational, theoretical er interesting things. Several schools in the surrounding districts compete

In the afternoon of the fair day one day each. Every one of those fairs there'is a program carried out consisting of oratorical contests, essays, orations, set and impromptu speeches, all

A lecture course is maintained which ganizations. These committees consti- is so well patronized that it is more tute what is called a "federated com- than self-supporting. One of the advantages of the lecture course is the forms the advisory board that plans fact that remarkable talent is brought and executes the work of the combin- within the reach of many who would ed organizations. They make arrange- never be able to avail themselves of ments for the fair and give an oppor- the privilege of seeing and hearing peotunity for the church, the Sunday ple of unusual ability were it not for school, the day school, the Grange and the course which brings entertainers the Farmers' Club to participate in and of rare capability to them. It is safe enjoy the advantages of the "show" to assert that some of the lecturers and compete for prizes. All the organ- brought by the lecture bureau are the izations offer prizes and individuals equal of the best met with in the large

Other communities can take pattern, nominal price for dinner on the Fourth if they will, and enjoy the advantages made possible by first organizing the The exhibits are made up of various different branches of society in their farm products, such as grains, vegeta- communities, and then co-operating to



Local Fairs Have a Big Influence on the Improvement of Our Products.

Putting It In Verse

JACK DOG.

BY CORA A. MATSON DOLSON. Oh, when is the happiest time for Jack? I am sure it is when his master comes

back.
Though he may be gone but a night and a day,
Jack thinks him a very long time away.

And Jack knows his step when he nears the door,
And leaps in wild joy round the kitchen floor;
Though he very well knows while master is gone,

He must keep an eye on whatever goes on.

And you may be sure while he is on

watch, He'll know if a strange hand touches the latch;

When we come to the door, his master will say,
"Our callers are friends; good Jack, keep away."

Then, with a wag of his tail, by the stove he'll sit down So kindly we never could give him a

But woe to the man if he plans, any day,

Harm to mistress or baby while mas-ter's away.

LET'S PLAY FAIR.

These days we're living in are strange, From olden ways we've had a change. 'Tis well perhaps for don't they say Variety makes life more gay. BY OLIVE E. LOCKWOOD.

Great cities throng our land so fair, And busy are the people there. Their industries are famed afar. Some good, some bad their people are.

The farmer also in these days Is taking on some city ways;
But some things he don't understand
About these city people grand.

If this great war makes prices high On everything that farmers buy— On flour, on clothes and rubber goods, On shoes and leather, bonnets, hoods,

On bobs and sleds, and shot and shell, And these the farmer loveth well.

If cattle, sheep and hens are high And feed with them is on the fly,

Why does the city man complain
When the price of butter's on
gain?
Does he ne'er stop to reason well
That farmers buy as well as sell?

If paper and coal go out of sight, Of course, they think it isn't right, But when egg prices pay for feed They boycott them. Oh, yes, indeed!

The price of gasoline may rise And go asalling to the skies; But still the cars go whizzing by No boycott there! I wonder why!

From early morn till late at night The farmer works with all his might And scarce a man is to be found To help him cultivate his ground.

The city men may like to work. But from the farmer's task they shirk; Just one day's work enough for them, And to the city they go again.

Oh, "Beggars must not choosers be,"
"Use well the hand that feedeth thee,"
These maxims by some wise old sages
Have proven true through all the ages.

So use the farmers well, my friends, On them the world's success depends. They get small pay for what they give, And on their bounties we all live.

THE TYRANNY OF THINGS.

BY FLOY S. ARMSTRONG. Things that we could have, Things that we might have. Things that we should have done, Are Things that haunt us With glints that taunt us, Of Things we might have won.

Things that we could not, Things that we would not, Things that we did not do, Are Things that vex us, Cheer or perplex us, Things for content or rue.

Things that are Nothing, Things that are Something, Things that we do or don't, Are Things that make us Or Things that break us, Whether we will or won't.

"Mister 44" E. J. RATH

the roof and handed him the boughs he knows. one by one as he thatched it thickly. new and unfamiliar. A foot deep he tion not a soul knows except you." piled the balsam-bed after rolling a log across the entrance to hold the earth," she commented. boughs securely in place.

fire-wood Sadie carried it by the arm- because he knows I received a teleful, heedless of scratches on her arms gram, is likely to conclude that I must and damage to her clothes. She was have left Deepwater by train on some eager to be doing something, and tire- urgent business. So he's not likely to Stoddard dragged heavy logs look for me." from where they had fallen in the woods and added them to their store. They could afford to be prodigal in because you asked me not to hold any fuel, for the island was generous.

This labor ended, he allowed himself a pipeful of tobacco and resumed fishing. He also found leisure to do some seen either you or me since dark last thinking, an occupation which, howev- night. Nobody knows we started for er, brought him no particular satisfac- the hotel; nobody knows what haption nor ease of mind. True, they were doing finely so far as immediate needs for us, except Larry, perhaps, who were concerned: but beyond that their doesn't know where to look; while nosituation was wrapped in the haze of body has the least idea where to look, uncertainty

Sadie, too, was thinking, but wholly been swept from its moorings by this sudden plunge into the heart of her

to us?"

'Why, no," she answered slowly. "Anything bad going to happen?"

about how we're going to get off this are not very likely to have visitors."

I've thought of it for a minute. Will anyhow." it be any trouble? Won't somebody come and get us,

"Who, for instance?" he inquired. "Maybe your camp-mate, Mr. Livingston, might."

"He hasn't the least idea what's become of me. The last he saw or heard of me I was on our own island back about three-quarters of a mile, and in the Northeast Arm."

he? He knows you started for the railroad first."

"No; he doesn't."

"Didn't-

Sadie hesitated. Stoddard waited. "Didn't he know you were goin' to meet me?"

"He never heard of you, Sadie."

her thoughts.

"I just sort of took it for granted you told him," she said.

It was difficult to explain to Sadie just why he had not informed Larry Livingston of the letter found in a that's all.' pocket and the events to which it led; it was impossible, in fact.

"Well, you see, Sadie, it was just a I don' know the answer." private business matter between you and me," he said after a pause. didn't feel I had a right to show him and smiled cheerfully. your correspondence. There was nothing for him to do about it, anyhow; it ted. "But nothin' to worry about, I was my affair. So I said nothing."

"In understand," she nodded. This respect for the privacy of her

reasons.

went on. "John-the Indian-knows Why, I think we're fixed fine!" that I mailed a letter and received a telegram. That's as far as his information goes.

"Billy Mason, the station-master, ed you to know all the facts." knows I was at Deepwater yesterday

Sadie helped to gather balsam for evening, and that- Weil, that's all

"The conductor of the train you The little house, as she called it, arous- came on knows that you got off at the ed her unbounded enthusiasm, and also lower station and that he informed me filled her with a sense of possession of that fact. But where I went and that delighted her because it was so what I did after I left Deepwater Sta-

"Just like you'd dropped off the

"Exactly. All Larry and John know This finished, they began to gather is that I did not return to camp. Larry

"Go ahead," said Sadie.

"I'm just telling you the situation thing out.'

"That's right, No. 44. Say it all."

"Well, to sum it up, not a soul has pened. Nobody has any reason to look even if they wanted to.'

Sadie had been indicating her comof the present. Her imagination had plete grasp of the situation by a series

"That's one end of it," he congreat outdoors, and it was carrying her tinued. "Here's another: Pickerel Bay onward with bewildering and beguil- is off the line of travel hereabouts. ing allurements. Hardship, privation, Campers wander in here occasionally, possible starvation played no part in but the guides never suggest it. It's any of her wonderful visions. not considered a particularly good "See here, Sadie!" said Stoddard place for fishing, which is what most not considered a particularly good suddenly. "Have you done any figur- of the campers want. The islands in ing as to what is likely to happen other parts of the lake are much more comfortable for general purposes.

"This camp we found has been vacant for at least a month. I don't see "Not necessarily; in fact, not even any signs of others on any of the is probably. But I mean, have you thought lands nearby. All of which means we

"Well, it ain't as if we were lone-"Now you speak of it, I don't think some," she observed gravely. "I ain't,

"So it leads up to another proposition," he said, not appearing to notice her comment. "If we're going to get off this island we must do the job ourselves. To get from an island to the shore means a boat. We have none.

"The nearest piece of land to us is that's another island. Furthermore, it's Well, he can begin tracin' you, can't in the wrong direction. It's true that we might manage to swim to it. But we wouldn't be any better off after reaching it than we are now.

"We won't swim," said Sadie decis-

"You've probably noticed it's still blowing almost as hard as last night, although it's clear. That means no She devoted a minute to readjusting boats out on the lake today, except the launches that run from the station down to the hotel, and they don't come within sight of us.

> "Well?" she asked, when he paused. "Well, now you know the situation;

"But what's the answer?"

"That's what I wish you'd tell me.

Sadie considered the case for several "I minutes; then shrugged her shoulders

"It is sort of a puzzle," she admitguess. You'll get the answer by and We'll both try to think one out."

"We got twenty crackers left, and correspondence pleased her. She did half a cake of chocolate, and we'll not dream that there might be other catch more fish. We got pienty of water to drink. We don't need to eat "Larry knows nothing," Stoddard again today after that feed we had.

"Shake, Sadie! You're a good sport, and you're game. Of course we're bound to get out of here. But I want-

Sadie was flushing with gratifica-



The Automobile Lubricant That Resists Heat

60c to make test will save you over \$50 a year

If you look at the metal surfaces of your automobile engine with the naked eye, you will say they are perfectly smooth. Examine them under a microscope and you will find they are actually covered with thousands of sharp points and depressions. It is these points and depressions that demand efficient lubrication.

To illustrate how a lubricant works, imagine the metal surfaces to be two sheets of sand paper. If you rub two sheets of sand paper against each other they grab and hold fast. But if you give each sheet a good, smooth coat of paint, they will slide over each other easily. That is how a good lubricant prevents friction between metal surfaces.

Metal to metal surfaces slide easily only when covered with a substantial film of liquid lubricant. Oil that contains sediment causes friction, because sediment crowds out a large part of the liquid oil. Thus the metal surfaces are pressed together and the microscopic points and depressions grab. That means friction and wear.

Sediment in ordinary oil causes friction

Notice the sediment formed by ordinary oil. The bottles shown at the top of the page contain samples taken after 500 miles of running. In ordinary oil the sediment is seven times as deep as in Veedol. In other words, Veedol reduces sediment about 86%. This is the Sediment Test.

All ordinary oil breaks down under the terrific heat of an automobile engine-200° to 1000°. Within a few hours plack sediment is formed. So a large part of the oil loses all lubricating

The sediment crowds out the remaining liquid oil and allows the metal surfaces to rub together. This means friction, wear, loss of power and expense.

The Faulkner Process

Veedol is unlike ordinary oil. It is made by the Faulkner Process, a new discovery used exclusively by this company, which gives Veedol its remarkable heat-resisting and wear-resisting 1842 Bowling Green Building properties. New equipment for this process cost us \$300,000, and it will add \$50,000 to our 1917 manufacturing cost. Ordinary automobile oil cannot be made like Veedol and cannot have the same lubricating properties.

Veedol resists heat, does not evaporate rapidly, does not carbonize if your motor is in good condition - and

what is most important, reduces sedimentation about 86%.

60c to test Veedol will save you \$50

Five gallons of Veedol will cost you about 60c more than five gallons of ordinary oil.

With five gallons of Veedol you can drive 2,000 to 5,000 miles — possibly two or three times the mileage you get from ordinary oil. So you will have ample opportunity to compare opertwo or three times the mileage ating costs.

The average automobile runs 6,000 miles a year and the average yearly expense is \$416. Of this, gasoline, repairs and depreciation come to \$268.

Now then - since friction and wear vary in direct proportion to the amount of sediment formed by the oil, the elimination of 86% of the sediment will save gasoline, repairs and depreciation.

Your gasoline bills, repair bills and the depreciation of your car will all be cut down by the use of Veedol. Veedol will save you \$50 to \$115 a year.

Make this road test

Clean out your automobile crank case. Fill with kerosene. Run your motor about thirty seconds under its own power. Draw out all kerosene and refill with Veedol.

Then make a test run over a familiar road, including steep hills and straight level stretches.

You will find your motor has acquired new pick-up and hill-climbing ability. It will have less vibration and will give greater gasoline mileage.

Buy Veedol today

Over 12,000 dealers sell Veedol. Each dealer has a Veedol Lubrication Chart which specifies the correct grade of Veedol for your car for both Winter and Summer use. If you cannot get Veedol write for name of dealer who can supply you. Buy a can of Veedol

A convenient ouring device is sup-lied with each metal

Supplied in-Sealed Cans ½-gal., 1-gal., 5-gal. Steel Drums 15-gal., 28-gal., 58-gal. Oak Barrels 28-gal., 50-gal. Guaranteed wh



Send 10c for 88-page Book Send 10c for our new 88-page book on automobile construction and lubrication. No other book at any price contains as much information on this subject.

PLATT & WASHBURN REFINING COMPANY

Use Grease of Known Value

The Sediment Test shows you how far Veedol excels ordinary oil; Veedol Grease is equally superior to ordinary grease.

There is a Veedol grease for every purpose:—

VEEDOL CUP GREASE.

2. VEEDOL GRAPHITE
GREASE—For general
inbrication, springs
and water pump.

not tight.

4. VEEDOL-TRANS-GEARin-Forgespsenclosed
in-tight housings.

For washing your car try Keal, the new soap.



Galloway "On its simplicity, dura-bility and ability, I stake my reputation as an engine builder." WM. GALLOWAY. PEER OF ALL 1917 ENGINES!

KNOW THIS ENGINE and you will buy it-you will at least try it. Its design, the material from which it is built and the workmanship

GET THIS FREE BOOK NOW! Tells how to plek out, up and judge an end of the state of

FIVE SELLING PLANS-BACKED BY A BOND! !

1917 IMPROVEMENTS

There's a Caloric dealer in your town—ee him soon. If you den't know who he s, write us and we'll tell you.

Let us send you our free booklet con-

taining our remarkable guarantee.

The Monitor Stove & Range Co.

WRITE OUR DISTRIBUTORS:

2023 Gest St.

Cincinnati, Ohio

Wm. Galloway, Pres., Wm. Galloway Co., 185 Galloway Sta., Waterloo, Iowa

Ore for Our Money
Direct
From Manufacturers quality and save Every style ready og No. 113 omplete stocks, Ev Ask for Catalog us refer you to Kalamazoo owners in your own town and show Kalamazoo Stove Co Mfrs. Kalamazoo, Mich Stoves, Ranges, Furnaces Metal White Enameled Kitchen you what a real money-saving offer we can make. Write today-get our catalog—see color illustrations of beautiful ranges with latest feawhile enamel spiasher backs, erc., and at money-saving prices. Kalamazoo Direct to You Quick Shipment We Pay Freight





BOOK ON DOG DISEASES And How to Feed Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc. 118 West 31st Street, New York

She had been hoping she was a good sport.

The taking of another fish served as an abrupt interruption to idle speculations. It was not a large bass, but Sadie was as ardent for its capture as if it were the leviathan of them all. She pounced upon it hawklike when it had been drawn into the shallows, heedless of the viciously erected dorsal fin.

When biting ceased at the spot opposite their camp Stoddard moved along the shore, trying other places that seemed likely to yield prey. Sa-, die followed, occasionally rambling a little distance into the woods.

She loved to explore. She wanted to learn, too. Usually she returned with specimens gathered from shrubs and bushes and mossy retreats. Stoddard knew most of them and she put the names away in her faithful memory with a sense of new knowledge.

They had gone nearly the length of their island, and Stoddard was intent on the effort to coax a nibble into a well-developed bite when he heard a scream from Sadie.

Dropping his rod, he scrambled up the rocks and broke through the brush in the direction of the sound. Sadie, running as fast as her skirts would allow, met him half-way. She was breathless; her eyes were wide with excitement.

"A bear!" she gasped.
"What!"

"A bear! I seen it!"

"Nonsense! Wait a minute now. Get your breath."

But Sadie would not wait until she had recovered from her panting.

"I tell you it was a bear!"

"How big?"

"I don't know. But it was a bear." "Where was it?"

"I went back up to where that old camp is," she blurted between gasps. The place where we found the crackers. I was just lookin' around again. And then I heard something. And then I seen it.'

"And what was it doing?"

"It was looking at me."

"I don't blame it," said Stoddard lightly.

He was more than skeptical of Sadie's story. Bears were uncommon and shy in the Deepwater and they did not prefer small islands. He believed that Sadie might have seen a shadow.
"Did it move?" he inquired, check-

ing a smile.

"I didn't wait. I moved. But it had eyes.

"Let's see if we can fid it."

"Will it hurt us?"

"It'll probably be glad to see us Come on and show me where it was." Reluctantly she followed him. She

knew very well she had seen a bear, and bears were animals that Sadie instinctively classed with lions and tigers in their undesirability as neighbors. As Stoddard neared the old camp-site he moved cautiously. If anything should happen to be there, he did not want to frighten it away.

The long shadows of late afternoon filled the woods. At the edge of the clearing he stood for a minute until his eyes were fully accustomed to the dimming light. Then, as his glance followed the direction of Sadie's arm, which was thrust over his shoulder, he saw that something did move!

It was near one of the rude benches. If it saw him it betrayed no evidence of alarm. Sadie was beginning to pant again; Stoddard could feel her breath on his cheek. For a few seconds he studied the object; then nodded to himself.

Now he glanced over the ground near his feet, searching for something. A couple of yards from him lay a stout split stick. He stepped forward softly and stooped until his fingers clutched it. Then he crossed the clearing on a run.

Sadie stood horrified. How could a man fight a hear with a stick? Surely No. 44 was dashing into the jaws of death! She saw the club raised over

SOIL PROF

tell how you can increase your farm profits and build up your farm through more profitable farming methods, including the use of fertilizers. Crops, soils, seeds, lime, cultural methods, harvesting, marketing, drainage, cover crops, farm manures, rotations, etc., are among subjects discussed.

You Cannot Afford to **Ignore Fertility Subjects**

Present high prices for farm products make larger yields doubly profitable. Our soil books are free. You should have a set to study before planting season opens. Inform yourself by writing for them.

Soil Improvement Committee of the National Fertilizer Association

Baltimore Dept. 145



For rough chapped hands, and broken blisters; for piles and hemorrhoids; for burns, cuts and all irritations of the skin

Petroleum Jelly

Put up in handy glass bottles; at drug and general stores everywhere. Illustrated booklet describing all the Vascline" Products mailed free on request, together with "Vascline" Poster Stamps.

CHESEBROUGH MFG. CO. (Consolidated) 33 State Street, New York City

Make money from wood this winter. The portable rig (below) can earn its cost, bius a big profit, in one season; and the whole outfit is made to stand years of hard service.

Mounting; strongost oak or steel, mortised, bolted and firmly braced Best steel wheels, staggered spokes Saw frame, heavy angle steel bars, bolted and rigidly braced, equipped with tilting table. Saw blade 20 to 30 inch. Appleton Engines deliver full rated h. p. with least use of fuel; and wear for years. Sizes 1% to 22 h. p. (4 to 10 h. p. for outfit below.)





smaller b doing repair work at home. Our Forgesare used by Farm ers in ever;

Positively Guaranteed to be as large durable, do a much work as any forge costing twice as much and to be as represented or money refunded.

SPECIAL OFFERS!! Until March 31, 1917, our special Forge and Tool offers will be of great interest to anyone needing a forge. Superior goods at low prices. Prompte shipments. This offer may not appear again, Write today, Send stamp for Catalog No.15, and testimonials.

C. A. S. FORGE WORKS, Saranac, Mich

his head and saw it rescend swiftly. It fell upon something with a muffled soft concussion. Again it rose and fell; then several times in rapid succession. She saw him deliver a mighty kick at a convulsively squirming body, which drove it several feet toward the center of the clearing. After that he began beating it again until it lay quite still.

When he seemed satisfied with his work he looked up and beckoned to her. With besitating footsteps she went to him, her glance still riveted upon the thing that lay on the ground.

"You killed it!" she whispered. "Killed a bear with a stick!"

Stoddard was grinning at her.

"Porcupine," was all he said. Sadie felt suddenly foolish. She knew nothing of porcupines, though she had an idea that they were infinitely lower in the scale of ferocity than bears. At any rate, she had never heard of a porcupine killing anybody.

"Is it another laugh on me?" she asked, crestfallen.

"Not at all. You made a real discovery. Only it's not a bear."

He turned over the animal with his foot. Sadie bent to examine it.

"Rather tough to beat a poor porcupine to death with a club," he declared. "But we needed him."

"You mean to say it's any good?" she asked, looking up from her inspection.

"It can be eaten."

"Honest?"

"Some of them can, at any rate. The young ones are all right. I'm not sure about this boy, but we'll have a try at him. He's big and he's old, and he's probably as tough as walrus-hide. But we'll know more about that later. The main thing is to get him to camp.

"I'll help you carry it," she said readily, all hesitation having vanished m the discovery that no bear dwelt upon peir island

"Keep your hands off him; he's full of quills like needles. I'll have to drag him.

He unbuckled the leather strap that served him for a belt, passed it around the neck of Sadie's "bear," and drew it taut. Then, dragging the creature behind him, he led the way for their camp.

The removal of a porcupine's hide is a task to be performed with caution if the hunter has a proper regard for his fingers. Accomplish it after much labor, Stoddard began to slice strips of meat from the carcass.

"He's tough, all right," he commented. "You might fill that lard pail with water, Sadie."

(Continued next week).

Land 'O Nod Stories By HOWARD T. KNAPP

A Joke on Frisky

THERE are you going with that axe?" asked Tinker Teedle Tee as Billy Be By Bo Bum trudged up the lane leading to the White Forest.

"I had nothing in particular to do, so I thought I would cut some bean poles for next summer," replied Billy. "That is a bully idea," said the mer-

ry little eff, "and if you will come with me I will show you where there are a lot of nice, straight sapling

So they tramped through the woods until they came to a clump of hickory saplings, and here Billy cut his bean poles while Tinker perched on a log nearby and bossed the job. But the elf was not the only one interested in the proceedings, for Frisky the Red Squirrel, came scurrying through the woods to find out what was going on Frisky, you know, is one of the most curious fellows alive, and he is never so happy as when poking into other people's business. No matter what is going on in the White Forest, Frisky is always on hand to find out all about it.

One big cak grew near where Billy was working, and Frisky perched him-

gest Life To



For 36 Years—Always the Sign of Absolutely Unqualified Satisfaction

S well expect to "veal calves" on skimmed milk and get the best market price as to try to get the greatest horsepower per-dollarcost out of your automobile by using low-grade gasolines sold by peddlers, or of unknown quality or reputation.

And you might just as well leave your car or other machinery out in the blasts of snow or rain, to rust away, as to try to fight friction with low-grade, unknown quality motor oils.

Why EN-AR-CO CARBONLESS MOTOR OIL and White Rose Gasoline Reduce Expenses

THOUSANDS of motorists write and tell us that before they started to use National Carbonless Motor Oil and White Rose Gasoline they had to "buy blindly."

Just as often they got very poor oil and very poor gasoline regardless of the price they paid, whether at home or touring

"It's a case of trust to luck when you buy any other oil or gasofine, "they say, "no matter what price they stick you for."

National Carbonless Motor Oil and White Rose Gasoline are always superior for use, in any make car, no matter where purchased. They are always UNIFORM in Quality.

All En arco Products are always made on the "Quality First" principle, regardless of cost of raw materials, labor, time, scientific laboratory investigation and rigid tests both in the processes of making and in practical tryouts and use on every make of car.

Over 35 years of established good will with the public proves the superiority of En-ar-co Products.

We give every opportunity to you to prove these facts for yourself-for your lasting satisfaction and constant savings, dollar for dollar, in bigger value received in every gallon of these products.

Our Guarantee

The cost of operating any car made is too great—much more am it should be—unless National Carbonless Motor Oil and Thite Rose Casoline are used.

When you use these En-AR-CO First-Quality Products we guarantee: 1—More horsepower developed. 2—Minimum costs for repairs, caused by friction. 3—More miles per gallon. 4—Lowest operating cost per mile. 5—Longest life to any car. 6—Highest value when the car is to be traded or sold.

Mana V. B Butter

To AUTO and TRACTOR

Owners

The Mational Refining Co. 1170 Rose Building

THE NATIONAL REFINING COMPANY General Offices: 1170 Rose Building, Cleveland, Ohio

National "Quality First" Products

National Carbonless Meter Cil Proved highest quality by years of most prac-nt usets and use. Guaranteed tenar, clean, then free. Unbrightee perfection, clean, then free the perfect perfect perfect is coused by friction, and to give perfect isfaction in any make of automobile, motor at or power engine. Try it.

Thousands of car owners refuse any other, tre, dry carbon-free gasoline. Every drop is wer. Always uniform in quality. Insures trimons power—even pull—quick get-away ent, flexible power that meens far greater leage per dollar. Prove these facts easily trying it.

National Light Cil bright-burning oil—the Al oil for humps— lor—no black chimneys. Best also for eil res; for the hot-weather oil cook stower for ators and brooders. Insist on getting this r most perfect satisfaction.

Black Beauty Axle Grease backutely superior to any other and goes, was far as ordinary grease! Won't spoil, wear true-ful, galvanized pails. Friction-p, wear-resisting. No compount to clog and a. Wagons hat much longer and the load

En-ar-co Tractor Oil needthisespecially made oil for neeters. Has proper body to lubross efficiently. Hundreds of eastell us they have never been to match its quelity. Thy it; these facts to your lasting

al Friefic

The lending grease for atomobiles. Also for use

and enclose two 2 cent stamps. Send me Handy Long-Distance Oil Can FREE. Please give nearest shipping point in this State and quote prices on items I have marked. I will be in the market about (Date about

... gals. gasoline per year I usegals. motor oll per year .lbs. axlo grease per year

I use gals, keresene per year I use gals, tructor oil per year

R. F. D. Tear or Cut Out—Mail Today This can will not be sent except to Owner actors or Automobiles when you fill our a complete, please. Not for boys or girls

Write Now_



irstin Stump than any other One Man and Horse Power Kirstin Pullers sell for \$39.60 and up.

5944 Ludington Street, Escanaba, Mich

The book also proves Kirstin superiority with letters from men who have bought Kirstins and are glad they did. Write for this Free Book today; learn about our Profit Sharing Plan. Is shows that a Kirstin often pays for itself in a single day, that no stump is too big, no job too small for a Kirstin. The biggest line of land clearing machines in the world.

A. J. KIRSTIN COMPANY

FERTILE FARM LAND

Illustration is of the Kinstin One Man Drum Type Machine

1704

Virginia. M. Carolina, West Virginia and Obiout \$15 acre and up offer big values for the price. Best elite, markets, schools, and transportation facilities—Good and good neighbors. You can't bears in a better section. Be for further in formation and attractive literature telling.

221 Roxfolk & Western Ry. Bldg., Roanoke, Va.

F. H. LaBaume, Agr'l & Ind'l Agent

N. A. C. BRANDS

Acid Phosphate, Nitrate of Soda, Steamed Br

Tankage, etc., the highest quality of fertilizer

tertals. Bug. ton or car lots. Prices always low

Also inoculating bacteria for legumes and sone

materials. Writter photons buying Nitrate Adea.

15 Year Guarantee Flaw Or No Flaw

10 Day Try-out

SWEET CLOVER seed, special, scarified, hulled and unbulled. Coroniar and prices on request. John A. Sheehau., R. 4, Falmouth, Ky.



Packets Seeds-10c.

We want every reader to test "HARRIS SEEDS THAT HUSTLE." Send loe, new before you forget—for this mammothicollection We send you 20 separate packets finest varieties—one each—of Beets, Carrot, Cabbage, Cefery, Cucumber, Estruce, Cress, Muskmelon, Watermelon, Onion, Parsbey, Parsnip, Radish, Salsify, Spinach, Tone to, Giant Mixad Poppies, Calenduia, Cosmes; also Children's Botanical Garden, a collection of Sower seeds. With this ceillection we send rebate check for 10c, and big cathologue of world's finest seeds. HARRIS BROS. SEED CO., 350 Main Street, Mt. Pleasant, Mich. er to test "HARRIS SEEDS THAT HUSTLE."



A Paying Farm Is the Best Insurance-Locate on One In Central Missouri along Rock Island Lines

Missouri, although one of the oldest states west of the Mississippi river, still offers splendid opportunities for the homeseeker. This is true especially of that portion of the state lying south of the Missouri river and traversed by the Rock Island's St. Louis-Kansas City line.

The size of the farm is a matter of choosing or of finances. The man on a thousand-acre plantation is making money, and so is the family that gets a living and a moderate cash surplus from three, ten, twenty or forty acres. The important thing is that the opportunity is there in Missouri, along Rock Island Lines.

That portion of the state of Mis-That portion of the state of Missouri traversed by the Rock Island's St. Louis-Kansas City line borders upon a part of the Ozark region. Much of it is foothill country, the rest gently rolling prairie, fringed with timber. All of it is exceedingly well watered by streams that find their source in the Ozark mountains in the Ozark mountains.

This region, with a rainfall of 35 to 40 inches per annum, a growing season of six months, pasture nine to ten months, cheap hill lands, moderately priced bottom lands, and big markets within easy reach, is especially attractive to the family of small means eager for a paying home on a limited acrease. ily of small means eager for a paying home on a limited acreage.

It offers opportunity also for the stock raiser as it combines two essentials, rough, luxuriant pasture and smooth fertile farm land. Thousands of acres of the rough land can be used for dairying or beef production if a large farm is desired, and for the small farmer the same class of land can

be developed into orchards or a

poultry proposition.

It is a splendid country for the dairy farmer and a place where poultry can be raised most profitable.

poultry can be laised and itably.

St. Louis and Kansas City, two of the West's greatest cities and distributing centers located at opposite ends of this line—only 300 miles apart—are dependent in great measure upon the adjacent territory for raw material, with a tremendous population that must be fed.

be fed.

There is not another section in America where undeveloped agri-cultural land can be had so cheap. ly in proximity to large markets.

ly in proximity to large markets. The range of prices on the raw land is from \$7.50 to \$20 per acre, while values of improved farms run from \$15 to \$100 per acre.

Missouri has a diversity of offerings for the general farmer, the fruit and truck grower, poultry raiser, for the family group eager to make a home by utilizing the little things. little things

Like opportunities are found in all parts of the territory served by Rock Island Lines—the fourteen most productive states in the Union.



The Rock Island has no lands for sale, or preferred interest in any one place or district. We want successful farmers along our lines, for the more successful you become the more we benefit. There's lots of land, lots of opportunity. We have a well organized farm bureau that is ready and glad to give impartial information and advice about the country we serve. Write us fully just what you want—write today.

L. M. ALLEN, Passenger Traffic Manager ROCK ISLAND LINES Room 744, La Salle Station, Chicago, Ill.

self on the lowest branch, his bushy tail curled over his back, watching Billy as though his life depended on it. But he couldn't make up his mind what it was all about, so at last curiosity got the better of his fear, and he jumped to the ground. As neither Billy or Tinker paid any attention to him, he came nearer and nearer, fairly bursting with excitement, his beady eyes snapping and twinkling like live coals.

"Don't turn around or even raise your head," said Tinker. "Just go on with your work but listen to me."

"I am listening," replied Billy. "What

"Frisky is on the ground right behind you, and if you do as I say, we can have some fun.'

"All right, what shall I do?" asked Billy.

"Grab your axe and rush at Frisky as though you intended to chop him to pieces," replied Tinker.

"Boo!" yelled Billy, jumping up suddenly and rushing at the squirrel, who gave a bark of surprise and sprang to the tree and ran to the end of a branch, where he sat snickering and jeering as much as to say, "Smarty, smarty, you cân't catch me."

"Hit the tree with your axe," called the elf.

So Billy swung the axe and struck the foot of the tree a resounding whack, just as though he intended to cut it down. At the first blow, which made Frisky's toes tingle, the old scamp stopped chattering and ran a few branches higher, where he thought he would be safe, and here he sat watching Billy to see what he would do next.

"Hit the tree again," shouted Tinker. So Billy swung his axe and struck the tree trunk a mighty blow that made the tree tremble and Frisky's toes tin-Frisky ran to a higher branch, but Billy hit the tree again and again, and at each blow Frisky ran higher and higher until at last he reached the topmost branch. Then Billy gave a mighty whack, a whack that made Frisky think the tree would surely fall. As he could not climb any higher, Mr. Squirrel leaped far out and came to the ground fifty feet below. He picked himself up, none the worse for his dizzy jump and scampered away, scolding, to his nest.

"Good gracious, that was an awful jump," said Billy as he watched Frisky scuttling off through the trees. "I should have thought he would have broken his neck, but he doesn't seem to mind it at all."

"He doesn't" replied the elf. "I have seen Frisky jump from the top of a higher tree than this when he was trying to escape from his old enemy, Slinker the Weasel."

"But how does he escape being hurt?" asked Billy.

"If you had watched him closely you would have noticed that as he came sailing down his whole body and bushy tail was flattened out against the air, and that served to break the force of his fall. He works on the same principle as a flying squirrel.

"Flying squirrels are smaller and lighter than Frisky, and their skin is very lose. So when they spread their legs out straight from their sides, the skin connecting their front and hind legs forms a kind of sail which resists the air and breaks their fall, and they can sail down from the top of a tree fifty or sixty feet high to the lower branches of the next tree, which may be even farther away."

"I sure would like to see a flying squirrel," said Billy. "Are there any here in the White Forest?"

"Lots and lots of them. But you would have to come to the woods at night to catch a glimpse of them as they only come out to play after the sun has gone to bed. From sunrise to sunset they stay curled up in their snug little nests in some hollow limb, for they are peaceable, quiet little fellows, not at all like their cousin Frisky, and are content to stay at home and attend to their own affairs."



You'll enjoy a visit to the mild, delightful

Highlands of Louisiana.

No cold blustering winter there. It's a land of perpetual growth.

Write us today for low excursion
rates from your town. Learn how little it
costs to make the trip and see what is being
done on our wonderful low priced land.
We'll send you, too, the big sixty-four page
book "Where Soil and Climate Are Never Idle,"
and a map of Louisiana in full colors.
All FREE to you. A postal brings this
valuable information.



What Is Rock Phosphate Worth?

When at the Ohio Agricultural College 40 pounds, costing about 15c, added to a ton of manure gave increased crop yields worth 75c. This was the result of an eighteen-year test, and is one of the many that prove the claim, "Rock Phosphate is the most economical and only permanent source of Phosphate." Get literature from us today on Rock Phosphate. Mention this weekly and we will send you free a copy of "The Farm That Won't Wear Out."

FEDERAL CHEMICAL CO. Ground Rock Department

Columbia, Tenn.



Send for 36 page illustrated
Northern Minnesota Bulletin.
Tells about the wonderful opportunity—literally
millions of fertile acres of vigin crt-tover land waiting for cultivation. Watered by thousands of lakes;
unexcelled for dairying, cattle and hog-raising.
Wonderful crops of corn and cloyer. And the cost
is small. Upwards of \$25 per acre on easy payments.

Write Now for FREE Bulletin

giving full information regarding money-making farmation the Great Northern Railway in Northern Minnesota. Actual facts and figures about how farms here double and treble in value. GREAT GREAT

E. C. LEEDY, Gen. Immigration Agt. Dept. 186 Great Northern Railway, St. Paul

Potatoes Paid ofor Farm—\$700 Profits Too

A farmer did this with his first potato crop in Eastern North Carolina. Land selling at \$15 to \$35 per acre produces like \$200 kind. Big yields early truck 50 to 75 bu. corn per acre. Live stock needs little shelter long grazing cheap feed. Abundant rainfall—nearby markets Personal attention given settlers—Write me.

W T. KYZER, AG. AGT. NORFOLK 20-B UNION STATION SOUTHERN NORFOLK, VA.



Pulverized limetrock for "aour" soils. Write for LOW PRIOES DIRECT TO YOU and we will send sample and full particulars. Write to office earest you.

LAKE SHORE STONE COMPANY,
Muskegon, Mich., and South Haven, Mich

New KEROSENE LIGHT BEATS ELECTRIC 10 Days FREE_Send No Money

We don't ask you to pay us a cent until you have used this wonderful modern white light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests by U. S. Government and 34 leading Universities show that it

Burns 50 Hours on One Gallon

common kerosene (coal oil), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Won Gold Modal at Panama Exposition. Greatest invention of the age. Guaranteed.

\$1000 Reward will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, Yours under which one lamp is given free. Write quick for our 10-Day FREE Absolutely Free Trial Proposition and learn how to get one free. FREE

Ansolutely Free Trial Proposition and learn how to get one free. It L. MANTLE LAMP COMPANY, 117. Aladdin Building, CHICAGO, ILL delivery plan makes it easy. No previous experience necessary. Practically every farm small town home will buy after trying. One farmer who had never sold anything in latite test. **Jeold of the first seven days.** Christensen, Wis., asys. **Hose never seen an article test.** Jeold of the first seven days. **Christensen, Wis., asys. **Hose never seen an article test.** Jeold of the first seven days. **Christensen, Wis., asys. **Hose never seen an article test.** Jeold of the first seven days. **No finery talk necessary. Selection of continuous days: the selection of the first seen days. **No finery talk necessary. Selection of continuous days: the first seen days. **No finery talk necessary. Selection of continuous days. **Incomplete test.** The first seen days. **Incomplete test.** The first seen work specified test.** The first seen days are time or a teady; when can start, townships most convenient for you to work. Men With Rigs Make \$100 to \$300 Per Mo.



HIGHEST PRICES PAID FOR ALL KINDS OF RAW FURS

I need large quantities of all kinds of raw furs, and it will pay you to get my price list. I especially soliet communication with dealers having large lots to sell. Write for price list and shipping tags today to O. L. SLENKER, P. O. Box E, East Liberty, O.

CIGAR SECONDS High grade cigars—some a little damaged in shipping; 3c each by box of 50, sent prepaid. Send \$1.50 for a box; money back is you want it. WATTLES & COMPANY, LITCHFIELD, MICHIGAN. 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 call skins; about the fur goods and game trophies we sell, taxidermy, etc. If you wanta copy send us your correct address.

The Crashy Frisian Fur Company

SABO SURE CATCH TRAP for skunk, coon, possum, fox, groundhog, rabbit, etc.

rabbit, etc.

The SABO TRAP is the best trap in the world either for amateur or professional trappers. This trap is de jened to be placed in the animals burrow-it requires no batt and is positively sure catch first trip in or out: no chance for escape; it catches him over the body; no danger to hunters, doss or cartle. Ask your hardware dealer forone. If he has not got them write us for free booklet which explains the SABO SURE CATCH TRAP.

Sabo Trap Mfg. Co., 3126 W. 25th, Cleveland.O.

Woman and Her Needs

Post-Christmas Reflections

suggest a cottage perched on a bluff elders. on one of Michigan's popular lakes is been bothering me.

offer, I hereby pass it on.

and the past, that laughing as a reguber when I was a youngster that everybody, old and young, laughed a great had their "chores" as well as elders. had a good time.

things pressed. It ended at sundown, out with our squirrel cage method of or "early candle light," and was crowd- living. ed full of manual labor. But in beappearance.

things, too. Some of the jokes were created as hearty a chuckle as though simple things. the hearers were listening to them for the first time. Good natured, practical jokes on one another were not resented as impetinences, but recognized as material for one of the laughs which would make the day's work lighter. People were busy and hard worked, but you seldom or never heard talk of nerves. Indeed, the "nervous" person was regarded as a "crank" and a pest to be avoided, instead of as the regular order of the day to be first considered. In short, people were healthier, happier, and jollier, though poorer and, according to modern standards, without the things absolutely necessary to make them happy.

The modern child, for instance, is showered with things from cradle days. Toys, games, books surround him in quantities which his doting parents never even read about in fairy books in their childhood days. Father and mother, aunts and uncles and grandparents plan to give the child "every advantage" which they missed themselves, with the fond delusion that in this way they are giving him a good

fishness and extravagance. And as for hot griddle. happiness, he does not know it in the sense his own parents did. A "store" views the flexible flier, the ice skates, spoon. Bake at once. the roller skates, the model builders, track, the dozens of books and pounds to one cupful of sweet milk and cook

to blame He has been loaded to the as you pour into buttered tins.

S UMMER cottages and January point of satiety all through his pam-snow storms are remotely related pered life. And for the latest part of the lat and what there is in a blizzard to taking a leaf from the book of his

"Is that all?" is the cry of the day. hard to see. But for several days the The spirit of the day is to get, get, get. name of this particular cottage has To demand change and excitement. And yet with all our getting we do not "Lafalot," the owner has named it, seem to get the thing we need to bring either from a desire to pick an odd happiness. The modern idea that hap name, or because inspired by the piness can come only with material thought that none of us are merry success has practically driven the blue enough, and that if we all "laughed a bird from the average American home. lot," we would be better and the world We read books on efficiency and strain a happier place in which to live. Any- every nerve to make another dollar, how, the cottage is marked thus, so telling ourselves that this will buy us that all who row may read, and think- modern conveniences and pleasures. ing it the best advice anyone could But with the increased material comfort we do not find contentment. Each Seems to me, in viewing the present thing we acquire opens our eyes to something we need to go with it, until lar exercise is passing away. I remem- life becomes only a mad scramble to secure "the blessings of civilization."

Simple pleasures are beneath us. We Everyone worked hard, children view with contempt the man or the woman who can laugh at the homely There were few toys beyond home household happenings and the joke made sleds, toy wagons made from cig- they heard last year. The joke we ar boxes, and rag dolls, and the adults heard for the first time last night at a never heard of joy rides and cabarets musical comedy is stale by breakfast and movies. But folks, young and old, this morning. We must have something new. And that demands further Day began with most of us at 5 a. m., money and further effort to earn the with some at 4 and even 3:30, when money, so that we are constantly tired

We have ten times as much as our tween, in the chinks that separated parents, yes, one hundred times as tasks, were plenty of laughs crammed much, so far as things go. But the one down to give the day a more finished thing needful we lack, the spirit to enjoy and the ability to "laugh a lot" in The laughs came from such simple spite of our surroundings. efficiency has brought prosperity, but not only old enough to stand alone, but it has driven away happiness. For it quite ready to die of old age. Yet they has deprived us of the power to enjoy

DEBORAH.

RECIPES.

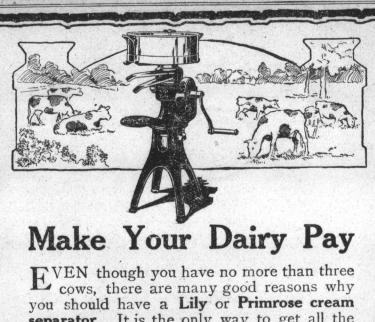
Banana Shortcake.-Make a rich short cake dough, flavor it with orange extract and on a well floured board roll into a sheet half an inch thick. Brush the top with soft butter and cut out rounds each about four inches in diameter. Pile these on top of each other and bake for 12 minutes in a hot oven. Separate the rounds and between each place a layer of sliced bananas dusted with confectioners' sugar. Serve with vanilla flavored cream.

Creamed Chicken.-Carve up the flesh of a cold, boiled chicken into squares of equal size, barring the pieces of skin. Blend a tablespoon each of flour and butter over the fire, and pour over it a quart of milk that has not been skimmed. - After this has boiled smooth, add the squares of chicken. Season well, and when cooked, add the beaten yolks of two eggs. Serve with sour cream biscuit, or crackers.

Pumpkin Pancakes.-To each cupful start and making his young days of mashed pumpkin add one egg, one cupful of milk and enough prepared They are giving him a good start in pancake flour to make a batter. Season one way, a fine start on the road to sel- with salt and pepper and bake on a

Graham Griddle Cakes.-One cup of graham flour, two cups white flour, one sled would have thrown his day into teaspoon salt, two small teaspoons of transports of delight twenty years ago, soda, one-quarter cup of sugar. Sift and filled his year with joy. Sonny all together, then add buttermilk and asises on Christmas morning, con-stir until of the desired consistency, or templates a loaded tree all his own, until the batter runs easily from a

Maple Sugar Fudge.—Break a pound the train of cars that runs on a real of maple sugar into small pieces, add of candy, turns his back on the whole five minutes. Put in a piece of butter thing and whines, "Is that all Santa the size of a chestnut and cook until a few drops harden when dropped into Poor : ungster! He isn't so much water. Remove from the fire and beat



separator. It is the only way to get all the cream. It gives you warm, wholesome skimmed milk to feed. It saves a lot of tiresome work. When you get your Lily or Primrose separator busy, you

will wish you had done it when you first got your cows.

Lily and Primrose separators skim down to the last drop of cream in each gallon of milk. You can't beat them for close skimming. They turn easily. The bearings oil themselves as you run the machine. They don't get out of adjustment—that is important. By turning a screw on the outside of the separator once in six months or so, you keep the bowl at the correct height, and this is positively the only adjustment necessary.

Next time you go to town, drop in and see the obliging dealer who handles Lily or Primrose cream separators. In the meantime, drop us a line, and we will send you some interesting reading matter about separators.

International Harvester Company of America

CHICAGO McCormick Milwaukee

Made from APOLLO-KEYSTONE COPPER STEEL Galvanized Sheets—the most durable, rust-resistant galvanized sheets manufactured for all forms of exposed sheet metal work.

Actual weather tests have proved conclusively the superiority of this material for Roefing, Siding, Culverts, Tanks, Silos, Gisterns, and similar uses. Look for the Keystone added below regular Apollo brand—it indicates that Reystone Copper Steel is used. Demand the genuine—accept no substitute. Our free booklet "Better Buildings" contains farm plans, information and instructions for the application of metal roofing and siding, it is of special interest to every farmer and owner of buildings. Write for free copy. AMERICAN SHEET AND TIN PLATE COMPANY, Friek Building, Pittsburgh, Pa.

A Big Washing With Little Work

That's the result when you use 20 Mule Team Borax. It softens the water—it helps the soap do its best work—it whitens the clothes and makes your linea take a glossier ironing. But the laundry is only one of the many places where



MULE TEAM BORAX

has a big use. Take the kitchen for instance. 20 Mule Team Borax makes dish washing casp. It cuts the grease—puts a shine on china and glassware. And in the bath tub you find this Boraz a spleadid soother, pore cleaner and antiseptic.



Ask Yourself This Question

It is important for reasons of health and practical economy for every housekeeper to ask herself this question:

"Do I prefer a pure baking powder like Royal Baking Powder, made of cream of tartar derived from grapes, or am I willing to use a baking powder made of alum or phosphate, both derived from mineral sources?

The names of the ingredients printed on the label show whether the kind you are now using or any brand, new or old, that may be offered is a genuine cream of tartar powder, or merely a phosphate or alum compound.

Royal Baking Powder contains no alum nor phosphate and leaves no bitter taste in the food.



Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so

This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

as profitable an industry as grain growing. The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

178 Jefferson Ave. McINNES, Detroit, Mich.

Canadian Government Agent



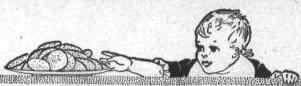
Our winter production of

FRESH FROZEN FISH

will start as soon as cold weather sets in. Your name and address on a postal will bring our price-list.

WISCONSIN FISHING CO. Green Bay, Wis.

All Children Like Cookies



Children are so fond of cookies that mothers should use care to make them light, healthful and digestible. Made with RUMFORD, cookies are light in texture, wholesome and nourishing, for Rumford restores the phosphatic elements,necessary to the growth of children, -which fine flour loses in milling. Find out how superior a leavener it is.

Send for FREE Trial Size Can and Test

Chemical Works Dept 38 Providence, R. I.



THE A, B, C's OF THE SCHOOL LUNCH.

BY MRS. FRANK SANDHAMMER.

mental stage. Few parents stop to is emptied. think how it really is to eat a cold the five coldest months in the year.

vegetable soup and see how your demand increases. mouth will "water," and you can hardthat into the cold-packed lunch.

And again, looks count half. How many mothers stop to put in a clean paper or napkin in the lunch box every day. A lunch packed with care and a feeling of pride when it is finished, is very much more palatable. Variety adds spice. Plan ahead and do not give the child the same sort of food every Wrap the sandwiches, cakes, etc., in oiled paper. This need not be an expense for a great many articles of food brought into the home today come from the grocery wrapped in oiled paper. Save these papers and pack them away in a dust-proof box and when they are needed see how much more attractive and sanitary the lunch will be, wrapped in these papers. This paper will also help to keep the food a few new things. Baked beans and fresh and will not distribute odors.

children use them. 'Encourage the child to wash his hands before eating, just as he would at home. Mark some small towels and put his name or initial on them and he will be delighted. Paper napkins may be used for towels also. The plain white ones are best and may be purchased as cheap as ten cents a hundred. Remember the community towel and drinking cup are just as dangerous at school as at any other place.

Most children in the country have in all kinds of weather, and there deposits his half frozen lunch in some care of the other food. out of the way place until noon. At noon he eats this thawed out lunch and we cannot say that he is in a perfectly nourished condition for his afternoon duties. It has been proven that something hot at noon gives a higher grade of scholarship and better intellectual attainments than where a cold lunch is

Now we will see what it requires to furnish a hot lunch. It need not be a The system necessarily must be very prove useful. simple. In some cases the mothers of

as the teacher sees fit to plan it. This older girl oversees that the vegetables, potatoes or whatever it may be, is made ready, and at the proper time she What shall the rural school children sees that it is placed over the fire. The be given to eat at noon? The question children each have a bowl and spoon is a timely one and comes up almost and are served the soup at noon to be daily. It has been proven that the old eaten with their home-packed lunch. method of packing the child's lunch in The boys have a part in the work also, the morning and calling that enough for they must see that there is plenty until evening, has passed the experi- of water supplied and that the garbage

There are various ways in which the lunch five days in the week for at least expenses may be met. Some of the articles may be donated by members of Let us see before going into detail the district. The stove will be the about the school lunch just what the largest item unless the food may be criticism to the present method in- prepared on the heating stove which cludes. First there is no commonly your school is provided with. The disused lunch box but what is open to trict may consent to buy an oil cook criticism. The food is bound to taste stove, or one may be borrowed for the stale when closed up in an air-tight winter, and a very good way is to have contained for several hours. Many the children give some form of an entimes there is an odor that is not fresh tertainment to help pay the necessary smelling and that does anything but initial expense. They will need an oil excite the digestive juices. Instead it stove, two burners is enough. A ketretards them. Go to the table, smell tle, some knives and a large spoon. that sizzling hot meat or that steaming Other things may be added later as the

Usually the families of the children ly wait until your turn comes to be in the school are glad to send the food served. That "mouth-water" is just stuff in turn for the hot lunch. The what aids digestion and you cannot get expense is very light, not amounting to more than a couple of cents apiece per day. If anyone refuses to furnish materials or to pay a cent or two per meal then the teacher will find some other plan to provide for that pupil.

When the children are all served then all eat together and the teacher encourages conversation, and in this way the children do not eat so hastily and lay the foundations for dyspepsia or indigestion.

A few very convenient things to make are soups made from vegetables. potatoes, celery, meat or creamed potatoes, hot milk or cocoa. The lunch will soon grow in favor and a variety of things will suggest themselves as the winter progresses.

For the lunch prepared at home try lettuce sandwich, hollow out rolls and Any utensil used in the lunch box fill with fish or other chopped meat. should be boiled daily and the child mixed with salad dressing, put in a few should be warned against letting other lumps of sugar, brown sugar sandwich, when the hot soup is served leave out the meat and put in more bread and some crackers. Fruits, fresh, baked, stewed or raw, are better than pastry. Add a few little frosted cakes, mix some apples and other fruits, nuts and salad dressing, and place in a covered glass. Jelly and preserves are better taken in a glass and added at noon. Cottage cheese with a little chopped peppers or olives is good for a change. Rather omit the meat than vegetables and fruits, as their valbreakfast about six a. m. or earlier, ue is almost always underestimated. then walk to school a mile or more and A good cup of milk at noon promotes growth and assists the body in taking

Give the child plenty of properly prepared, clean, simple food and his body will be in a good healthy condition and ready to throw off the germs of disease.

COOKING THE SPOILS OF THE HUNT.

BY LULU G. PARKER.

"It is lovely of him to think of us, burden to anyone. Some will say im- but how in the world do you cook it?" mediately, that the hot lunch is all the question arises in many houseright where domestic science is taught holds during the open season, when in the school, but the average country sportsmen remember their friends with teacher today has as much to do now a share of the spoils of the hunt. as she can wisely manage. This is all Therefore these hints from a frontier true. The hot lunch is not to be a cook, who knows more about serving whole meal. It is merely to supple game birds and fish than she does ment the lunch brought from home, about the butcher's best cuts, may

Wild ducks are apt to have the the district have taken turns in prepar- flavor of the fish upon which they feed: ing the lunch but this is not necessary, If they are parboiled before roasting, for where is the farm woman who does and a small onion or pared carrot is not have her hands full already? Put put inside of each bird, the unpleasant one of the older girls of the school in fishy taste will disappear. They may charge and give her the responsibility be stuffed and rosted the same as tame and two younger girls as her assist- duck, or instead of dressing, put an onants. The girls thus take their turns ion, plenty of salt and pepper and a either by the week or by the day, just tablespoonful of current jelly inside.

Serve with the thickened gravy which it yields i cooking, and a dish of cur-

Quail, snipe, woodcock, or any small game birds, should be cleaned well, and split in half for game pie, or for broiling on a gridiron.

Venison is a dry meat, and should never be roasted unless it is quite fat. It may be fried in hot butter or broiled the same as beefsteak, but it requires somewhat longer to cook than beef. Steaks are cut from the breast or loin. For frying, the steak should be season d well and dipped in flour or rolled cracker crumbs.

Bird Pi .- Clean and split the birds and put them over a fire with a quart or more of hot, salted water. Have enough water to keep the birds from burning but no more, adding more boiling water if necessary as it boils away. Take off all skum which rises while boiling, and season with salt, pepper, minced parsley, a small chopped onion and two or three whole cloves. Cut half a pound of salt pork into dice and let all boil until tender, adding water as necessary. When the meat can be broken from the bones with a fork remove it from the liquor, and make a brown gravy with two tablespoonfuls of browned flour, and a tablespoonful of butter. There should be a pint or more of gravy. Have enough potatoes cut into inch squares to fill a pint measure, and a pie crust made.

Butter the sides of a pudding dish and line it with the pastry. Lay in the birds and the potatoes, pour over the gravy and put on a top crust with a generous hole cut in it to let out the steam. Bake about an hour if the pie is medium sizes, longer for a large pie. Lay a white paper over the top if the crust browns too fast.

Rabbit Pie.—Rabbit pie made by a chicken-pie recipe, or as above, is excellent. Slice several hard-boiled eggs and put them with the potatoes under the top crust.

Venison Pasty.-Parboil the venison in hot water until nearly tender, and a good gravy has been formed. Then proceed as for chicken pie, but season with nutmeg and mace as well as salt and pepper. Put a tablespoonful of current jelly in the gravy which is poured into the pie.

Quail on Toast .- After the birds have been picked and drawn, wipe them inside and out with a wet cloth. Stuff them with bread dressing, or oys ters, using two oysters for each quail. Dip the oysters in melted butter, then in cracker crumbs seasoned with salt and pepper. Tie the bird's feet and sew up the opening after stuffing. Rub them with butter and dredge with Arrange in a baking pan with the breasts up, put a thin slice of fat salt pork on each and bake 12 to 15 minutes in a hot oven. Baste three or four times with melted butter and wa Serve on toast. Garnish with parsley and sour pickles or olives.

Roast Venison.-The haunch, shoulder and saddle are roasting pieces. Wash clean, and see that no hairs are dried on. Put into the baking pan, and lay over thin slices of salt pork, using two rows of pork on each side for the saddle. Put two sliced carrots, and onion and more salt pork in the pan around the roast. Season with plenty of salt, pepper, a few whole cloves and kernels of allspice, half a lemon sliced, or one tablespoonful of vinegar, dredge it with flour, and pour in a quart of hot water or soup stock. It will take two hours to roast eight or ten pounds in a hot oven, unless it is liked very rare. Baste it often while roasting. Serve with brown gravy and currant or any tart jelly.

Household Editor.-I am always interested in reading the home department each week in your paper. Expect to use your candy recipes. Now, I am wondering if anyone can give me a recipe for white cake without eggs. Our hens have gone on strike and we are tired of dark cakes .- Mrs. C. S.

Delicious!

Sounds good, doesn't it?

Especially to a hungry person. It conveys the impression that somebody has tasted something that

hit the spot. The flavor was just right. It had to be to bring forth the expression

-Delicious! Well, the flavor was just right, and the color, texture and volume too. We recently asked a young woman who had bought her first sack of

"The Flour the Best Cooks Use."

how she liked "Lily White" bread.

Delicious! was her reply, and she meant every word of it. The first sack converted her as it has converted thousands of others. Delicious! is a common expression among "Lily White" cooks. Delicious Lily White is a correct description of the flour "the best

cooks use." Ask any Lily White user, and then ask your dealer to send up a sack. Your verdict will also be-Delicious!

> VALLEY CITY MILLING CO., Grand Rapids, Mich.

OUR WONDER PRICES TELL THE STORY-GF.VCF:



Write for a Catalog of any goods you are interested in, whether advertised below or not. S e what real wholesale prices are

Grocery Catalog AD

Papers a Big Room

FREE TRIAL

TRY IT 30 DAYS PARCEL POST



Send No Money-

Just Send Your Name

Suy COFFEE WHOLESALE
Your Court BEST and SAVE 10 cts per pound.
WE PAY POST, EXPRESS or FREIGHT
IF YOU LOVE GOOD, DOYPER SEND FOR PRICE LIST
EVNE COFFEE CO. (Est. 1831) Coffee Specialists
Dept. 7, 2855-57 W. Madison St., CHICAGO.

S

Preserves health.

Costs 1 Cent a Week
to Operate per Person.
Place in any room, hall or
closet. No trouble to install,
Guaranteed sanitary and
odorless. Endorsed by thousands of users, dectors, sanitary experts, health boards,
etc. AGENTS WANTED. Kawnear Cabinet Co., awnearBidg, KansasCity, Mo

PAY BIG PROFITS

TOILET FRESH FROZEN



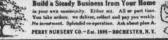
A nine pound cake delivered at your door by parcel post \$1.00 Each cake contains about 21 fish, roughly dressed

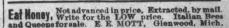
21 fish, roughly dre-and it only requires a few min-to make them ready for the fry pan. Frozen'in asolidoake, pac in a corrugated paper box. Satisfaction Guaranteed

CUT THE HIGH COST OF LIVING Fish is the cheapest, most wholesome food in the market. Bend us your check of money order. If a dollar bill is sent it is at your risk. DO IT NOW-you will want more. Shipments made up till April ist.

THE RANNEY FISH CO. RIVER ST.,

Build a Steady Business Irom Your Home in your own community. Either sex. All or part time. You take orders: we deliver, collect and pay you weekly No investment. Spicadic o-operation. As about plan A.







PEETLESS.

"This Is My Hobby," says wise, old

Col. Experience

"Yes, Sir! For years wire fencing has been my hobby. I've carefully investigated every kind there is, and season after season I've watched my neighbors put up new wire fencing of one sort or another. And, my friend, I'll tell you this: The more I study and observe, the more convinced I am that my good judgment is on the right track when it says to me: The only really good fence at a reasonable price is

PEERLESS FENCE, the Fence that stays put and lasts indefinitely."

Why Peerless is Best

Costs less per rod than any other equally high grade fence.

Made of very heavy gauge open hearth steel wire that gives unmatched strength and stay-there qualities.

Special galvanizing by a secret process that resists rust Indefinitely.

The famous "Peerless Tie" holds every wire in place regardless of the strain. Peerless stays put.

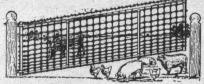
The Peerless one-piece cross-bar prevents animals pushing the fence down from the top or up at the bottom; it never sags.

There is probably at least one store in your town where Peerless Fencing for every farm purpose is sold, as well as the popular Peerless Self-Raising Gate and Peerless Lawn Fence. But if there should be no dealer convenient, write for our big, free, interesting Fence Book; generous samples included.

The advice of Col. Experience is good advice. For there are many common-sense reasons why Peerless Fencing gives more fence-value and fence-satisfaction, at a minimum cost, than any other made.

The Peerless Self-Raising Gate

IS one of the best selling styles in our entire line. It is no longer necessary to lug around the old-fashioned sagging, dragging, heavy gates. The Peerless lifts automatically and swings over all obstructions, snow, ice, grass, and rubbish.



In addition to being self-raising, it is extra heavy in both frame and filling. Big, massive frames of 15%-inch tubing and close woven all No. 9 wire, close mesh filling, insures long life.

Every part heavily electro-galvanized—no paint to wash or wear off in a year or two.

PEERLESS WIRE FENCE CO., 210 Michigan St., ADRIAN, MICH.

Book of "Cant Sas" Gates op me a postal and I will send you a copy postpaid. Quotes re w prices on complete gates ready to hang; also tells how to r guaranteed CAN'T-SAG Gates at home in your spare tin money. Shows why these easy swinging gates never sag, Cost Less Than All-Wood—Last Three Times as Long 30 Days' Free Trial Write for this FREE





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





Farm Commerce.

The Dairymen's Debt

such men would rather go in debt than products on a live-and-let-live basis. fall behind in the race for greatest efficiency. The financial status of dairy- SUGGESTS VARIATION IN PARCEL men is a matter of great import. But it is not to the monetary debt that we are giving first place this week. It is ulated.

mazoo the price has gone up to 24c of Agriculture at Rome. per gallon, as compared with 16c last year; in Jackson the advance has been of order books, somewhat on the order from 16 to 20c per gallon; in Bay City of a railroad mileage book, and is to from 12 to 20c; in Saginaw from 12 to be bought from the post office, contain-16c; in Detroit from \$1.67 per cwt. to ing printed and perforated slips. All \$2.10, etc. Not only will the cities pay farmers who want to sell direct must more for their milk supply this coming register at the post office, state what year, but condensories throughout the he has to sell in established units as a states are advancing their quotations pound, or a dozen or a gallon. because of the pressure brought by organized dairymen or to meet the prices the post office and finds racks of differbeing paid by city distributors. Cor- ent colored slips, each designating respondingly higher quotations are some particular farm product and each also being offered for cream. All of slip has the price marked thereon, and which figures a very much enhanced the name of the farmer. Whatever is income to the hard working dairymen selected either from one farmer or sevof the state.

can tell. If the average advance over four cents per gallon, then \$12,000,000 the deal is closed. would be the amount added to the dairymen of Michigan will enjoy a them or the farmer loses a market. greater degree of self-respect during 1917 than they did in 1916.

The advantage, it appears, is not to be limited to those farmers who live near our great cities. From little outto hand of advances in milk prices of the change seem to be, that the numto be very small.

then gave their support to the local in the act. and helpers and members everywhere tion of grain shippers by the Of gratitude is due.

With what specie can such an oblithe finest recognition of the work done name of the shipper.

We're not thinking of financial obli- thus far. We believe this will be done. gations. It would perhaps be difficult The men who may not have helped to find a dairyman who has a clean thus far, but who will be benefited, will financial slate. We are satisfied that certainly join with those who have carthere are few progressive ones who ried the fight to a successful issue and have met all outstanding debts, for put the business of producing dairy

POST.

Direct dealing between the producer rather the debt of gratitude that is due and the consumer, somewhat the style the men who have resurrected in the as practiced in European countries, hearts of dairymen of the state hope with the object of lowering the high for the cancellation of the alarmingly cost of living through the agency of large pile of debts that have accum- the parcel post, simplified by a less complicated system of ordering, is the Through effective organizations of plan recently submitted to the Senate milk producers in Michigan the 1917 by Senator Fletcher, of Florida. This contract prices of milk are materially new idea belongs to David Lubin, U. S. advanced over those of 1916. In Kala- delegate to the International Institute

The new system is based on a series

The customer in ordering goes to eral, even if the order is for sveral How much does it mean? No one differnt kinds of eatables he pays the clerk, who tears a portion off each slip the state is two cents per gallon, then indicated in the rack. These torn poron the 300,000,000 gallons, which in tions are mailed to the farmer. The round numbers is about what our dairy goods are then collected by the carcows furnish for the milk trade, the riers, who issue a credit slip to each total increase would reach the amaz- farmer they receive goods from. The ing figures of \$6,000,000. If, as is prob-farmer takes these credit slips to the ably the case, this advance amounts to post office and receives the cash and

One advantage of this system is that dairymen's income. At any rate, the goods have to be what is claimed for

NOTICE TO SHIPPERS OF SHELLED CORN.

Whenever any shelled corn is sold, of-the-way places reports are coming offered for sale, or consigned for sale by any of the grades of the official 30c to 50c per cwt. So widespread does grain standards of the United States for shelled corn, and is shipped in inber of men keeping cows in the state terstate or foreign commerce without this year who will not enjoy a larger inspection from a place in the United return from their dairy work, is going States at which there is no inspector licensed under the United States grain And to whom is the credit for this standards Act, to another place at work to be given? It is to those who which there is no such inspector, the have helped to show that former prices shipper is required by the rules and were too small to cover the cost of regulations of the Secretary of Agriproduction; to those who looked into culture under the act, to send a report the future of the dairy business and of such shipment to the Secretary of saw that something must be done to Agriculture at Washington, D. C., withhelp the producer; to those who spent in seven days. Failure to make the retime night and day to interest their quired report may subject the shipper neighbors; to those who listened and to the criminal punishment specified

and state organization; to the officers These facts are called to the attenwho labored to get 9,000 dairymen to Markets and Rural Organization of the man the guns in a campaign for prices United States Department of Agriculcommensurate with cost of production. ture, because it believes that some To this great host of men the debt of shippers do not fully understand the requirements of the regulation.

The reports to Department must gation be satisfied? There is one me- show the date of shipment; the kind dium that can be contributed by every of grain and its quantity; the grade dairyman which ought to pay in part by which it is sold, offered for sale, or this debt, and that is service of the consigned for sale; the points of shipsame kind as that by which the debt ment and destination; the name of the was created. Making strong and use- initial carrier; the car initial and numful the organizations which have been ber, or the name or other designation instrumental in securing this increas- of the vessel, boat, barge, or vehicle, ed income for the dairymen would be in which the grain is shipped; and the

MARKETING DAIRY PRODUCTS.

In a paper by Roy C. Potts, of the Federal Office of Markets and Rural Organizations, he says: "When monopolies prevent the operation of the law of supply and demand, then legislation must regulate distribution. It is economically wrong for the country facilities, i. e., creameries and factories to be owned by anyone but the producers. In the past to convert a creamery or factory into a distributing plant was starting a business in which the dairymen were not prepared to engage, so he sold his milk to distributing milk companies, who both condense and distribute fluid milk. They have paid a price that they could make a profit on both uses of the milk. For instance, they pay a flat price that will give them a profit on the lowest price they obtain, be it either for condensed milk or market milk shipped to cities. It follows that the world's demand and price for condensed milk may establish the price made by the large distributing companies. If these companies only bought milk to supply a retail trade for fluid milk, they could often pay higher prices to the producer. Doubtless conditions should be changed so the price received should be what the milk is worth for the purpose for which it is used. For these reasons producers will obtain higher prices when they are competent to own and operate their own shipping and distributing plants."

HOLDING OF APPLES, JANUARY 1, 1917.

Reports from 469 storages show that their rooms contain 2,386,975 barrels and 3,807,857 boxes of apples. Holdings reported from 364 storages showed 2,204,833 barrels and 3,542,322 boxes on January 1, as compared with 3,743,055 barrels and 3,209,503 boxes on the o55 barriels and 3,203,503 boxes on the same date a year ago, a decrease of 29.7 per cent. The barrieled apple holdings shows a decrease of 41.1 per cent and the boxed apples an increase of 10.4 per cent as compared with those of last year. Our report of January 1 last year showed the amount stored to be 9.8 per cent greater than on January 1, 1915.

The holdings have decreased 10.4

ary 1, 1915.

The holdings have decreased 10.4 per cent since December 1 as compared with a decrease of 12.0 per cent during December, 1915, and 14.0 per cent during December, 1914. AUTO DE LA COMPONIA DEL COMPONIA DE LA COMPONIA DE LA COMPONIA DEL COMPONIA DE LA COMPONIA DEL COMPONIA DE LA COMPONIA DEL COMPONIA DE LA COMPONIA DEL COMPONIA DEL

Crop and Market Notes

Michigan.

Gladwin Co., Jan. 8.—Weather is mild and snow is going fast. Most farmers are getting up buzz wood. More live stock is being fed this winter than usual. No products to be sold to speak of. Beans are up a little, being \$6.25; hay \$11@12; corn 97c; butterfat 38c; cattle 4½@5c; hogs 8c.

Livingston Co., Jan. 8.—We are enjoying fine winter weather and farmers are busy getting up their summer's wood supply. The recent thaw left the ground nearly bare, but wheat is still covered lightly with snow. There is plenty of roughage on hand, but owing to the high price of grain not much stock is being fed this winter. Not much produce is going to market. The farmers in this section have awaited with much interest the outcome of the conference with the Detroit milk dealers. An agreement was finally reached the dealers agreeing to pay an average of \$2.10 per cwt for the coming year. Wheat \$1.80; rye \$1.35; beans \$6.25; butter 34c; eggs 35c.

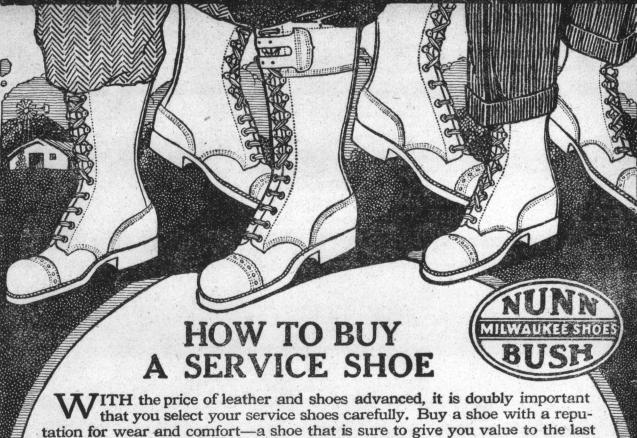
Calhoun Co., Jan. 9.—There is scarcely any snow on the ground at present. Roads are nearly solid ice. Most farmers are cutting wood for their own use. There is not much feeding of stock. Rough feed is quite plentiful. Not very much farm produce to market. Potatoes around \$2.00; beans \$5.85; ground feed \$1.85; corn 90c; wheat \$1.80; eggs 38c; butter 30c; clover seed \$9.85; rye \$1.30; hay \$8@9.

Branch Co., Jan. 8.—No snow on the

\$1.30; hay \$8@9.

Branch Co., Jan. 8.—No snow on the ground; weather mild and roads fine. Some are harvesting ice, which is now about eight inches thick. Considerable stock on feed. Hay \$8@10; wheat at \$1.65; corn \$1.10; oats 52c; potatoes \$1.50; butter 30c; eggs 36c; beans \$5.25; butter-fat 39c. Considerable fall \$5.25; butter-fat 39c. Considerable fall plowing was done and many are taking advantage of good weather and are hauling manure. Quite a number of renters to move in the spring.

Van Buren Co., Jan. 8.—There is very little snow on the ground. About the usual amount of feeding stock on (Continued on page 30).



tation for wear and comfort—a shoe that is sure to give you value to the last penny-a pair of FARM-WEARS. Built especially for farm service-of solid leather. Double tanned to

RESIST URIC ACID

No cracked leather from sweaty feet or from tramping in the barnyard. FARM-WEAR shoes look better, feel better on your feet and wear longer. Standard lasts—four heights. Black and Chocolate. Buy a pair of FARM-WEARS and the extra wear will more than offset the general rise in shoe leather prices.

Fill in the coupon and have your carrier collect it tomorrow

Nunn & Bush Shoe Company

MILWAUKEE, WISCONSIN

Nunn & Bush Shoe Co., Dept. 77 Milwaukee, Wis. Gentlemen.—Please tell me where I can see and try on a pair of "FARM WEAR" shoes. I prefer a shoe 6"____, 8"___, 12"___, 16"__high. (Check height preferred.) Name Address

RM-WE OES FOR FARM WI

My dealer's name is_

merican fence

Woven with a mechanically hinged joint. Big, full gauge wires—full weight—full length rolls. Superior quality galvanizing-proof against hardest weather conditions.

American Steel Fence Posts last a lifetime. Hold fence secure against all conditions.

Dealers Everywhere

AMERICAN STEEL & WIRE COMPANY

Chicago New York Pittsburgh Cleveland Denver Awarded Grand Prize at Panama Pacific International Exposition The Supreme Award of Merit



VICTOR SANITARY

metai. mande parts soon distantian. Vii churn all quantities up to 4 gallons in 6 minutès. Shipped from factory to you 80 85.55 on 30 days 'trial. Thomands in use. KANT-KLOG SPRAYERS, air pressure. \$6.00 Fost Fruit. GUARANTEED COLUM-BIAN RED INNER TURES for FORDS, 53 32, 51.56 and 30x31-2, \$2.55; all ether

COLUMBIAN MAIL CRANE CO.

New Ford Joke Book 1917

All the latest jokes on the Ford Auto. Hundreds of them and all good ones. Spring a new one on your neighbors. Large book with colored cover by mail, 10c NEW ENGLAND PUBLISHING CO. Box 25 So. Norwalk, Conn

HARNESSOur Own Make Out of No. 1 Oak Leather, we guarantee them absolute ly satisfactory. If your dealer does not handle them, write direct to us. SHERWOOD HALL. Co., Ltd. Ionia and Louis St., Grand Rapide, Mich.



ENORMOUS PROFITS TAKING ORDERS FOR



TOILET ARTICLES, PERFUMES. SPICES, FLAVORS. SOAPS. AND SPECIALTIES. Over 90 big every day sellers. Wanted in every home. Good repeaters. Exclusive territory to MEN OR WOMEN. All or spare time. Why be a laboring drudge when you can enter an easy permanent business with a big income? NO CONTRACT. NORIGE REQUIRED. NEED NOT INVEST ONE CENT. OUTFIT FREE. EXPERI-NEED NOT INVEST ONE CENT. OUTFIT FREE. EXPERI-ENCE NOT NECCESSARY. Full instructions given. The chance of a lifetime. Don't miss it. Territory going fast. Write for particulars giving age and occupation. DUO FACTORIES, Dept. H.2, No. Java, N.Y.

WRITE FOR OUR PRICELIST

We Buy WASTE PAPER and all Kinds of Scrap Material.

THEODORE HOFELLER & CO. Dept. M., Buffalo, N. Y.

When Writing to Advertisers Please Mention The Michigan Farmer.

Markets.

GRAINS AND SEEDS.

January 16, 1917.

Wheat—Although values have fluctuated during the week, the situation is quite firmly established in the hands is quite firmly established in the hands of the sellers. From a supply and demand standpoint the market could hardly be stronger. The demand from abroad is growing as the season advances, and everything available, is being taken readily and forwarded for early shipment. What is taken by buyers to be a significant thing in the foreign grain situation is the disconforeign grain situation is the discontinuance of quotations by the English markets. The amount of grain in the farmers' hands is reported to be small. A year ago No. 2 red wheat was quoted on the Detroit markets at \$1.31 per bushel. Last week's Detroit quotations

No. 2	No. 1	Y
Red.	White.	May.
Wednesday1.91	1.86 1.	951/2
Thursday1.94	1.89 1.	981/2
Friday1.90½	1.85 1/2 1.	95
Saturday1.92		95
Monday1.921/2		951/2
Tuesday1.95½	$1.90\frac{1}{2}$ 1.	981/2
Chicago.—May wheat	\$1.881/8;	July
\$1.51\(\frac{1}{4}\); Sept. \$1.36\(\frac{1}{4}\).		

\$1.514; Sept. \$1.364.

Corn.—This market has maintained values above the dollar mark during the week and there seems to be at present a great deal of strength on the bull side of the trade. Foreigners are anxious for the grain, which keeps the market firm in the face of increased supplies from country places. A year ago No. 3 corn was quoted at 75c per bushel. Last week's Detroit quotations were:

No. 3 No. 3 No. 3 No. 3

	140.0	110.0
	Mixed.	Yellow.
Wednesday	1.021/2	1.03 1/2
Thursday	1.02	1.03
Friday	1.011/2	1.021/2
Tuesday	1.01%	1.021/2
	1.01	1.02
Tuesday	1.01	1.02
Chicago.—May corn	99 1/2 C	per bu:
July 981/4 c.		

		4	Standard.		hite.
Wednesday			. 60		591/2
Thursday			591/2		59
Friday			. 60		59 1/2
Saturday			. 591/2	5.4	59
Monday					59
Tuesday					59
ChicagoMay	a	t	s 573/4 c 1	oer	bu;
July 551/4 c		1		Y SEE	

Ryc.-Ryc has advanced 3c during

Rye.—Rye has advanced 3c during the week, and cash No. 2 is now quoted at \$1.46 per bushel.

Beans.—There is a fair demand on the local market for beans and the trade remains steady at last week's advanced quotations which are: \$6.40 per bushel for immediate and prompt shipment, and \$6.25 for February offerings. At Chicago trade is firm with a good general demand at \$6.60 for hand-picked Michigan pea beans; red kidneys are steady at \$6.90@7.10.

Peas.—Trade steady, offerings light with field peas, sacks included quoted at \$2.75@3 per bushel.

Seeds.—Prime red clover \$10.80; March \$10.85; alsike \$11; timothy seed \$2.50 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$9.80; seconds \$9.60; straight \$9.40; spring patent \$10.50; rye flour \$8.80

poultry has caused a general increase in prices. No. 1 spring chickens 21@ 22c; No. 2 do 19@20c; No. 1 hens 20@21c; No. 2 do 19@20c; small do 14@15c; ducks 22@23c; geese 20@21c; turkeys 280

turkeys 28c. Chicago.—Market continues firm with prices for fowls slightly higher. Turkeys 12@22c; fowls 15@19c; spg chickens 19c; ducks 15@19c; geese 14

Eggs.—Offerings of fresh eggs were light and higher prices resulted Firsts 48; current receipts 38@43c.
Chicago.—A firm feeling continues for strictly fresh eggs, with prices higher. Fresh firsts are quoted at 48@49c; ordinary firsts 38@43c; miscellaneous lots, cases included 40@48c; Aprils storage naid 38c Aprils, storage paid 38c.

FRUITS AND VEGETABLES.

Apples.—Market steady with prices slightly lower. Baldwins \$5.25@5.50; Spy and King \$5.75 for the best. At Chicago the trade is light on account of cold weather. Prices unchanged. No. 1 stock sells at \$3@6 per bbl; No. 2 at \$2@2.50.

2 at \$2@2.50.

Potatoes.—Demand is good and supply light. Prices are higher. The quotations at Detroit in carlots are \$1.85 @1.90 in sacks. At Chicago the market is firm and higher. Demand is good for sound, clean stock. Michigan white potatoes are quoted at \$1.80@1.90. At Greenville the farmers are getting \$1.70 per bushel.

WOOL.

Trading continues to grow stronger with supplies inadequate. Manufacturers are getting more anxious for raw material as business goes on expanding. Prices are higher and firm.

GRAND RAPIDS.

The bean market seems to be holding steadily at \$6; potatoes at \$1.50. Onions and cabbages are also high, bringing \$5@6 per cwt. The egg market is still firm at 38@40c but spring is on the way and with warmer weather the receipts of fresh eggs will increase. Greenhouse lettuce is selling at a shilling per pound. The apple market ranges from \$1@1.50 per bu.. Oats.—While there is a foreign demand for oats, the cereal is less firm at a shilling per pound. The apple market ranges from \$1@1.50 per bu., stocks in this country. The strength of the other cereals, however, helps to maintain a firm undertone in the oat early this week at the mills, rye at deal. A year ago standard oats were quoted at 52c per bushel. Last week's Detroit quotations were:

No 3

DETROIT EASTERN MARKET.

The market was small on Tuesday morning but demand was good especially for apples, which sold at \$1@1.25 per bu; carrots \$1.65; cabbage \$1.75@ 2.50; pork 15c lb; eggs 65c. Loose hay offered more freely with prices varying from \$16@19 per ton.

LIVE STOCK MARKETS.

Buffalo.

January 15, 1917. Receipts here today as follows: Cat

Receipts here today as follows: Cattle 110 cars; hogs 50 d. d.; sheep 22 d. d.; calves 600 head.

With 110 cars of cattle today there were very few shipping cattle in the run and what were here sold about steady. There was a strong demand for the butcher steers and heifers and the medium and low-priced kind and they sold strong. We look for a fair run of cattle next Monday and a good trade.

We had a very light run of hogs to day, owing chiefly to storm conditions which delayed all trains. The run was so light and prices so high that our packers were driven entirely out of the trade. The bulk of the sales on the best were ground \$1150 with a few. Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$9.80; seconds \$9.60; straight \$9.40; spring patent \$10.50; rye flour \$8.80.

Feed.—In 100 lb. sacks, jobbing lots are: Bran \$32; standard middlings \$35; cracked corn \$43; coarse corn meal \$42; corn and out chop \$38 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$14.50@15: standard timothy \$13.50@14: No. 2 timothy \$10@11; tight mixed \$13.50@14; No. 1 clover \$12@12.50.

Straw.—In cars at Detroit, rye straw \$9@10; wheat and out straw \$8.50@

9 per ton.

Figure 10 the bulk of the sales on the best were around \$11.50, with a few selected a little more; pigs and lights \$10.25; stags \$8@9. Everything sold that arrived in time for market and with a liberal run in sight for Tuesday it does not look like we would hardly be able to hold hogs at steady prices. We had another light run of lambs today and the market was active with prices 10c higher than the close of last week. Look for shade lower prices (cull to common \$9@14; yearlings \$8@ 13.50@14; No. 1 clover \$12@12.50.

Straw.—In cars at Detroit, rye straw \$9.60? 50 week \$9.60; straight in time for market and with a liberal run in sight for Tuesday it does not look like we would hardly be able to hold hogs at steady prices. We had another light run of lambs today and the market was active with prices 10c higher than the close of last week. Look for shade lower prices (cull to common \$9@14; yearlings \$8@ 13.50@14; No. 1 clover \$12@12.50.

Straw.—In cars at Detroit, rye straw \$1.50@15.50@15.50; heavy

receipts.

receipts.

we quote: Best lambs \$14.50@14.60:

cull to common \$9@14; yearlings \$8@

cull to common \$9@14; yearlings \$8@

cull to common \$9@14; yearlings \$8@

cull to common \$9@0.750; ewes \$9@9.75;

cull to common \$9.00.750; wethers \$10.25

per ton.

DAIRY AND POULTRY PRODUCTS.

preceipts.

cull to common \$9.00.750; ewes \$9.00.750;

cull to common \$9.00.750; ewes \$9.00.750;

per ton.

per ton.

per ton.

per ton.

per

Butter.—The market is firm with supply light. Creamery extras 39c; do firsts 36½c: packing stock 27c.
Elgin.—Market conditions are somewhat easier, prices slightly lower. The price, based on sales, is 38½c.
Chicago.—The feeling is unsettled, and prices are irregular and lower. Ex-

tra creameries quoted at 37c; extra today, the cattle market was called firsts 36@36½c; packing stock 27½@ steady to firm, depending upon quality 28½c per lb.

Poultry.—Scarcity of all kinds of poultry has caused a general increase received last week averaged 201 lbs. in prices. No. 1 spring chickens 21@ Sheep and lambs were scarce and higher, with prime yearlings taken at \$13 another high record breaker.

Cattle prices were placed on a very firm basis last week, the cold weather having imparted more life to the demand for beer throughout the country, and sales were made at an extremely high scale of prices for all descriptions high scale of prices for all descriptions from the commonest to the choicest beeves. The greater part of the steers crossed the scales at \$8.50@11, and the choicer descriptions of heavy long-fed steers found ready sales at \$11@11.80, the choicer lots of yearlings going at \$10.50@11.35. A class of steers grading as good sold at \$10@10.95, with sales of a medium grade at \$9 and upward, while fair light weight killers brought \$8.50 and upward, with sales all the way down to \$6@7 for a very inferior class of steers. Butcher stuff had a brisk demand at ruling high pricall the way down to \$6@7 for a very inferior class of steers. Butcher stuff had a brisk demand at ruling high prices, with cows selling at \$5.75@8.75 and heifers at \$5.25@10.50, prime little yearling heifers going at \$9.25 and upward. Cutters were extremely good sellers at \$5.20@5.70, while canners sold at \$4.50@5.15 and bulls at \$5.25@8.25. Calves sold at higher prices than ever before in the history of the Chicago market, light vealers finding buyers at \$13@14.25 per 100 lbs. and sales all the way down to \$5@9 for the ordinary to good class of heavy calves. The stocker and feeder traffic became unusually animated, and as the offerings failed to show any corresponding increase, prices advanced sharply all along the line, with stockers going at \$5.75@8.10 and feeders at \$7.35@8.95. These cattle brought much the highest prices seen this year, and the best beef prices seen this year, and the best beef cattle also at a new high record for the present month, with light offerings of prime steers and a strong demand. Packers were strong competitors against feeder buyers for steers down

against feeder buyers for steers down from \$9.

Hogs were in greatly increased supply last week, the recent advances in prices evidently stimulating owners to ship in more liberally, and on Wednesday the receipts rose to 72,577 head. The generous offerings failed to discourage sellers, however, and they experienced such a good local and shipping demand that prices held up remarkably well. The week's highest price was \$10.90, the highest quotation since last September, and the market continued to be greatly strengthened by the extremely large demand for heavy and light hogs of good to prime quality to ship to the eastern packing points Buyers paid a large premium for heavy hogs, which were daily market toppers, while the best light hogs sold at quite a discount. All kinds of hogs and pigs sold far higher than in former years. At the week's close hogs sold the highest yet seen this season, prices ranging at \$10.15@10.60 for light bacon lots, \$10.65@10.75 for light shippers, \$10.85@10.95 for heavy shippers, \$10.55@10.85 for heavy packers, \$10.95@11.35 for stags and \$8@10 for pigs.

Lambs, yearlings, wethers and ewes

pigs.

Lambs, yearlings, wethers and ewes continued their regular upward movement in prices during the past week, with an active local and shipping demand and utterly inadequate receipts. Even the medium to pretty good kinds sold decidedly higher than heretofore, these being taken largely as substitutes for the best live muttons, while feeding and shearing lambs sold hightutes for the best live muttons, while feeding and shearing lambs sold higher than ever before in the history of the market. Prime mutton lambs brought higher prices than ever before, and further advances were predicted in the near future. Lambs advanced to \$14.15, but closed at \$11.0750 at \$12.750 at \$12.750 at \$12.90 and wethers at \$8.010.65; ewes at \$5.750 at \$1.25; bucks at \$7.50.850. Yearlings advanced 25.050c and sheep 15.025c.

CROP AND MARKET NOTES.

(Continued from page 79). hand. There is a good supply of hay, but roughage is not very plentiful. The larger part of grain and beans is sold and about 60 per cent of the potatoes. Wheat, red \$1.72@1.75; corn 90c@\$1; beans \$5.50@6; hay, loose \$12; beef live 4@71/2c; hogs \$8.50@9; butter, dairy 33c; eggs 37c; potatoes \$1.50.

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during December suffered injury from any cause." 19 correspondents in the state answer "Yes" and 325 Chicago.

January 15, 1917.

Cattle. Hogs. Sheep.
deceipts today. 23,000 67,000 14,000 ast week. 67,035 272,495 70,975 ame wk 1916 . 54,793 269,725 93,889 wheat marketed by farmers in December. With estimated fairly large receipts ber at 65 flouring mills was 77,569 and With Green and Section of the state answer "Yes" and 325 "No," and in answer to the question. "Has the ground been wel! covered with snow during December," 294 correspondents throughout the state answer "Yes" and 325 "No," and in answer to the question. "Has the ground been wel! covered with snow during December," 294 correspondents throughout the state answer "Yes" and 325 "No," and in answer to the question. "Has the ground been wel! covered with snow during December," 294 correspondents throughout the state answer "Yes" and 325 "No," and in answer to the question. "Has the ground been wel! covered with snow during December," 294 correspondents throughout the state answer "Yes" and 325 "No," and in answer to the question. "Has the ground been wel! covered with snow during December," 294 correspondents throughout the state answer "Yes" and 43 "No" and become independent with no capital interest. White today for free catalogy. "Ones" NaT'L School of the business taught in 5 weeks. White today for free catalogy. "Ones" NaT'L School of the business taught in 5 weeks. White today for free catalogy. "Ones" NaT'L School of the business taught in 5 weeks. "No," and in answer to the question. "Has the ground been well covered with some distributions of the state answer. "Yes" and 325 "No." and in answer to the question. "Has the ground been well covered with no capital interest. The covered with no capital interest. The covered with some and ground been well covered with no capital interest. The covered with no capital i

at 82 elevators and to grain dealers 97,683 or a total of 175,252 bushels. Of this amount 126,655 bushels were marketed in the southern four tiers of counties, 38,743 in the central counties and upper peninsula. The estimated total number of bushels of wheat marketed in the five months (August-December), was 4,750,000. Forty-six mills, elevators and grain dealers report no wheat marketed in December.

The average condition of live stock

marketed in December.

The average condition of live stock in the state is reported as follows, comparison being made with stock in good, healthy and thrifty condition: Horses and sheep 96; cattle 95; swine 93.

The average prices for the state on January 1 of some of the principal farm products were as follows: Wheat per bushel was \$1.59; rye \$1.26; corn 99c; oats 54c; hay per ton \$10.16; fat cattle \$6.56 per cwt; fat hogs \$8.95 per cwt; dressed pork \$11.52 per cwt.

The price of each class of horses was as follows: Under one year old \$47.91; between one and two years old \$76.76; between two and three years old \$111.54, and three years old and over \$145.84.

Milch cows were worth \$62.94 per head.

Cattle other than milch cows, under one year old \$19.02; between one and two years old \$32.10; between two and three years old \$47.88 and three years old and over \$60.87.

old and over \$60.87.

Sheep under one year old \$7.66 and one year old and over \$8.17.

Hogs not fattened \$7.80 per cwt.

The price of wheat is 53c; rye 39c; corn 26c and oats 15c higher than one year ago and hay per ton \$1.91 lower.

The average prices of horses, etc., one year ago were as follows: Under one year old \$59.90; between one and two years old \$80.20; between two and three years old \$118.49 and three years old and over \$156.47.

old and over \$156.47.

Milch cows were worth \$58.16 per

Cattle other than milch cows, under one year old \$18; between one and two years old \$29.09; between two and three years old \$44.24 and three years old and over \$55.44.

Sheep under one year old \$4.68 and one year old and over \$5.51. Hogs not fattened \$5.42 per cwt.

Fine Grinding? Sure!



FEED MILL L Self-Sharpening Silent-Buh

excels all other millsinfine grinding. Why? Because of the wonderful Letz Kriss-Kross Plate. You should come in and take a look at that plate. You never saw anything like it to get results. The Letz will grind wild oats, wheat screenings, millet seed, grass seed, rye, barley, corn on the cob with or without husks, Kafir corn in the head, Milo maize, alfalfa hay—fine as dust—practi-cally as fine as flour without injuring the plates. One customer says he can grind shelled corn and oats into flour, for hog feed, in one grinding. With other mills he would have to grind it twice.

Letz Self-Aligning Plates

are quickly changeable, silent running and sharpen themselves when run together empty. One set of buhrs grinds 1000 to 3000 bushels of grain—outlasts three to five sets of ordinary plates.

We sell the Letz because when one is sold it gives satisfaction and sells another-

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market. January 18, 1917. Cattle.

Receipts 1651. Receipts on all departments at the local stock yards dropped off considerably this week and it looks as though the heavy runs were over for the winter. Prices are so high that if there were any cattle in the state they surely would be marketed now when feed of all kinds is high and scarce.

In the eattle division the quality was good and the market the most active in some time at an advance of 25c over last week on all grades but milch cows which are very dull and few are wanted. The cold weather, cow dealers claim, is giving good cows pneumonia, and eastern buyers are afraid to risk buying them for shipment on account of poor railway service. The close was strong as follows: Best heavy steers \$8.50@9.25; best handy weight butcher steers \$7.50@8.75; mixed steers and heiters \$6.50@7; butcher cows \$5.25@6.50; best cows \$6.50@7; butcher cows \$5.25@6.50; best cows \$6.50@7; butcher cows \$5.25@6.50; best heavy bulls \$6.50@7; bologna bulls \$5.50@6.50; stock bulls \$5.60@6.75; mikers and springers \$40@75.

Bishop, B. & H. sold Stevenson 13 butchers av 623 at \$6.50 at \$4.75, 2 do av 252 at \$4.75, 2 do av 1050 at \$5.25, 6 do av \$40 at \$4.90, 4 do av 982 at \$5.25, 6 do av \$75 at \$5.50, 1 heifer wgh 620 at \$6.1 steer wgh 1060 at \$7.75; to Applebaum 6 butchers av 560 at \$5.50, 1 heifer wgh 620 at \$6.1 steer wgh 1060 at \$7.75; to Newton B. Co. 1 steer wgh 1120 at \$8.50, 4 do av 1017 at \$7.50, 2 do av 909 at \$6.50, 2 butchers av 755 at \$5.25; to Resnick 7 cows av 975 at \$5.50; to Breitenbeck 12 steers av 1041 at \$8.25; to Newton B. Co. 3 cows av 977 at \$5.6 cows and bulls av 866 at \$5.10 butchers av \$62 at \$6.50, 1 butchers av \$62 at \$6.50, 1 do wy 117 at \$7.50, 2 do av 907 at \$5.6 cows and bulls av 866 at \$5.10 butchers av \$10 at \$6.50, 1 do wy 907 at \$5.6 cows and bulls av 866 at \$5.10 butchers av \$10 at \$6.50, 1 do wy 907 at \$5.6 cows and bulls av 866 at \$5.10 butchers av \$10 at \$8.50, 1 do wy 117 at \$8.50, 1 do wy 907 at \$5.6 cows and bulls av 866 at \$5.10 butchers av \$123 at \$9.50, 1 do wy 907 at \$6.00 av 907 at \$5.60 av 907 at \$5.60 av 907 at \$6.50, 1 do wy 907 at \$6.70 av 908 at \$6.50, 1 do wy 907 at \$6.70 av 908 at \$6.50, 1 do wy 907 at \$6.70 av 908 at \$6.50, 1 do wy 907 at \$6.70 av 908 at \$6.50,

130 at \$13.50.

Sheep and Lambs.

Receipts 5449. The sheep and lamb trade was active and prices were the highest ever paid on this market, one load of 220 bringing \$14 per cwt. on Wednesday. On Thursday the quality was not quite so good and bulk of the best lambs brought \$13.75@13.85. The best lambs brought \$13.50 13.85. The close was steady. Best lambs \$13.750 13.85; fair lambs \$12013; light to common lambs \$11.50012; fair to good sheep \$809; culls and common \$50

Erwin, S. & J. sold Nagle P. Co. 46 lambs av 85 at \$14, 4 sheep av 100 at \$8.25, 31 do av 75 at \$7.50, 6 do av 115 at \$7.50, 79 lambs av 75 at \$13.75, 10 do av 60 at \$12, 48 do av 75 at \$13.75, 13.25

Haley & M. sold Nagle P. Co. 116 lambs av 110 at \$13.75, 4 do av 70 at \$9; to Mich. B. Co. 16 sheep av 115 at \$8.75.

Hogs.

Receipts 4324. In the hog department the market was active and 40@ 50c higher than they were a week ago on all grades, pigs selling at \$9.50@ 10 and mixed grades at \$10.50@11, the bulk of sales being around \$10.90.



Send This **COUPON TODAY**

Your Soil Needs Lime

As Fine as Flour

The finer your lime stone is pulverized, the more quickly, the more thoroughly it works into the soil.

Solvay Guarantees that 95% of its Pulverized Lime Stone passes through 50-mesh screen. This means that practically every particle dissolves quickly into the earth—every particle works to sweeten the soil, to liberate needed Potash, etc.

Coarser particles take longer to work in, and cannot be so even the distributed through the soil—while the cost of hauling and spreading is just as great. Use Solvay Pulverized Lime Stone—as fine as flour on your soil and insure fuller, richer crops.

Get our lime book free, containing full information on liming the soil. Then if you have a special problem write our experts for free advice.

The Solvay Process Company

180 West Jefferson Ave.,



Farmers Ship Us Your Cream

We have a daily capacity of 5000 lbs. Butter. We are located nearly across the street from the Ford factory and have a large sale of Eutter and Butter Milk which enables us to pay the very highest market price for butterfat at all times. We will pay this week 42½c for butterfat delivered in Detroit. We pay the same day we receive the cream, and will return the cans the next day. We want cream buyers also. Give us a trial shipment. Write for shipping tags.

O. A. ELLIS CREAMERY Highland Park, Mich.

EGG'S We want new laid stock and can pay top prices for them.

AMERICAN BUTTER & CHEESE CO. Detroit, Mich

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

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons Co., 623-625 Wabarb Bldg., Pittsburgh Pa

SHOEMAKER'S

Best Paying Varieties

Hardy Northern raised Chickens,
Ducks, Geese and Turkeys, Purebred heavier to ying strains. Fowls, Eggs,
Incubators, all at low prices. Large new
Poulty Book and Breeders' Complete Guide Free.
W. A. WEBER, Box 20, Mankato, Minn.





62 BREEDS, Ducks, Geese, Turkeys. Hardy northern raised, vigorous, beautiful Fowls, eggs, incubators, at low prices. America's Pioneer Poultry Farm; 23 years exp. Large fine Annual Poultry Book and Catalog FREE. F. A. Neubert, Box 692, Mankato, Minn.

POULTRY.

Barred Rocks
Circular Free. Fred Astling. Constantine, Mich.

Barred Rock Cockerels; Cocks and Hens. Four w. C. Coffman, R. 3, Benton Harbor, Michigan.

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

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

Blue Barred Rocks Cockerels, full blood, \$2 each. Myron Shorten, Quimby, Mich. B. R. Cockerels best breeding: \$3 each, 2 for \$5, special price on a number.
A. A. WOOD & SON. SALINE, MICH.

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

Breeding Cockerels White, Buff, Leghorns, R. I, Reds. Prices reasonable, Sunnybrook Pou, try Farms, Hillsdale, Michigan.

CHICKS, are booking orders now for spring de Freeport Hatchery, Box 12, Freeport, Michigan

Choice White Orpington Cockerels from prize win ing pens \$2 to \$5. Extra fine pullets \$2. Satis faction guaranteed. Mahlon Smith, Manchester, Mich

"200-EGG" PEDIGREE WHITE LEGHORNS

Several hundred choics White Leghorn pullets and cockerels for sale. These are from our "Bred-to-lay" strain, all sired by Missouri Experiment Station males with pedigrees of 200 to 274 eggs in one year. Fullets \$1.00 to \$1.50 each. Cockerels \$2.00 each of \$3.50 each. Cockerels \$2.00 each of a station of satisfied customers. Book you are at once for eggs for hatching and bady chicks of quality. Catalog. Michigan Poultry Farm, Lansing, Michigan.
"Michigan's Largest Poultry Farm"



FERRIS WHITE LEGHORNS

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

Geo. B. Ferris, 934 Union, Grand Rapids, Mich.

Fowler's Buff Rocks A few choice sale. From \$2 to \$5. Also eggs in season. White Holland Turkeys all sold R. B. Fowler, Hartford, Mich.

Buff Leghorns Cockerels, cock birds, hens, pens or pullets. All at very reasonable prices. Dr. William A. Smith, Petersburg, Mich.

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

HARRISON WHITE LEGHORNS

\$20.00 for 20 yearlings or pullets. Cockerels 75c to \$1.50 Prices on these fine birds will be higher soon. HARR4SON LEGHORN FARM, Shelby. Mich.

JOHN'S Big Beautiful Barred Rocks are all hen-hatched, developed quick, good layers, each \$3; pair \$5; sold on approval. Circulars, photos. John Northon, Clare, Mich.

Mammoth Bronze Turkeys and Toulouse Geese. A few Berk shire gilts and sows. Chase Stock Farm, R. 1, Marlette, Mich

Pine Crest, S. C. White Orpingtons. Winners again stock for sale. Buy the best. MRS. WILLIS HOUGH. Pine Crest Farm, Royal Oak, Michigan.

RHODE ISLAND REDS and PLYMOUT i ROCKS Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00: 100, \$5; 120, \$6, Mammoth Bronze Tom Turkeys, 8 to 881bs. according to age \$6 to \$25, 10 eggs \$3. A. E. Cramton, Vassar, Mich.

Rose and Single Comb Fine stock, prices reasonable. O. E. Hawley, Ludington, Mich.

Rose Comb Rhode Island Red Cockerels. Rose and and hens. JENNIE BUELL, Ann Arbor, R. 8., Mich

R. I. Red Chicks and Eggs. Both Combs. Dark Red. more Michigan farmers than any other strain. Catalog free. Interlakes Farm, Box 39, Lawrence, Mich.

SILVER, Golden and White Wyandottes. Choice young considered. Ionia and Lansing winners. C.W. Browning, R. 2, Portland, Mich.

S. C. Rhode Island Cockerels, pure bred-fine large care red birds, will improve your flock. Price \$2.50 each. Alfred Deichneann, Pigeon, Mich., R.3.

S.C. W. Leghorn Eggs for Hatching, also breeding viscock. If you want Leghorns that will lay and win write us. "Hill-Crest Poultry Farm," Ypsilanti, Mich.

While Wyandottes cocks and cockerels snow white from fine stock and A I layers, \$2, \$3, and \$5 each.

DAVID RAY, 202 Forest Ave. Ypsilanti, Michigan

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

Bourbon Red Turkeys. Toms \$6, Hens \$4. White each, 8 for \$5. Collar Bros., Conklin, Michigan. WHITE CHINA GANDERS FOR SALE, \$3

Also a few R. C. Brown Leghorn hens, \$1.50 each. Mrs. CLAUDIA BETTS, R. 1, Hillstrie, Mich FOR SALF—WHITE M. PEKIN DRAKES CHAS. KLFTZLEN. BATH, MICH.

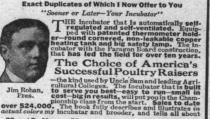


graphs and letters from delighted usr after year and won many prizes, including Silver "Tycos" Cup. Tells how E. F. Waltermer of I-received First Prize in "Poultry Items" 1916 Hatch-Contest for two 100 per cent hatches made with his

World's Champion

Belle City

Incubator



My 10-Year Money-Back Guarantee My 1-2-3 Months' Home Test Plan My Low Price—Freight Prepaid
will want to know just what this means to you before
buy a hatching outlit. With the book comes full details of

My \$1000 Gold Offers

My \$1000 Gold Offers

The chance of a lifetime to make extra money with a hatching outit. Belle City users everywhere make big money year after year. What I have done for others, I can easily do for after year. What is have done for others, I can easily do for one of the big free book—it tells what you need to know—a postal will do, write today. Jim Rohan, Pres. Belle City Incubator Co., Box 14 Racine, Wis.





IF NOT SATISFIED Wisconsins are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1917 catalog fully describing this outfit A postal brings it by return mail.

180-Egg Incubator and Brooder both \$12.75
WISCONSIN INCUBATOR COMPANY
BOX 104, Racine, Wis.



Stop Hatching Weak Chicks

WITH CHEAP INCUBATORS Remember, it is not how many you hatch that counts, but how many you raise. A Queen costs but little more, and the extra chicks that live and grow soon pay the difference.

Queen Chicks Live and Grow Most of the chicks you lose in the first two week die because they did not have proper vitality or strength to start with. Queen Incubators are famous for big hatches of strong healthy chick that live and grow. The American Poultry Journa American Poultry Journa



Write For Jim Rohan's Big Free Poultry Book
"Hatching Facts"
It is filled from cover to cover with facts, proofs and information that will start youright. It tells how you can be successful raising chickens. It shows hundred of active and contented. Irregular wheel will keep active and contented. Irregular feeding will cause them to become restless, impair their digestion and prevent the productive organs from performing willet, lbs.

South of the production of grain of inferior feeding value. An efficient ration of grain feeds for feeding the hens in the litter consists of:

Wheat, lbs.

South of the production of grain of inferior feeding value. An efficient ration of grain feeds for feeding the hens in the litter consists of:

Hulled oats, lbs.

South of the productive organs from performing willet, lbs.

South of the production of grain of inferior feeding value. An efficient ration of grain feeds for feeding the hens in the litter consists of:

Hulled oats, lbs.

South of the productive organs from performing willet, lbs.

South of the production of grain of inferior feeding value. An efficient ration of grain feeds for feeding the hens in the litter consists of:

Hulled oats, lbs.

South of the productive organs from performing willet, lbs.

South of the production of grain of inferior feeding value. An efficient ration of grain feeds for feeding the hens in the litter consists of:

Hulled oats, lbs.

South of the productive organs from performing will experience the producti less, impair their digestion and prevent Oats, lbs....
the productive organs from performing Millet, lbs.... their natural functions.

The hen cannot be coaxed up to a profitable egg yield unless she has a waste.

A Variety of Feed Best.

grains. One leading principle in feed- these conditions by feeding her grain

One cannot adopt any fixed rule of variety. She tires of foods if she has how much to feed. In a spell of cold free access to them. But variety may weather they will want more, in modbe overdone. The demands on her sys- erate weather less. If they are laying tem are such that she wants nearly all more eggs this week than last they of the plain, wholesome food she can will want more feed and must have it digest. Corn, wheat, oats and buck- if they are to lay still more the followwheat are excellent foods, but if the ing week. To keep the hens hungry hens will scratch longer and deeper and yet well fed is where the science and eat more of these grains and lay of feeding enters in. Gradually coax more eggs if there is a wider variety, the hens into eating to the full capathen it will pay to buy such feeds as city of their digestive ability and they kaffir, millet, sunflower seed and are bound to lay heavily. If we induce cracked rice, and yet to depend upon the hens to eat large amounts of food these expensive feeds as a prominent we must endeavor to approximate part of the regular ration is sheer spring conditions, giving her food bit by bit and making her surroundings pleasant and furnishing her with plen-It is better to feed a mixture of ty of exercise. We can approximate



Twelve Thousand Birds were Shown at Madison Square Garden Show.

their favorite feeds. Table and kitch- the amount of farm manure. en scraps are very attractive tidbits. Hens are especially fond of these meatspoil good rations by adding garbage readily eaten. This enables each fowl floors.

labor and feed. A simple ration and four o'clock in the afternoon during system of feeding fits farm poultry the short days in winter. keeping. It is always better to avoid flock would not be balanced properly for another with hens of different ages, breed, development and housing.

A Good Ration!

made up of screenings and damaged ed to produce the same results. In our

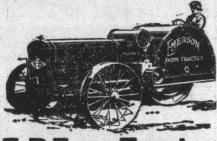
ing is that a hen should never have in dry, clean litter. Clean straw, milher crop full of one kind of feed. Indi- let, alfalfa and coarse shavings make vidual hens have different tastes. By good material for the scratching room. feeding a number of kinds of grain in For young pullets six inches of litter is the litter the hens are induced to work sufficient. Ten or twelve inches may harder to find the kind of feed their not be too deep for strong vigorous appetite craves. Some prefer cracked hens. Care must be exercised to keep corn, some buckwheat or oats. If these the litter dry and clean: By mixing grains are fed in the mixture it will the litter that is removed from the afford more inducements for the hens poultry houses with the stable manure to work over the litter in search of it decays rapidly and helps to increase

Keep the Hens Busy.

Not only should the grain be fed in flavored scraps. If given these feeds the litter, but such feeds as beef scrap, one must avoid everything that has a grit, shell and charcoal may be fed in tendency to disturb the digestive func- the same way. Keep a close watch of tions. Sour scraps and kitchen waste the fowls and note what elements seem will check the supply of eggs if they to be needed from time to time to infind their way to the poultry houses. It crease the efficiency of the ration. The seems queer why so many feeders will point is that when these egg-producing elements are fed in the litter the hens that only fouls the floors and feed will eat a great deal more of them than troughs. Sort over the scraps and cut when fed in some hopper or dust box. them up in shape so that they may be In this way they will obtain their feed in the proper proportions to encourage to get a taste and prevents the larger increased egg yields. Regulate the pieces of meat and bread from being time of feeding so that the hens will dragged about the feed troughs and all be busy in the morning, some busy all day and all again busy just before In winter feeding one should aim to dark. This will necessitate feeding earet good results with a minimum of ly in the morning and about three or

During recent years there has been complicated rations, even though feed- a great deal of argument regarding the ing a variety of materials. One must feeding of wet and dry mashes. If one study his fowls and feed according to feeds carelessly it is better to feed the their varying needs. There can never dry mash. However, there is no doubt be a balanced ration that will hold but that the wet mash is preferable to good for all sorts of laying hens. What any other method of feeding the would be balanced properly for one ground grains. Hens do not chew and masticate their food, consequently the dry, light and powdery feed must be twisted down somehow. Of course, it takes less time to mix and feed the In mixing dry grains one should buy dry mash, but this is more than offset the sound grains and do his own mix- by the waste when the feed is fed dry ing. Too many prepared feeds are and by the fact that less feed is requir-





el L-12-20 Horse P

Afour-cylinder, 2 speed, light-wieght tractor of great power, suitable for any size farm. Will pull the implements you now have on your farm—gang plows, harrows, mowers, binders manure spreaders, road
drags, or graders. Will also operate your ensilage
cutter, feed grinder, circular saw, etc. Does more work
than horses—costs less and is so simple anyone esn run it

Emersas-Brantingham implement Ca. (Ins.) 76) S. Iron St., Rochford, III
Pleuse send me free literature on articles checked:

1 Pleus 1 | Pleus | |

Blue Hen GOLONY BROODER

The big brooder at the little price

\$14.50 size large as many others rated as thousand capacity. Warms large floor space without overheating brooder house.

Big. powerful heater with quick, sure automatic control, both top and bottom drafts. Curtain gives fresh air—prevents floor drafts. Money Back Guarantee

500 chick size—\$14.50* 1000 chick size—\$19.50* New Brooder Book shows why The Blue Hen raises more chicks at less cost fet it to-day with special offer Watson Mfg. Co.

Drawer 48 Lancaster, Pa. Makers Blue Hen Mammoth Incu-



LIKOL VID LO GOOD CROPS

Our Free Seed Book describes hundreds of well-tried, standard varieties and novelties For GAPDEN and FI LD It is different and well worth a careful perusal. Your name and address on a postcard will bring a copy. It tells what growers in all parts of the country say about "CRIMSON BEAUTY," The Best of Tomato Grown.

THE C. F. DE PUY CO., PONTIAC, MICH.

effort to induce the hens to eat large quantities of food we work directly against our efforts by forcing a dry mash upon them. My ideal ground feed mixture for the wet mash consists of:

 Finely ground oats, lbs.
 300

 Middlings, lbs.
 300

 Bran, lbs.
 300

 Fine beef scrap, lbs.
 100

Total, lbs......1,000 Mix with boiling water and allow to cool. Some poultry feeders use a much larger per cent of beef scraps, but it is my judgment that it is a waste of monev to force beef scraps on hens that do not need or cannot use them profitably. By feeding ten per cent in the mash and scattering more in the litter the hens can balance up their own rations and if they need more they will be hunting for it. My experience has been favorable to feeding the wet mash in two moderate feeds a day rather than to feed so much at one time as to cause the hens to sit around and mope and a healthy hen is never so miserable as when she has no incentive for occupation.

Green Foods Are Necessary.

Hens that are producing eggs must have plenty of bulky and green food to add zest to the appetite, aid digestion and keep them happy and contented, a condition essential to heavy egg yield.

For early winter feeding a small plot of rye about the house is very desirable. Sugar beets and mangels are good succulent feeds. The middle of the day is the best time to feed these things and while only small amounts are needed, it is important that laying hens have some green or succulent food each day. Alfalfa and clover cut and steamed and fed with the mash are an excellent substitute for green feed. Lawn clippings cured in the shade and properly stored make a very desirable feed for winter eggs.

One cannot place too much stress on the importance of water for the laying hens. An egg is about 65 per cent water and a laying hen is always thirsty. Like her food, she prefers to have her water where she can drink as often as her appetite craves. If she has access to water at all times it need not be warmed, but it is very injurious to withhold water for a number of hours and then allow her to have all she wants. If it freezes during the night it is better to heat it for her morning drink. Laying hens require more water during the extremely cold weather when they are laying the greatest number of eggs.

Milk a Good Egg Food.

On many farms skim-milk may form a prominent part of the hen's ration. It can be fed with the mash, as this avoids soiling the feathers and surroundings. Milk cannot take the place of water as a drink and hens need more animal protein than they can secure from milk.

Grit, charcoal and shell are needed by hens that are laying eggs. Hens under normal conditions will not produce eggs faster than they have the shells to put on them. Our average rations do not have a sufficient amount of lime for maximum egg production. Crushed oyster shells are cheap and an easily obtained source of lime. Grit is also essential and should be supplied with the shells.

While my methods of feeding will not produce heavy yields of eggs under all conditions, I can say that it has been my good fortune to keep my hens They are Tested for Purity laying during the winter. It has prov-en efficient under my conditions and en efficient under my conditions and my hens have kept vigorous and thrifty with a minimum of care and attention during the winter.

W. MILTON KELLY.

A CORRECTION.

The amount of salt in the poultry ration printed at the top of the fourth column of the first page of the issue of January 6, is given as eight pounds. This is a typographical error and it should have read three pounds instead of eight.





Raise Chicks The Modern Way

The old hen is too troublesome and uncertain; lamp-heated hovers too dangerous and expensive; the great pipe-systems too costly for the average poultry-man. But the modern coal-burning colony brooder, the original Newtown, solves this big problem. It "raises the most chicks, the best chicks, with least labor and at lowest cost." The

Newtown Colony Brooder burns coal, the cheapest fuel—is self-feeding and self-regulating-free from fire danger—operates in any building—broods (according to size) any number of chicks to 1200—reduces labor—raises the chicks. Lindorsed by the most successful poultrymen the world over.

Ask your dealer for the original Newtown. Hhe offers an imitation, reject it and write us, giving dealer's name. We will mail you complete catalog and tell you where to get this REAL BROODER.

NEWTOWN GIANT INCUBATOR CORP'N 99 Warsaw Street Harrisonburg, Va.



Join Our MONEY-MAKERS with "Successful" ABROODERS

Twenty-three years leader-ship. Poultry lessons free to every buyer. Booklet, "How to Raise 48 out of 50 Chicks" —19c. Catalog FREE. Make green, egg. -making feed in "Successful" Grain Sprouters.

Pedigreed Belgian Heres for sale. Does and Bucks for treeding porposes. Address The Unadilia Warren, Gregory, Mich., R. Z.



When writing to advertiser please mention The Michigan Farmer.

de up of sere angs and damaged ed to produce the same regults. In om



Billion Dollar Grass is a Salzer creationgrows 6 to 8 feet. The wonder crop for green feed, ensilage, hay and seed. Fine stooler. Salzer's Sudan Grass has produced 7 tons per acre. 2 to 3 cuttings per year. Salzer's Northern Grown, pedigreed clovers, grasses, and mixtures lead the world.

Alfalfa, Corn, Oats, Wheat, Barley Send Today for

Samples and Catalog America's Headquarters for Field Seeds 49th Year

We have been experimenting, testing and improving Salzer's pedigreed strains. Today, our big 184-page catalog offers you the highest quality seeds that scientific knowledge and practical methods can produce. Catalog and samples of any field seed you are interested in FREE. Send today.

.SALZER SEED CO. EXXEBB LACROSSE, WIS

FEED SEED SATWholesale Prices
We save you money on your Seed Bill. Write
for our Special Money-Saving Price List and get
our reduced prices on Best Quality Guaranteed
Guaranteed Satisfactory or money refunded. Don't pay two profits on Grass Seed. Our seeds are
sold subject to Government test. Have new recleaned Alfalfa, \$6.90 bu; Timothy, \$2.25; Glover,
\$8.40; Sweet Clover, \$3.90; Alsike and Timothy, \$4.00. Have Low prices on Seed Corn, Oats,
Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes, Artichokes and alf
Farm and Garden Seeds. Write today for big 100-page catalog. Free samples and special low prices on
seeds you require. Will Send Free 60-page book on Growing Alfalfa to those who ask for it. Write at
Duce, as we can save you money.

A. A. BERRY SEED CO., BOX 231 CLARINDA, IOWA

BUYERS
or money back. If we can't save you money we don't will be astonished at our low prices for Grass Seeds. We have recleaned Timothy \$2.28 per bu., Clover \$3.25, Affairs, \$3.700, Sweet Clover \$3.75, Alsike Clover and Timothy \$4.00 per bu, and all other \$3.25, Affairs, \$3.700, Sweet Clover \$1.750, Alsike Clover and Timothy \$4.00 per bu, and all other and sell on a Profit-Sharing Plan, at becircok prices. Write for our free Samples of Seeds you want to buy. Our Guide explains how you can save money on Seeds, get better quality, share in profits. If s mone to you.

GRASS SEED FREE

government test under an absolute money-back guarantee. We are specialists in grass and field seeds. Send-today for our big profit-sharing, money-saving SEED GUIDE which explains. All free, American Mutual Seed Co., Dept. 631 Chicago, III-

BERRY SEED CO. Pox 131 CLARINDA, IOWA

STRAWBERRIES

aud a full line of other small FRUIT PLANTS. Send for our free Catalog today. It tells all about it.
J. N ROKELY NURSERIES.
R. 6. RRIDGMAN. - MICHIGAN

STRAWBERRY and Small Fruit Plants, we guarantee Our Hardy Northern Grown Plants to please. We are Growers, four System of Selling Direct, Sayes you Money. Write to ern Grown Plants to please. We are Growers, four System of Selling Direct, Saves you Money. Write to day for our free Illustrated Plant Book. St. Joseph Nursery, Box 461, St. Joseph, Michigan

PURE FARM SEEDS CLOVER, Timothy, Alsike, Alfalfa, Oats and all kinds of PURE FARM SEEDS direct from producer to con-A. C. HOYT & CO, Box M, Fostoria, Ohio

CLOVER SEED

w. L. IRELAND & CO., Grand Ledge, Mich.

CLOVER SEED

SEND US SAMPLES FOR OUR BIDS, YOUNG-RANDOLPH SEED CO., Owosso, Mich.

SEED CORN 7 varieties—90, 100 and 110 day corn, all northern grown; full line farm seeds—everything guaranteed. Cir. free. C. H. & J. GRAVES, Antwerp, O. (Paulding Co.)

SWEET CLOVER for Hay, Prices and Circular on request. EVERETT BARTON, Box 129, Falmouth, Pendleton Co., Ky.

OATS SENSATION-Record 123 bu. per acre Also SEED CORN. Samples and cata logue free. Theo. Burt & Sons, Melrose, O

When writing to advertisers please mention the Michigan Farmer.







Big Catalog FREE Over 700 illustrations of vege-tables and flowers. Send yours and your neighbors' addresses. R. H. SHUMWAY, Rockford, IIL.

Farmers' Clubs

Associational Motto:

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

WHAT THE LOCAL CLUBS ARE DOING.

Orleans Club.

I must say that my sympathies always go out to the under one in a discussion and I think this lady here is absolutely right with regard to the printed program. We don't use printed programs. We think it is altogether too slow, things are happening too fast. We hold our meetings in a hall. It is a large Club and we don't limit the membership at all, we are glad to have everybody, and a Club that is held in that way and working along those lines can do better. Possibly there are those who can't hold their Clubs in a public building but we have the hall and we have the conveniences. We discuss the live topics and I think the farmers have done more to make good roads today than any one thing. We certainly have good roads in Orleans, and as far as the dinner proposition is concerned, we have a dining-room under the hall and we often seat as many as you had last night. We certainly have good meetings. We aren't doing anything with the printed programs. just want to say one thing-I am a member of another Club that has printed programs and I know that that printed program does not help me any. I was put on for a topic by that Club and wasn't there. Let's get up to date and work along good live lines.

Milford Club.

Our Club is now twenty-two years old and in the history of this Club we have never had a printed program and after a Club has been going a sufficient length of time we feel the Club does not have to know about these things a year in advance, and I wish to say that last August was one of our banner Clubs and we had a congregation of about 250 and I don't believe that it would be of any benefit to our Club whatever.

Essex.

Our Club was organized in 1887. At first we used printed programs and like it. We have county officers and others to speak for us. We try to keep posted on the live subjects of the day and we also have had speakers from the Agricultural College and quite often we try to get some foreign speaker, you might say, to give us a talk on some line along which they are particularly interested and in which our Farmers Clubs are interested.

Assyria Club. In regard to the printed programs, I

would say that our Club has never had the printed program. Our program committee is made up of three members appointed by the president and he appoints one new member at each meeting, which keeps two old members on the committee all the time, and they make out the program and our committee on entertainment is made up in the same way. We have been running, I think about fifteen years-I don't know the exact date our Club was organized I will give a lot of new but something like fifteen years ago, sorts free with every order and I want to say that while I would fill. Buy and test. Return if not O. K.—money retunded. grams we know nothing about it. It has come up for discussion several times and then we have dropped it as the present method seems to be pretty satisfactory and I don't think in the whole time we have ever had a failure in making an interesting program. Very often it has happened that quite a number of those who were put on the program were not present, but we have always been able to call on someone from those present and had a kind of impromptu program, which has always been satisfactory and interesting.

-3 sizes. Plain and Made in two styles-Fertilizer—with shoe or double disc furrow openers, adjustable to plant 16 to 28 in apart in the row, four rows at a time. Spacing bars are furnished with each drill, enabling the user to make the necessary spacing without the user of measuring. ing without the use of measuring instruments. These bars hold the furrow openers the exact distance thus making the rows easy apart, thus to cultivate.

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

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

THE AMERICAN SEEDING MAGHINE CO. SPRINGFIELD, OHIO. U.S.A.



This Amazing Farm Book Tells How!

REE FOR A

Most amazing farm book ever written. Worth hundreds of dollars to any farmer. Explains wonderful discovery—"The Campbell System of Breeding Big Crops!" Your Wheat, Oats, Corn, Timothy, Clover and other crops increased 20 per cent in a single season! 500,000 farmer use this easy way. Send postal at once for Free Book.

CHATHAM

SEED GRADER AND CLEANER
Also get facts about this wonderful Gas Power or Hand
get facts about this wonderful Gas Power or Hand
grades, separates may be offer the fact of the MANSON CAMPBELL CO., Dept. 216 Detroit, Mi Dept. 216 Kansas City Dept. 216 Minneap

Ditching and Terracing

Made Easy—\$35 to \$50 buys



Terracer

Will prevent crop failures. Cuts V-shaped Will prevent crop farlures. Cuts V-shaped ditch, cleans old ditches, remarkable dirt mover. Does work of 50 to 100 men. Allsteel. Reversible—throws dirt either side. Adjustable for narrow or wide cut.

10 Days Free Trial. Write for FREE Book

Owenshore Ditcher and Grader Ce., Inc., Box 120

Owenshore, Ky.

Cuts 1200 Yards 2-Foot Ditch in One Day — Goes Down 4 Feet

ERTILIZER HIGH

Biggest bargain ever offered. Sold subject to State and Government test. Fully guaranteed. Big Saving on rock phosphate, lime stone, bone meal, tankage, dried blood, pulverized manure, etc. Buy direct and save middleman's profit. Big shortage. Buy before advance. Write for free samples and bulletins on how to secure best fertilizer for least money.

EASTERN FARM FERTILIZER CO.
pt. 8 Stock Yard Station, Chicago, Ill-

GUNNSIA SEED GROWS
GUNNSIA GEGENT SEED GROWS
GUNNSIA GEGNT SEED GRO

Pull Big Stumps by hand

Clear your stump land cheaply-no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable. With the Dest into steel came, which steel came, works by leverage—same principle as a jack, 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp sice!—guaranteed against breakage. Endorsed by U. S. Government experts.



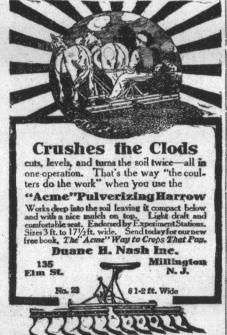
World Needs You can More Food making bet-

ter seed beds. Get a disk harrow with these improved practical features: cutlery steel disks, forged sharp; hardwood bearings, oil-soaked and dust-proof; split-loc oits that cannot rattle loose. Selec

Cutaway Disk Harrow

The Double Action has rigid main frame, extra strong, that doubles efficiency. 100 styles to choose from—Single, Double and Special Purpose Types. Ask your dealer for the genuine CUTAWAY. Our book, "The Soil and its Tillage," tellshow to increase yield—a card brings it to you—FREE.







Sold under a money back guarantee. You will be surprised at the small cost of the Simplex Testee.

The Simplex Hig. Co., Dept. xx255, Ballimare, Md. Grange progress lie. Jennie Buell.

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.—Jas. Helme,
Adrian; Geo B. Horton, Fruit Ridge;
J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste
Marie; N. P. Hull, Dimondale; Burr
Lincoln, Harbor Beach.

THE NEW YEAR AND OUR GRANGES.

One of the best things, looking toward a year of large Grange results, which the officers of a Grange can do. is to get together and talk over their Grange situation with the idea of improving it. Have you ever had your officers together for such a purpose? If not, try it. Almost any officer might take the initiative by inviting all the others to his home for an evening, or by planning that they eat supper or refreshments together at a regular meeting with the understanding that they do so to give them opportunity to discuss ways and means of making the Grange move upward and forward in 1917.

What shall you talk about at such a conference? Well, for one thing, every officer present might be asked to tell what he thinks his office ought to contribute toward making each meeting better, even in a small way, than it usually is. Then, a membership campaign might be inaugurated at this conference of officers. There are over one hundred Granges in our state that have twenty-five or less members; perhaps yours is among them and, if so, this would be a splendid time to resolve to increase the number of members by a systematic canvass of eligible neighbors. Perhaps you have fifty members; why not set your stake at seventy-five and work earnestly toward that number? Probably not a local Grange in the state has all the available material listed in its membership.

But it will never, never do to get in lot of new members without something to attract and hold them; so, at this "talk-fest" of your officers, the different lines of Grange possibilities should be gone over and some of them chosen for particularly strong pressure—such as discussing live measures that are before the legislature and sending in petitions upon them; improving the music of your young people by organizing an orchestra, band or chorus, or enlisting them in a play or degree team; buying together through the state contracts or organizing a selling association; putting the social life of the Grange on a basis that will insure wholesome fun and thorough acquaintance among members; and, finally, making stronger the ordinary business and ritual of each meeting.

The last of the above suggestions contains in it more of the genuine success or failure of a Grange than we sometimes think. For example, when officers are new, it is a good time to adhere to the by-laws more closely than perhaps has been customary—a good time for officers to decide to car ry out the rule that dues must be paid to the first of the quarter in which the annual word is asked for; a good time to begin to open the Grange promptly at the hour previously agreed upon and to close at a seasonable hour; a good time to somehow secure response of every member at the lecturer's roll call and to otherwise cultivate the sentiment that every member must try to contribute to the program when asked to do so.

These are very simple, humble rules for Grange success, and yet in their regular practice does really true

ve One Man With











ONE MAN One man and the Bates Steel Mule will do more work every day than most tractors and two men. Let that fact sink in - it means money to you. When operating, you sit on your implement and drive the Bates Steel Mule as easily as you would a horse. Everything is in front—no looking around or carrying an extra man at \$2 a day. Plowing, Discing, Spreading, Drilling, Cultivating, Mowing, Harvesting—no matter what the job— the "Mule" is a real one man tractor.

Has Crawler Drive Instead of Wheel

Because of this feature, the "Mule" works on any soil, wet or dry, without packing the ground. You can use it in weather when other tractors are idle and get about one-third more days work per year.

If you want a machine that will do more than you ever thought possible, then look up the Bates Steei Mule. It will open your eyes to the fact that you cannot afford to overlook the "Mule." Backed by a strong, broad guarantee. Thousands in successful use.

Write today for facts and pictures of what the Bates Steel Mule will do for you.

Joliet Oil Tractor Co., 47 Benton St.

Joliet, Ill.

Michigan Branch, Lansing, Mich.

Laugh at Extra Hard Clay, Cobblestone Land, Sod, or Sticky Soils.



This General Purpose Plow is guaranteed to do the best work of any General Purpose Plow.

Long Beam, High Throat, No Choking. Light draft, steady, and easily handled.

We make plows for every purpose and use only the best grades of iron, mixed with the utmost care to ensure strength, The Moldboards are perfectly chilled, will wear 12 years. Shin Piece chilled, extra long, chilled landside.

Thousands of farmers who use Le Roy General Purpose Chilled Plows say they will do the work where others fail. Perfect satisfaction guaranteed.

Ask your dealer about Le Roy Plews and write to-day for catalog to

LE ROY PLOW CO., Le Roy, N. Y.

Farms and Farm Lands For Sale

YOUR CHANCE IS IN CANADA RICHA SHANUE IS IN CANADA

Rich lands and business opportunities offer you independence; Farm lands, \$11 to \$30 acre; irrigated lands, \$35 to \$30; Twenty years to pay; \$2,000 loan in improvements, or ready made farms. Loan of live stock; Faxes average under twenty cents an acre; no taxes on improvements, personal property, or live stock; Good markets, churches, schools, roads, telephones; Excelent climate—crops and live stock prove it. Special homessekers fare certificates: Write for free booklets, Alhan Cameron, General Superintendent Land Branch, Canadian Pacific Ry., 125 Ninth-av., Calgary, Alberta.

40 Acres Free Homestoads. Exact printed copy of the new 560-acre Stock-Grazing Homestead Law. A sectional map, from official data compiled by the State of Oregon (2x37 inches), printed in three colors, showing several million acres of Government land open for homesteading—hundreds of sections being adjacent to granted lands that can be purchased if desired at \$5 to \$5 per acre. Instructions and suggestions by reliable and experienced men asto procedure in securing a \$40-Acre free homestead. All will be mailed to your address upon receipt of one dollar Send check, money or express order to Homestead Land & Development Co. W. H. Doolittle, Ser'y., Bax 24, Ontario, Ore. Reference: First National Bank, Ontario, Oregon

Florida Orange Grove, \$1,900

A acres, bordering beautiful lake; 22 acres in timber, IS acres cleared with fine orange grove that has produced \$90 boxes in season: aboundace of peaxs, plums, peaches, grapes and berries; good 6-rm. house, burn and storage house. Owner, a mechanic returning to trade, makes quick sale priced \$1,800. For traveling instructions to go and see it see page 19. "Peace and Plenty Catalogue" copy mailed free. E. A., STROUT FARM AGENOY, Dept. 101, 150 Nassau St., New York.

ONTANA cffers exceptional opportunities to the farmer, stockman and investor. Sure crops by ordinary farming methods. Harvest every year—not once in weblie. No irrigation, splend: d climate, excellent water cred market. You can do better in the Juc'ith Buy direct from the owners, Prices lowest terms cest. Free information and prices sent on request. Address The Cook-Reynolds Co., Rox W1405 Lewistown, Montana

A Swall Farm in California will make you more money with less work. You will live longer and better. Delightful climate. Bich soil. Loop prices. Easy terms. Sure profits. Hospitable neighbors. Good roads, Schools and churches. Write for our San Joaquin Valley Illustrated folders free. C. L. Seagraves, Ind. Comm., AT & SF Ry., 1957 Ry. Ex. Chicago

EDITOR, LANDOLOGY, Skidmore Land Co. 308 HALL AVE. MARINETTE, WIS

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

For Sale Clay Loam Farming Lands, in Houghton easy terms, good roads, good markets. Employment furnished settlers during winter months. Worcester Lumber Co. Ltd., Land Dep't. Chassell, Michigan

Galdwin Co. Farms good farm and don't know just where to find it, I do, that's my business getting you a square doal, write me just what you want U. G. Reynolds, Gladwin, Mich

101 Acres Excellent sandy loam, level, 2 markets, 3 miles; new 8 room house, basement barn; fruit; close to school; a bargain. Gleason, Farm Man. Greenville. Mich.

FOR SALE or Trade for larger farm, my splendid 36 acre farm with A. I buildings and soil, just outside of Lowell, Mich. Also Vandette at Shelby, only one in town. Write all inquiries to R. B. Murdock, Shelby, Mich.

FOR SALE One of the best 160 acre farms in Genesee Co. Write for description PRANK H. MAPES, GAINES, MICH.

For Sale Elegant farm-135 acres fine soil. buildings, location, Discription and price, Write Forrest Fiebach, Charlotte, Michigan

I will condition a Horse or

Cow in twelve days.

Put flesh on its bones. Give it life
and value. Satisfaction guaranteed or no pay. Send
postal for free offer.

P. M. FAUST, BRYN MAWR, PA.



dence there will you find an enlightened, a contented, a thrifty people, and a type of husbandry that is constructive-not de-

Encourage the boy in this dream. Some day it may come true, and when it does another pillar will have been placed in under the general welfare of the entire commu-

Such boys are worth while. They dote on THE BREEDER'S GAZETTE.

In its pages they find inspiration.

And there are boys also of an older growth who might find in its pages that which would stir ambitions now perhaps slumbering to the manifest advantage of themselves, their families, their country, their state, their nation.

ONE DOLLAR A YEAR! THREE YEARS TWO DOLLARS!

These prices cannot be long maintainedtake advantage of them now. See our local agent, or send your money direct to this

A sample copy and book catalog can be had for the asking. Address

THE BREEDER'S GAZETTE, Room 1125, 542 S. Dearborn St., Chicago

Use Your Auto for Belt Power

Saw-Grind-Pump-Thresh

In two minutes HELPING HENRY jacks up your ar and is at work—weighs only 136 ibs.—all-steel—carried on running board—go anywhere or farm or sell power to neighbors—takes place of expensiven engine—costa less than unit of clothes. Thinness takes place of expensive engine—consistes which is of clothes. The first place of the first place o

Trial at Our Expense

HELPING HENRY is guaranteed to give satisfaction. Try alm 30 days—Your money and freight charges refunded if to lie every way satisfied. Drop a post card to factory and just say:—"Send olders and prices. My car is a——." Do it today. Autopower Co., 1238 Lincoln Way, Laporte, Ind.





BUSINESS WITH OUR BACKING

Sell the high-grade Confer line of Household and Stock Remedies, Extracts, Tollet Articles, Spices, etc. direct from wagon to farmers homes. We furnish goods on credit-teach you how to sell them and make \$50 to \$200 a month clear. Steady, year-through work. Howst territory new open for live, energetic men. If you want to get into business for yourself here syour Big Opponrounts. Write for full explanation of our plan, giving your age and present occupation.

Dept. D

Veterinary.

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

Puffy Hocks.-I have a colt that is Puffy Hocks.—I have a colt that is six months old, rather growthy, and apparently well, but both of his hocks appear to be puffy and swollen; however, he has never been lame. F. K., Fowlerville, Mich.—You had better clip hair off and apply equal parts tincture iodine and spirits of camphor three times a week. Or apply one part powdered cantharides and six parts lard every two weeks. This ointment will blister and of course be less trouble or you. or you.

A Boy's Vision of an Ideal World
Yes; the Collie is sharing with the boy his dream.

The lad's ambition is to some day own a good stock farm with big red barns, silos and well-bred live stock.

Had he but that he could say, in truth, so far as he is concerned—"The world is mine."

All over these United States the best farms are the stock farms.

All over these United States wherever the golden hoofs are conspicuously in evidence there will you find an enlightened, a to sores twice a day.

Worms.—I have a colt coming three years old that is very much out of condition. His appetite is good, is fed three quarts of oats each meal, three meals per day, and all the hay he cares to eat. I have noticed some white worms in his bowel movements and I might say that I have tried different worm preparations but they fail to do might say that I have tried different worm preparations but they fail to do him much good. A. G. G., Bay City, Mich.—Mix together one part of powdered sulphate iron, one part ground wormseed, one part salt and three parts ground gentian, give tablespoonful at a dose in feed twice a day.

ful at a dose in feed twice a day.

Hole in Side of Teat.—We have a cow which has hole in side of teat and when milked milk comes out of both teat openings. Mrs. L. H., Shelby, Mich.—The edges of opening should be made raw, touched with tincture of iodine, then stitched closely together, then edges will perhaps unite. Irritating the edges with turpentine, or any counter-irritant that will set up an inflammation will have the effect of closing this artificial opening.

Infected Udder.—We have a young

Infected Udder.—We have a young Holstein cow that had her first calf last spring; she is due to freshen again in April. Last summer she gave 30 lbs. of milk to a milking but some time later her milk became bloody and during the fall we dried her; now there is a little fluid which we milk from all four quarters. What would you advise us to do with her, and do you believe that she will recover? R. R. M., Webberville, Mich.—You had better leave her alone and when she comes fresh, milk her cautiously three times a day, but discontinue milking her now. Give her 1 dr. doses of potassium iodide

milk her cautiously three times a day, but discontinue milking her now. Give her 1 dr. doses of potassium iodide night and morning in either feed or water for two weeks.

Injured Eye.—We have a horse that was bitten some time ago by another horse, the wound being in the eye. Now the eyeball is protruding and discharging pus. There appears to be a hole in the center of eyeball. Subscriber, Alanson, Mich.—Apply one part calomel and five parts boric acid to center of eye twice a day. Your cow died the result of pneumonia, affecting one lung. Your management of the case was very good.

Indigestion—Looseness of Bowels.—Have a two-year-old colt which is inclined to bloat after eating; besides, he is troubled with looseness of the bowels. He is fed corn, oats and clover hay. F. M. R., Casnovia, Mich.—Feed oats and timothy hay; also give 60 grs. of hyposulphite of soda and a table-spoonful of ground gentian at a dose in feed three times a day.

Fistula.—I would like to know how to put iodoform and boric acid to bot-

to put iodoform and boric acid to botto put iodoform and boric acid to bottom of a fistulous tumor, or a tumor that has pipes. So far as I can tell, the bottom can only be reached with a syringe. J. E. H., Fenwick, Mich.—You had better apply first a small quantity of turpentine, then a few days later inject tincture iodine into cavity. As you state these tumors are on leg, therefore you can treat such an allment different than if it was deep seated.

Attophied Foot.—I have a valuable

Atrophied Foot.—I have a valuable seven-year-old mare that has been lame for some time, and lately the inside of foot is growing smaller and somewhat contracted. J. R., McMillan, Mich.—Clip hair off coronet and apply one part powdered cantharides and four parts lard every two weeks, also apply wool fat to hoof once a day.

THE BEST LINIMENT

Gombault's **Gaustic Balsam**

IT HAS NO EQUAL

For —It is penetratively in the single specified and healing, and for all old the Sweets specified wounds, Felons, Exterior Cancers, Boils Human Corns and Human Corns and Bunions, CAUSTIC BALSAM has Body a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that used on any case that requires an outward application with perfect safety.

Perfectly Safe Reliable Remedy Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago **Diphtheria** Sore Lungs Rheumatism

and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES Cornhill, Tex.—"One bottle Caustic Baisam did my rheumatism more good than \$120.00 paid in dector's bills."

OTTO A. BEVER.

Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, 0.

What Does Silage Cost?

The acres used and cultivated time and again, and the area to be gone over to get the fodder are the big items in Silage cost.

Nitrate of Soda, as a Top Dressing worked in when cultivating, will cheapen production of your Silage.

Bigger, more succulent stalks and bigger ears will be yours.

Send post card for free book on 'Corn Cultivation'

DR. WILLIAM S. MYERS 25 Madison Avenue, New York

a

Are These Slios Too Good For You?
They cost money to build beause they are built right. Never
to complaint from OUR cusomers. This

PORTLAND SILO

meets every question you can ask; vitrified shale block (unglazed of course); in-built steel reinforcing rods; double-plastered and troweled inside. A great big attractive structure, proof against air and cold.

At a more moderate price you can command a lifetime of service from the Sealed-Joint Cement Stave Silo

Every part puddled, everlasting concrete bound into a solid cylinder by "sealing" the joints. Ask about our Easy-Building Plan,

The Portland Silo Company Long Bldg. Portland, Indiana 205 Long Bldg. You owe YOURSELF a complete investigation of both these superior silos. Learn about them now and avoid delay in the building season.



FARMER

The Canton Culvert & Silo Co.
Box 108, Canton, Ohio, Makers of
ZYRO Corn Cribs and Grain Bins.

Agents Wanted sell Guernsey Silos (glazed and vitrified tile) in your territory. If planning to build, write for special new agency terms that will save money on your silo and earn good profits.

GUERNSEY CLAY CO. 907 Fletcher Trust Bidg. Indianapolis, Ind.

DOGS

Fox Hounds of all ages, Skunk and Rabbit dogs Send 2c stamp. W. E. LECKY. Holmesville, Ohio

BREEDERS' DIRECTORY.

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

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

Flanders Farm, Orchard Lake, Mich.

CATTLE.

ABERDEEN-ANGUS

WOODCOTE STOCK FARM, IONIA, MICH.

Aberdeen Angus Bulls For Sale

12 head of choice young bulls old enough for service.
All sons of Black Monarch 3rd. Grand Champion Bull
Michigan State Fair 1914, 1915 and 1916. Black Monarch
3rd has been sold to W. E. Scripps, Wilt wood Farms.
for the record price of the Breed in Michigan, 1310.
U. L. Clark, Hunters Creek, Mich. Sidney Smith, Mgr

Aberdeen Angus Eight bulls from eight to ten months old. One show bull, eight yearling heifers bred. Or motto; size with quality, best of breeding. Prices reasonable. Inquire of F. J. WILBUR, CL14., h. I. HIGAN.

AYRSHIRES—One of the foremost dairy breeds The most economical milk producers. Calves for sale. White Leghorn cockerels: Duron Jersey swine. Michigan School for the Desf. Flint. Michigan.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM

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

CAMPBELL & ANGEVINE.

Coldwater, Michigan.

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

4 Heifers and 1 bull calf High Grade Gue nseys nicely marked \$20 each, express paid or the five, express paid for \$95. Extra promising calves. Meadow Glen, Whitewater, Wis.

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

For Sale: At farmers prices, registered Guernse; bulls old enough for serice, from advanced registered cows. L.J. Byers. Coldwater, Mich

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

GUERNSEYS: Bred heifers, mature cows, bull calves
GFrom a long line of Adv. Reg. ancestors with large
record. G. A. WIGENT Watervliet, Michigan. For Sale 2 A. R. Reg. Guernsey cows, 2 yearling bulls, 2 bull calves from A. R. cows. Cheap JOHN EBELS, R. 10, Holland, Mich.

Cluny Stock Farm 100—Registered Holsteins—100

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

R. Bruce McPherson, Howell, Michigan

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 635 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb, daughters than any other living bull. If you do write for padigrae.

EDWIN S. LEWIS, Marshall, Mich.

Reg. Holstein Bull calves. Michigan Champions 1916 Male and female. Worlds record breed-ing at Farmers price. John A. Rinke, Warren, Mich

Extra Good Registered

Holstein Cows FOR SALE

From \$125.00 to \$200.00. Send for list or look them over. Bigelow's Holstein Farms, BREEDSVILLE, - MICHIGAN

HOLSTEINS

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

"TOPNOTCH" Holsteins

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

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



HOLSTEIN CATTLE

Fifteen thousand dollars in prize money, for milk and butterfat production, was distributed among breeders of registered Holstein-Friesian cattle during the year ending April 30, 1916. The official supervision, by the Advanced Registry. Office of the Holstein-Friesian Association, of all regularly conducted tests, and the award of liberal prize money have proven a mighty stimulus and an educational factor of great value, in the promotion of interest and progress in the breeding of Holstein cattle.

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

GR SALE 4 registered Holstein cows. Fairview Segis Aurie No. 99601, A. R. O. 9 years old, due March 1. Queen Butter Boy No. 187193 A. R. O. 4 years old, fresh Sept. 18, with helfer calf. Joan Saginaw No. 181794, Sept. 18, with helfer calf. Joan Saginaw No. 181794, Sept. 18, with helfer calf. Joan Saginaw No. 181794, Sept. 18, with helfer calf. Joan Saginaw No. 181794, Korndyke No. 210210, 4 years old, fresh Dec. 16. Easy milkers and guaranteed all right. Write or come and see them. Lewis J. Benjamin, R. D. 1, Chio, Mich.

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure 15 weeks old, beautifully marked, \$20.00 each, cratector for shipmant saywhere. Edgewood Farm, Whitewater, Win

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

Holstein Bulls

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

OAK LEAF FARM
Herd Sire
Ypsiland Sir Pletertje De Kol
I have several young bulls for sale, good individuals
and the kind that is a credit to head any herd atfarmers' prices. E. H. Gearhart & Son, Marciellus, Mich., R. No. 4.

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

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

2) lb. Sr. 2-yr.-old and a 15 lb. Jr. 2-yr.-old were mong the records recently made in our herd. All lows in the herd have creditable A. R. O. records and re tuberculin tested.

PEACELAND STOCK FARM, Three Rivers, Mich. REG. HOLSTEINS: Herd headed by Albina Bonte Butter Boy No. 33124. Dam's record at 6 yrs, butter 23.53 lbs. milk 649.4. Yearly record at 24 yrs, butter 802 lbs. milk 18622 lbs. W. B. KEADER, Howell, Mich

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

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

FOUR Heifers and one Bull eaff high grade Holsteins nicely marked, \$20 each Express paid or \$35 for the five all Express paid. Meadow Glen, Whitewater, Wis. R EG. Holsteins. Place your order now for a bull calf. I have cows due to freshen soon, bred to the best bull in Mich. Elmer E. Smith, Redford, Michigan

FOR SALE Holstein-Friesian Bull Call of Hengerveld De Kol blood lines, 4 weeks old, also 4 Chester White (O. I. C.) Boars, 2 and 4 years old, SERRADELLA FARM, Occoda, Mich., Carl E. Schmidt, Prop.

Six Registered Holstein Cows all in Calf to a Son Moble; also six[Calves by same Sire, Edgeriver Farm, Geo. W. Burt, Prop., Redford, Mich.

For Sale. Young Holstein Bull selection McPhersons "To Notch" herd. E. C. SHUPP, Hillsdale, Michigan

Get Rid of the "Boarders"

Do you keep cows or do they keep you? Do you know which are earning a profit and which are merely paying their board? One community increased the average net profit per cow 129.8 in a few years by testing. Cows from regularly tested herds sell for more money and so do their offspring. Knowing beats guessing in dairy work. Get our free book let, "What is Accomplished by Testing Cows" and learn how to build up your herd from animals of known production. Every farmer should read this booklet. It's free. Send a postal today.

The American Jersey Cattle Club 346 West 23d St. New York City

FOR sale. Thoroughbred Jersey heifers, Registered also a Fine Throughbred, Registered Young Built mays. old. Sire, New England Str., He out of Stockwells Liberal & Queen Janice. Got too much stock & must reduce. Belding Land & Improvement Co., Belding, 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 Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested bulls, bull calves and heifer calves carrying the blood of the greatest producers of the breed. IRVIN FOX, Allegan. Mich.

Maple Hill Farm Registered Jersey Cattle for Sale

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

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

FOR SALE REGISTERED JERSEY BULLS Ready for service. Write your wants.
SMITH & PARKER, R. D. No. 4. Howell, Michigan

Hiliside Farm Jerseys Forsale, seven mos. old bull calf, fine, large, individual whose combined butter production of four nearest dams is 2878 lbs. butter. C. & O. Deake, Ypsilanti. Mich.

Liftie Parmstand Jersay Cattle. Bull calves from R Lof M. Cowe, also heifer calves and several bred heifers for sale. Colon C. Lillie. Conpersville, Mich Shorthorn Cattle of both Sex for Sale
W W KNAPP, Howell. Michigan.

A GUERNSEY BULL

in a grade herd in Minnesota increased its production 24%.

Guernsey Grade Cows produce

butter most economically. It has that wonderful natural

vellow color. Write for our Booklets The American Guernsey Cattle Club Box W.M. Peterboro, N. H.



Duroc Jersey Boars

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

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

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

We Have a Few Choice Holstein Bull Calves

Sired by Long Beach DeKol Korndyke. His sire Friend Hengerold DeKol Butter Boy, Dam a daughter of Pontiac Anggie Korndyke. She has a 1200 lb. record, Il-30 lb. sisters, 3-1200 lb. sisters. Her dam, a daughter of Friend Hengerold De Kol Butter Boy has 1900 lb. year record. Has 4-30 lb. sisters, 3 sisters above 1200 in year. LONG BEACH FARM,

AUGUSTA, (Kalamazoo, Co.,) MICH.



Bidwell Shorthorns "For Beef and Milk"

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

BIDWELL STOCK FARM, Box B. Tecumseh, Michigan

DAIRY BRED Shorthorns of best Bates strains, young bull 8 months old for sale, price \$150.

J. B. HUMMELL, MASON, MICHIGAN.

Milking Shorthorns. Bulls Ready for Service. DAVIDSON & HALL, TECUMSEH, MICHIGAN.

Shorthorns Dairy or beef bred. Breeding stock all seeding stock all seedings of the seeding stock all seedings of the seeding seedings of the seedings o

Iwa Shorthern Bulls for sale. 9 and 10 months old. address J. E. Tanswell, Mason, Michigan.

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

Shortherns For Sale. Young bulls \$100. Bred cows. write W. J. BELL, ROSE CITY, MICHIGAN.

Shorthorns I yearling bull, red, and 3 heifer calves from 2 to 9 mos. old. red, little white, Bates strain. Wm. D. Mc Mullen. Adrian, Mich., R. I. FOR Sale - Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 11 to 13 mos. old. John Schmidt, Reed City. R, No. 5., Michigan

50 Herefords BOTH SEXES ALL AGES ALL AGES ALL AGES

Cattle For Sale

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

HOOS.

Duroes and Victorias

Swigartdale Farm Berkshires

Home of the greatest show herd in the State. Stock of all ages and both sex for sale, including some of the winners at the State Fair, write us for particulars and let us tell you about them and our HOLSTEIN BULLS

some of them old enough for service, sired by "Maplecrest Korndyke Hengerveld" (the Bull with the best yearly record backing of any sire in the world) and "G. & B. Segis Ulrica Pledge 108790," all from A. R. O. Dams with good records and the best of breeding, one very fine Grandson of the

FIFTY THOUSAND DOLLAR BULL out of a 27.39-lb. dam, all stock guaranteed to be just as represented and a credit of six months will begiven to responsible parties.

SWIGARTDALE FARM, Petersburg, Mich.

Borkshifes, Boars, serviceable age, best blood lines. Registered. ELMHURST STOCK FARM, Almont, Mich. Berkshires: Mature sows, yearling and spring gilts
Shipped on approval. B. B. Reavey. Akron, Mich.

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

FOR SALE

10 Reg. Shropshire yrt. E wes that are first class in every respect. Price \$25 per head. Bred for Apr. lambs. M. A. BRAY ESTATE, Okemos, (Ingham Co.) Mich. J.W. KEENEY, Erie, Mich. Gilts bred for April far-Swine. D. M. & T. local from Monroe or Toledo. Keeney Stop.

Duroc Jerseys
30 bred gilts for sale priced to sell.
Hastings, Mich. Carey U. Edmonds, Price to Sell.

BOARS are all sold. Duroes, a few April gilta, will be bred for Apr. farrow, weight aboul 175. Price 25 while they last. H. G. Keesler. Cassooolis, Michigan.

Duroc Boars, A fine lot of spring hoars right. W. C. TAYLOR, Milan, Michigan.

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

Buroc Jerseys Choice fall pigs either sex. 315, 328, 220, Reg. & Del. anywhere in State. Fine Stock. J. R. HICKS, St. Johns, Mich. DUROC Sows, Spring gilts, Aug. Boar Pigs, Sept.
Pigs either sex. Percheron Stud Colt six
months old. E. J. Aldrich, Tekonska, Mich.

DUROC SOWS

40 head good growthy young sows and gilts bred for early Spring farrow to two of the best big type young boars in the state. Free livery for visitors. NEWTON BARNHART, ST. JOHNS, MICH.

Duroc Sows 26 beauties bred to grand big boars at Some splendid fall boars, Orio L. Dobson, Quincy, Michigan.

Duroc Sows and gilts bred to Eureka Cherry King and Crimson Ortics son of Critic Model 1916 champion Iowa Fair. W. C. Taylor, Milan, Mich.

DUROC Sows and gilts bred for Mar. and Apr. farrow. Write for pedigree and prices,

E. D. Heydenberk, Wayland, Mich.

Duroc Jerseys Gilts and tried yearling orion Cherry King the Premier Champion of the breed also fall pigs. F. J. DRODT. R. 1. Monroe, Michigan O. I. C. SWINE: 20 gilts due to farrow for part of April. Will be sold at knock-down price Have also fall pigs. Write me your wants. Satisfaction guaranteed. A. J. GORDEN, R. No. 3, Dorr. Mich

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

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

O. I. C'S.
either sex, not akin.
Otto B. Schulz'.

4 last fall boars big growthy ones, also last spring pigs
4 mile West of depot.
Nashville, Michigan



HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my geart herd in every community where I am not already represented by these fine early developers—ready for market at ax months eld. Write for my plan—"More Money from Hoga."

G. 8. BENJAMIN, R. F. D. 10. Portland, Michigan

O. I. C. Stock all Sold JULIAN P. CLAXTON. Swartz Creek. Mich.

CHOICE BRED GILTS to Bi Prince 58002, sired by Wildwood Prince III0 lb. 3 yr. Grand Champion at Iowa, sold for \$750. Ship C. O. D. J. Carl Jewett, Mason, Mich.

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

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

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

0. I. C. Choice Springgilts net bred and spring boars.
Out of Prize winning stock. Write for low prices. A. V. HATT. Grass Lake. Mich. O.I.C. Serviceable boars. Yearling sows and fall pigs. G. P. Andrews, Dansville, Michigan.

0.1. C Year old boar 2nd prize winner at Grand Rapids vice. A. J. Barker. Belmont, Mich. R. R. 1

Both series. The kind that pay at the pail.

J. R. Worthington, R. No. 7. Lansing, Michgan

Jersey Bulls for sale, ready for service. Out of

Hartford, Mich.

Hartford, Mich.

Bwine. D. M. & T. local from Monroe or Tolego, accuse,

Write for description. I guarantee satisfaction. J. H. Baughart, East Lansing, Mich.

Bwine. D. M. & T. local from Monroe or Tolego, accuse,

Write for description. I guarantee satisfaction. J. H. Baughart, East Lansing, Mich.

Bwine. D. M. & T. local from Monroe or Tolego, accuse,

J. R. Worthington, R. No. 7. Lansing, Mich.

Bwine. D. M. & T. local from Monroe or Tolego, accuse,

Write for description. I guarantee satisfaction. J. H. Baughart, East Lansing, Mich.

B. B. FOWLER,

Fowlers in the satisfaction of the satisfaction

For Sale, Duroe Jerseys, choice breeding spring pigs
E. B. MILETT,
Fowlervine, and
For Sale, Duroe Jerseys, choice breeding spring pigs
either sex. Prices right.
John McNicoll. Station A. R. 4. Bay City, Mich

So hred gilts for sale

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

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

Big Type Poland Chinas Spring hoars, at reasonable prices. Order soon to save express. A. A. WOOD & SON, Saline, Michigan. Big Type Peland China bred for March and April faction guaranteed. G. W. Holton, Kalamazoo, Mich. R. II.

ABGE Type P. C. largest in Mich. Boars all sold. Have 30 of the best big stretchy bred wilts I ever raised. Sired by & bred to the largest hour of the beed. from massive dams & large liters. Come & see & be convinced. Expenses paid if not as renormand. The livery to visitors. W. E. Livingston, Farma. Mich.

Francisco Farm Poland Chinas Big Types With Quality

Ten 200 lb. Spring Boars from prize winning stock, They're long, strong, big-boned, rugged fellows. Pictures, circular and price list on request. P. P. POPE. MOUNT PLE ASANT, MICH.

NOW IS THE TIME TO BUY

Twenty-five tried Big-Type Poland-China brood sows to be bred for March and April farrow. Ten splendid Spring boars at \$25.00 each for

quick sale. Worth \$50.00. Hillcrest Farm, Kalamazoo, Mich.

At Half Price and Sold Out

Except some dandy fall pigs, and a big rugged black Percheron Stallion, (registered) coming three, for \$350.00. Oome and see him.

J. C. BUTLER, Portland, Mich. Bell Phone.

BiG TYPE Poland Chinas. Boars all sold except 4 extra good boars of May farrow Stred by Big Type King 91608 & Tesemmeyer & Wooder Jr. 95393. To close them out in the next 10 days we offer them at half price. W. Bre wbaker & Sons Elsie Mich.

Large Stiled Poland China spring and fall pigs: also B. P. Rock cockerels at special low prices to quick buyers. Robert Neve. Pierson, Mich.

Big Type P. C. Four choice spring boars left. Big you. Some choice spring sows bred for April farrow. L. W. BARNES and SON. BYRON, MICHIGAN.

BIG Type Poland Chinas. The smooth, easy feeding kind that will grow big and get fat. Apr. pigs weighing up to 225 lbs. E. R. Moore, Bansom, Michigan.

Large type P. C. Sows and gilts all retained for my ship. W. J. HAGELSHAW, Augusta, Michigan.

BIG Type Poland Chinas, Cho ice April boars, fallpig⁹ lin pairs, Chance to get started for a little money, Big Minorea Cockerels, Satisfaction guaranteed. R. W. Mills, Saline, Mich. POLAND Chinas, special, 8 big smooth blocky boars priced to move at once, also two Aug, boars from a \$108 sow. Robert Martin, R. 7, Hastings, Mich.

Big Type. P. C. Boars. Big boned husky fellows. bred. E. J. Mathewson, Burr Oak, Mich.

For Sale Poland Chinas either sex, all ages. Some-P. D. Long. R. F. D. No. 8, Grand Fapids, Mich.

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

BIG Boned Poland China Sows and Gilts bred for March and April farrow. Shipped C. O. D. Call or write, E. R. LEONARD, St. Louis, Michigan. 10 Yorkshire Gilts, 2 Boars one mature; Red Polled cattle. E. S. CARR. Homer, Michigan.

Justamere Farm Large Yorkshires. Two 8 months old Boars, ready for limited service. Good individuals. First checks of \$25 get them including registration papers. Also have Wor 12 ten weeks old beautiful pigs of both series which we will sell at \$5 each, including registration. Justamere Farm. Bex 298, Lansing, Michigan,

Hampshire Swine. Bred Sows and gilts for August and September farrow s. Spring pigs, sex both. FLOYD MYERS, R. No. 9, Pecatur. Ind. HAMPSHIRES
Boars, sows. gilts and pigs. Choice stock
A.E. BACON & SON, Sheridan, Michigan.

GROWTHY PROLIFIC "MULEFOOT" RESIST-PROFITABLE ING HOG

FOUNDATION STOCK FROM BEST BLOOD OF BREES THE CAHILL FARMS MICHIGAN

Hampshires Only one Apr. boar left, first check for \$20,00 takes him. A few bred gilts left.
John W. Snyder; R. 4, St. Johns. Mich.

SHEEP

OXFORD EWES

Yearlings \$35.00. Shropshires all ages \$30. All good ones and money makers. Kope Kon Farms, Kinderhook, Mich.

Oxford Down Sheep No more for Sale.

HORSES

JACKS MULES

Raise mules and get rich. 120 fine large Jacks, Jennys and Mules, all ages for sale. A lot of hig registered Jacks, No little cheep Jacks for sale. All guaranteed Jacks. Price 2500 theap Jacks for sale. All ateed Jacks. Prices \$250 b. Come on and see for KREKLER'S JACK FARM,



MR. FARMER

Percheron Stallions and Mares of the largest breeders in the state. to select from-herd established 1899.

PALMER BROS., P. O. Belding, Ionia Co. Orleans, Mich.

The Belstein Stock Farm Offers a dark bay four year way above the average in breeding size and quality weighing over 2200 lb. with good style and action, price and terms right, if interested write
OSCAR WOLF.

ST LOUIS, MICH.

Percharons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL. Elmira, Michigan.

The Fairfield Stock Farm, Percheron and Belgian and Oxford Down sheep. H. B. Peters, Carland Mich.

Pure Bred Percheron Stallion Fyr. old. Good as the best. Bargain for the money. T. G. Riemenschneider, Grass Løke, Michigan REGISTERED PERCHERON

Mares and Stallions priced to sell. Inspection invited. L. C. HUNT. EATON RAPIDS. MICH. FOR SALE Stallion colts by Imposant—79403 (7885) F weight 2340 lbs. From marcs as good. Ages from two months to three vears old As as you can good find any where. Chas. Oscood & Sons. Mondon. Michigan.

BIG TYPE P. C. Boar and Gilts all sold for this season.

Armstrong Bros., R. 3. Fowlerville, Mich. Peters & Roche. 325 Vinewood, Betroit, Michigan



Make One Dollar Do The Work of Four in All Your Heavy Farm Work Adopt the wonderful power and service value of your Ford to real

labor saving, money earning work on your farm and still have your car ready for the use of your family when you are not working in the fields. You can do it with the Staude Mak-a-Tractor and improve the running of your Ford at the same time, by the permanent features of the Staube Mak-a-Tractor. New radiator, six times more efficient than the present Ford radiator—new force feed oiler—direct feed to motor bearings—sight gauge on dash. The tractor feature itself is installed or removed in twenty minutes.

Four Horse Work—One Horse Cost

In all your farm work, Plowing, Listing Cultivating, Discing, Crushing Clods, Pulling Stumps, Spreading manure, and any other farm work you are now doing with borses, Staude Mak-a-Tractor will give you four horse efficiency and yet it costs no more than one horse to buy and nothing to keep when it is not working. Plowing, it has been used with wonderful results by farmers all over the country pulling 28 inch bottom gang plows at a rate of 2½ miles an hour — hauling binders 3 miles an hour—and it will haul your heaviest farm wagons—fully loaded—anywhere horses can go—at 6 miles an hour.

Yet it gives you the use of your car for your family at any time, with only twenty minutes required to change it back for road use.

Staude's Masterpiece

This masterpiece of the inventive genius of E. G. Staude is time-tried, owner-tested, by hundreds of users all over the country in every kind of farm work during the past season. Install it on your car without boring any holes-without making any complicated connections. Take off the rear wheels and rear fenders—clamp the attachment to the car with four bolts—replace the Ford wheels with the Staude Roller Driving Pinlon integral with the brake drum and the work is done. The radiator and oiling system are permanent and valuable additions to your car. Remove the Staude axle, tractor wheels and drive pinions when you want your car for the road. The chan-nel frame may stay on the car without injuring the appearance or riding qualities, or you can easily take it off in five minutes.

Only the Best Materials

de Mak-a-Tractor is Quality designed, Quality built, cellular radiator — Staude designed — is the best tor ever built for Fords and the special oiling system is the most efficient.

Staude rear axle is back of the car axle, an exclusive feature. The drive pinions push down on the tractor wheels instead of pulling up on them. The Ford is pushed by the tractor wheels. There is no waste effort, Axle is cold rolled steel with 35 inch hitch, All the load is carried on the Stauds Mak-a-Tractor axle: none on the rear axle of the car.

Wonderful Motor Efficiency

We furnish a special Staude Ford Radiator—cellular type—six times as efficient as the standard Ford Radiator. The motor on a tractor heats up much quicker than if it were used in a faster moving vehicle. This is because the volume of air which passes through the radiator is much less when the car is moving slowly. We overcome this by increasing radiator capacity to offset this lower volume of air. Leave this on the car permanently—it's the best Ford Radiator ever built. 1917 Fords require individual radiator equipment—(specify model).

Staude Mak-a-Tractor final drive gear reduction gives 236 miles an hour for plowing with regular pinion equipment. An extra pinion gives a speed of five miles an hour for hauling vehicles. The motor speed never goes above 1000 K. P. M., a safe, economical, efficient rate of speed.

And so great is the mechanical efficiency that the Ford you use not only runs in high gear, but starts in high.

Lessen Your Work—Increase Your Earnings Today

Figure it out yourself—rental of two teams is easily \$10.00 a day—Staude Mak-a-Tractor doing the work of four horses at the cost of one, easily pays for itself in the first few weeks. After that it keeps on earning its cost price, month in and month out for years of service. Compare it with any other tractor—first cost is less than one-third that of any other doing enywhere near the same work and operating cost is only one-third as much cost is only one-third as much.

References: Any Bank in St. Paul or Minneapolis

E. G. STAUDE MANUFACTURING CO. St. Paul, Minn. 2667 West University Avenue

See your automobile or farm implement dealer today and mail the coupon NOW — TODAY for the big illustrated book - FREE. E. G. STAUDE MFG. CO. 2667 W. Univ. Av. St. Paul, Minnesota You can more than I would like to know how the Staude Mak-a-Tractor will cut down my cost of farm-ing and increase my crops. Please send me your Big Illustrared FREE Book "Reaping a Golden Harvest." without any obligation to me whatever pay for a Staude Mak - a - Tractor in the saving it will make for r you the first month.

