

MICHIGAN FARMER

AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY.
ESTABLISHED 1843.

VOL. CLX. No. 8
Whole Number 4241

DETROIT, MICH., SATURDAY, FEBRUARY 24, 1923

ONE YEAR \$1.00
FIVE YEARS \$3.00



BUY NOW While These Low Sale Prices Are On

Pretty Polly Prim Apron Bargain



TWO for

79c

The favorite Polly Prim style. One apron is in rich checked material, the other is in attractive striped. Long, wide sashes. Pockets trimmed with rick rack. A wonderful buy and one that will most certainly please the thrifty woman. It will certainly pay you to order several sets at our special price. Order by No. 18E5092. Send no money. Pay only 79c and postage on arrival. Money back guarantee.

Send No Money

Don't send one cent. Just letter or postcard brings you any of these smashed price bargains. Merely give name and number of each article you want. Also state size and write your name and address

Pay On Arrival

plainly to avoid delay. Pay nothing till goods arrive—then only the amazing bargain price and postage. If you are not delighted with your bargain return the goods and your money will be cheerfully refunded. ORDER NOW.

SHAROOD SAVES YOU MONEY

Women's Soft Kid

Strap Slippers

\$1.49



Always Mention Size

Soft kid leather slipper. Stylish strap model with two buttons. Medium round toe. Cushion insoles. Medium rubber heels. Solid oak leather soles. A bargain at our slashed price. Sizes 2 1/2 to 8. Wide widths. Order black by No. 18A228. Order brown by No. 18A229. Send no money. Pay \$1.49 and postage on arrival.

Women's Stitchdown Brown Oxfords

Classy stitch-down Oxford for women. Wonderfully comfortable and stylish. Uppers of dark mahogany leather. Smooth leather insoles. Flexible

\$1.98



stitched-down oak outsoles. Low rubber heels. Size 2 1/2 to 8. Wide widths. Order by No. 18A268. Send no money. Pay only \$1.98 and postage on arrival.

Order similar style Patent leather by No. 18A264. Price \$2.48. Pay \$2.48 and postage on arrival.

Women's Patent Gun Metal or Calf Finished Leather Oxfords

\$1.98

Made with imitation shield tip and medallion perforated vamp, perforated lace stay and circular foxing. Has a medium rubber heel and medium pointed toe. Sizes 2 1/2 to 8. Wide widths. Order Patent by No. 18A64. Order brown by No. 18A69. Order gun-metal by No. 18A70. Send no money. Pay \$1.98 and postage on arrival.



Be sure to state size.

Men's Hip Boots

Men's pure gum hip boots; friction lined; heavy corrugated sole and heel; 7 to 14. Wide widths. No half sizes.

\$2.98

Order by No. 18A949. Send no money. Pay \$2.98 and postage on arrival. State size wanted. Order similar style in knee boot size 7 to 12 by No. 18A950. Send no money. Pay \$2.98 and postage on arrival.



Women's Wool Knit Bouses

2 for \$1.98



New wool worsted Pollyann slip over, two for \$1.98, choice of all colors. Marvelous bargain in women's and misses' all wool worsted knit slip over, the very latest thing in smart Spring and Summer wear. Can be worn over a waist or with detachable collars and cuffs. Comes in Misses' sizes 14 to 20 and Women's 34 to 44. State size wanted. Choice of the following colors: orchid No. 18E6205, Buff No. 18E6206, Brown No. 18E6207, Jade No. 18E6208, Navy No. 18E6209. Send no money. Pay only \$1.98 and postage on arrival.

Fleur de Lis Colonial Slipper For Women

\$1.98

Send No Money



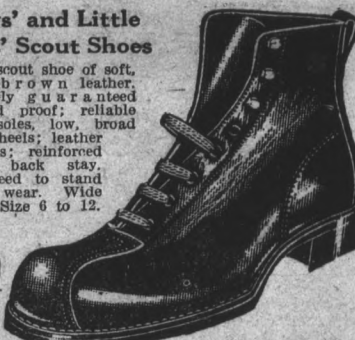
The newest style patent leather dress slipper. The popular Colonial Model. Has shiny metal buckle and the graceful Fleur de Lis Colonial tongue. Tongue, toe and slipper top are perforated, to give added richness, live rubber heels. Slippers like this are selling in cities for twice what we are asking. We guarantee they will please you. Sizes 2 1/2 to 8. Wide widths. State size wanted. Send no money. Order by No. 18A106. Pay \$1.98 and postage on arrival.

Boys' and Little Boys' Scout Shoes

Fine scout shoe of soft, pliable brown leather. Absolutely guaranteed barnyard proof; reliable sturdy soles; low, broad leather heels; leather insoles; reinforced leather back stay. Guaranteed to stand hardest wear. Wide widths. Size 6 to 12.

\$1.59

Order by No. 20A783. Send no money. Pay \$1.98 and postage on arrival. Order little boys' sizes, 9 to 13 1/2 by No. 18A565. Price \$1.59. Order big boys' sizes 1 to 6, by No. 18A564. Price \$1.79. Pay bargain price and postage on arrival. State size.



GUARANTEED For 6 Mo. Wear U. S. Army Shoes For Men and Boys

Men! Don't lose a moment in ordering this wonderful brown work shoe. It is made of leather as near waterproof as can be made—solid leather through and through with full grain leather uppers, guaranteed to wear six months. Easily worth \$5.00. Two full, heavy double soles, sewed and nailed for greater strength. Extra wide, full leather counter, riveted to prevent ripping. Sizes 6 to 11, wide widths. Order by No. 18A699. Send no money. Pay \$2.98 and postage on arrival. Same shoe in boys' sizes 1 to 5 1/2. Wide widths. Order by No. 18A550. Pay \$2.69 and postage on arrival.

\$2.98



Pretty Sateen Dress Apron

\$1.59



Splendid quality black sateen which wears wonderfully. Graceful V-neck, sleeves and belt trimmed with gay colored cretonne. Pockets and cuffs edged with contrasting piping. Pockets finished with crepe applique edged with piping. Sizes, small, medium or large. Order No. 18E6001. Send no money. Pay \$1.59 and postage on arrival. Money back if not satisfied. State size.

All Wool Polo Coats

\$4.98

Made of genuine all wool polo with beautiful large collar with two rows of stitching and novelty buttons. Has inverted pleat in the back like the best made coats and two novelty pockets, button trimmed. Comes about 34 inches in length. Comes in a beautiful color of reindeer tan. Misses' sizes 14 to 20. Women's sizes 34 to 44. Order by style No. 18E6900. Send no money. Pay only \$4.98 and postage on arrival.



Brand New Standard Tires Guaranteed 6000 Miles

30x3 \$5.98

Fresh stock of heavy, non-skid tires of live rubber. Generously oversized. 6,000 guaranteed, but often give 8,000 to 10,000 miles. Choice of non-skid or ribbed in 30x3 size. Others are non-skid. Pay only bargain price listed below and postage on arrival.

BARGAIN PRICE LIST

No. 18D4040—30 x 3	5.98
No. 18D4041—30 x 3 1/2	6.98
No. 18D4042—32 x 3 1/2	8.98
No. 18D4043—31 x 4	10.98
No. 18D4044—32 x 4	11.98
No. 18D4045—33 x 4	12.98
No. 18D4046—34 x 4	12.98

8,000 MILE GUARANTEE

SHAROOD'S JUNIOR CORD, 30x3 1/2. Same sturdy construction as regular cord, but not oversized. A wonder-service tire for Ford. Order by No. 18D4090. Send no money. Pay only \$9.19 and postage on arrival.

GUARANTEED INNER TUBES

Now is your chance to buy extra thick, live rubber inner tubes at a big saving. Don't wait for tube prices to go up. How many shall we send? Give size wanted. No money now. Pay only bargain price and postage on arrival.

BARGAIN PRICE LIST

No. 18D4020—30 x 3	\$9.99
No. 18D4021—30 x 3 1/2	1.19
No. 18D4022—32 x 3 1/2	1.45
No. 18D4023—31 x 4	1.59
No. 18D4024—32 x 4	1.79
No. 18D4025—33 x 4	1.79
No. 18D4026—34 x 4	1.79

Women's Patent Leather or Brown Calf Finish Pumps

\$1.98



State Size

Sizes 2 1/2 to 8, wide widths, in black patent leather—a stunning one-strap model with imitation shield tip medallion. Effectively perforated. Has medium rubber heel. Order Patent by No. 18A72. \$1.98. Order Brown by No. 18A73. Send no money. Pay \$1.98 and postage on arrival.

Men's Rubber 4 Buckle Arctics

Guaranteed best quality, all rubber 4-buckle hi-cut arctic for men. Made with double thick soles and seams reinforced. Snow excluding tongue. Furnished in men's sizes 7 to 15. Wide widths. Sensational value. Send quick. Order by No. 18A990. Send no money. Pay \$2.48 and postage on arrival. State size.

\$2.48



Order Quick

Be Sure to Mention All Sizes, Colors, etc., and Send All Orders From This Page Direct to

SHAROOD CO.

Dept. 18

MINNEAPOLIS MINNESOTA

DEVOTED
TO
MICHIGAN
VOLUME CLX.

MICHIGAN FARMER

AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY. ESTABLISHED 1843.

A Practical Journal for the Rural Family
MICHIGAN SECTION THE CAPPER FARM PRESS

QUALITY
RELIABILITY
SERVICE
NUMBER EIGHT

The Life Story of Apple Scab Fungus

With Some Practical Suggestions as to Its Control

By G. H. Coons

Plant Pathologist, M. A. C.

I MIGHT feel like apologizing for the choice of subject were it not for the fact that the big problem in Michigan horticulture today is simply this—the prevention of the enormous losses which apple scab is causing, not alone to our yields but to our standards. As I have gone over the state and seen the losses from scab in ordinarily well cared for orchards, as I hear the reports of inspectors who are trying to hold up the standards of Michigan apples, as I note the critical



Scab as we know it.

comments from those who buy Michigan fruit, I have been impressed by the fact that our fruit men are not conquering scab, that they are not winning out in the control of this ancient enemy to the apple.

I find that fruit men are in a quandary as to when to spray and how to spray. They are switching from one material to another, from spray to dust and then back again; and there are those who decry the spray gun as the cause of all their troubles. I cite these things to call your attention to the fact that with this plant disease about which we know so much, and whose successful control has become a classic in horticulture, there still are angles that Michigan growers do not know and the whole situation is sadly confused.

The first step in apple scab control is to understand exactly what is happening when the apple scab parasite attacks the leaf or the fruit and produces disease. The nature of the parasite, its life history, its habits—all these must be understood perfectly—there must be no guess work about it.

What is Apple Scab?

If I were to ask, "What is apple scab?" many would feel that they knew apple scab when they saw it, but I am positive that not one man in a hundred could recognize apple scab in all of its manifestations. Apple scab, as you know, is the blemish on the fruit. Do you know apple scab on the leaves? If you know the typical scab spot with its puckering effect as it attacks the upper surface, do you know it as it grows as a sooty black film on the under surface? How many have ever seen it on the petioles of the leaves or on the pedicels of the fruit? How many know what it looks like on the twigs? Have you seen the winter stage which forms on the fallen leaves—could you intelligently collect specimens of this stage to send to me for test to determine the time of spraying for your locality? I am willing to

state that I don't believe very many fruit men know apple scab—the real, full, complete apple scab, when he sees it. I am not bringing these things up in condemnation; they are merely explanatory of the situation in which we find ourselves. We have been going out after big game, but we didn't know what we were hunting for.

Probably the first evidence that the fruit grower will see of scab is this general effect on the fruit. The scab spots are clustered near the calyx end of the apple. You can always tell a scab spot by the whitish border of ruptured, pushed up cuticle that surrounds it.

Commonly, as the scab spot becomes older, the apple develops a layer of cork in the center of the scab spot, and hence the spot appears with a brown center surrounded by a greenish black ring.

Apple scab on the leaves appears as black, sooty spots after causing a puckering or bulging of the leaf. With some varieties a reddish color is produced about the scab spot.

On the under surface of the leaf the scab fungus often spreads out as a sooty mold without producing definite scab spot.

On the petioles and on the fruit stems, scab exists as small black cankers which tend to girdle the leaf or fruit, as the case may be, causing the affected parts to drop off the tree. In years of severe scab infestation it is not unusual to find trees badly defoliated as a result of such scab attack. In all these scab spots, the fungus is growing and reproducing. The microscope shows that the apple scab fungus consists of heavy-walled, dark threads, which penetrate the apple tissue, sucking food and water from it. After growing on the apple tissue, either fruit or leaf, the fungus produces a crop of spores—seed-like bodies which serve to spread the scab. In the illustration given, which is a section through a small scab spot, some twenty spores are seen just about ready to be released, and each capable, if put under right conditions, of

producing a new scab spot. In the whole scab spot of which a section is shown, there are probably four hundred such spores. As this crop of spores matures new spores are produced. The possibilities of increase of scab are enormous.

Let us follow one of these spores. Suppose it is carried by wind or rain to a healthy leaf. If it finds water and proper temperature conditions, the spore sprouts, bores into the leaf and establishes itself. In a week the leaf is scabbed and a new crop of spores is produced. Over and over again this story is repeated, each crop of spores multiplying the scab a hundred fold. It is just this power of the scab fungus, starting from a few infections in the spring, to increase one hundred fold with every spell of wet weather, that makes it the serious loss producer that it is.

What has been described is the summer stage produced over and over again in the growing season. Affected leaves fall to the ground and during the fall, winter and early spring the scab fungus keeps on developing in the leaves. In early April the fallen leaves become dotted with fine pepper-like dots—the winter stage of the fungus. Inside these black dots—for they are really spherical spore cases—there develops as the weather gets warmer, the winter spores of the apple scab fungus. These are produced in minute sacks, eight to a sack, and their development can be watched day by day with the microscope. First the sacks form, then spores, small, light-colored, appear; then the spores become two-celled and finally a strong wall develops on the spores. Finally the spores become mature and ready to infect the apple. Nature has fitted these spores perfectly to accomplish their own purpose. When the spores are mature and are soaked by a gentle rain, they swell and finally pop out of the case in which they are produced. The wind catches them up and blows them here and there. Some reach the apple.

Let us see what state the apple is in

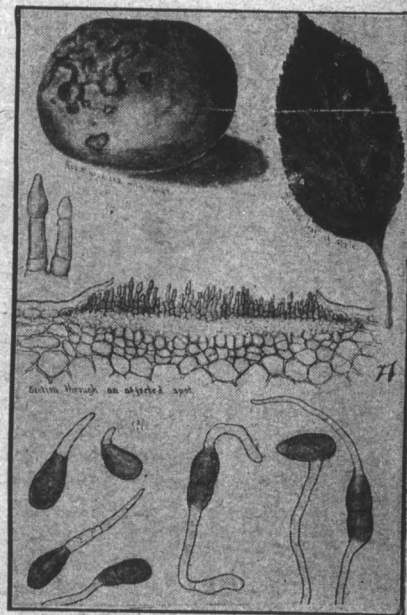
when this spore liberation takes place. Repeated observations in various orchards in Michigan have shown that the spores are liberated at about the time when the buds are swelling and the first leaves push out—in other words, before the pink stage which was formerly thought to be the danger period.

The accompanying table of observations made by Mr. C. W. Bennett, of the Michigan Agricultural College in 1922, illustrates what is happening in the orchard, both with the fruit trees and the fungus.

Record of apple scab development. (Duchess orchard at Grand Rapids, leaves collected and sent in by Donald Hootman).

April 8—Leaves show plenty of apple scab, winter stage, immature.

April 10—Winter spores of apple



Forms of Scab we do Not Know.

scab beginning to be brown. Apple buds quarter-inch long, little swollen.

April 13—Twenty per cent of spores brown, apparently some of the spores mature.

April 17—Probably seventy per cent of the spores ripe, only waiting for favorable moisture conditions for discharge.

April 19—Cold, snow, no discharge of spores.

April 20—Weather fair, no discharge.

April 21—Weather fair, no discharge.

April 22—Spores all mature, no discharge.

April 24—Blossoms pre-pink, spray applied.

April 25—Rain through night of the twenty-fourth, some spores discharged, (five per cent).

April 26-30—Weather fair.

May 2—No spore discharge, blossoms in pink.

May 3—Weather warm, rain. Light spore discharge, (ten per cent).

May 4—No spore discharge. Blossoms in pink, spray applied.

May 8—Light rain, spores being discharged. Probably twenty per cent of spore crop discharged on this date.

May 9—Rain early in the morning, spores discharging. Eighty per cent of spores discharged.

May 11-17—Weather clear, no spores discharged.

May 18—Rain. Spores remaining discharged.

May 19—Rain through night and (Continued on page 266).



Time is the Greatest Factor in Spraying.

BUY NOW While These Low Sale Prices Are On

Pretty Polly Prim Apron Bargain



TWO for

79c

The favorite Polly Prim style. One apron is in rich checked material, the other is in attractive striped. Long, wide sashes. Pockets trimmed with rick rack. A wonderful buy and one that will most certainly please the thrifty woman. It will certainly pay you to order several sets at our special price. Order by No. 18E5092. Send no money. Pay only 79c and postage on arrival. Money back guarantee.

Send No Money

Don't send one cent. Just letter or postcard brings you any of these smashed price bargains. Merely give name and number of each article you want. Also state size and write your name and address

Pay On Arrival

plainly to avoid delay. Pay nothing till goods arrive—then only the amazing bargain price and postage. If you are not delighted with your bargain return the goods and your money will be cheerfully refunded. ORDER NOW.

SHAROOD SAVES YOU MONEY

Women's Soft Kid

Strap Slippers

\$1.49



Always Mention Size

Soft kid leather slipper. Stylish strap model with two buttons. Medium round toe. Cushion insoles. Medium rubber heels. Solid oak leather soles. A bargain at our slashed price. Sizes 2½ to 8. Wide widths. Order black by No. 18A228. Order brown by No. 18A229. Send no money. Pay \$1.49 and postage on arrival.

Women's Stitchdown Brown Oxfords

Classy stitch-down Oxford for women. Wonderfully comfortable and stylish. Uppers of dark mahogany leather. Smooth leather insoles. Flexible

\$1.98



stitch-down oaks outsoles. Low rubber heels. Size 2½ to 8. Wide widths. Order by No. 18A268. Send no money. Pay only \$1.98 and postage on arrival. Order similar style Patent leather by No. 18A264. Price \$2.48. Pay \$2.48 and postage on arrival.

Women's Wool Knit Bouses

2 for \$1.98



State Color and Size

New wool worsted Pollyann slip over, two for \$1.98, choice of all colors. Marvelous bargain in women's and misses' all wool worsted knit slip over, the very latest thing in smart Spring and Summer wear. Can be worn over a waist or with detachable collars and cuffs. Comes in Misses' sizes 14 to 20 and Women's 34 to 44; State size wanted. Choice of the following colors: orchid No. 18E6205, Buff No. 18E6206, Brown No. 18E6207, Jade No. 18E6208, Navy No. 18E6209. Send no money. Pay only \$1.98 and postage on arrival.

Fleur de Lis Colonial Slipper For Women

\$1.98

Send No Money

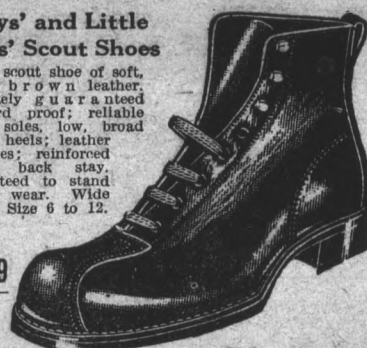


The newest style patent leather dress slipper. The popular Colonial Model. Has shiny metal buckle and the graceful Fleur de Lis Colonial tongue. Tongue, toe and slipper top are perforated, to give added richness, live rubber heels. Slippers like this are selling in cities for twice what we are asking. We guarantee they will please you. Sizes 2½ to 8. Wide widths. State size wanted. Send no money. Order by No. 18A106. Pay \$1.98 and postage on arrival.

Boys' and Little Boys' Scout Shoes

Fine scout shoe of soft, pliable brown leather. Absolutely guaranteed barnyard proof; reliable sturdy soles, low, broad leather heels; leather insoles; reinforced leather back stay. Guaranteed to stand hardest wear. Wide widths. Size 6 to 12.

\$1.59



Order by No. 20A783. Send no money. Pay \$1.98 and postage on arrival. Order little boys' sizes, 9 to 13½ by No. 18A565. Price \$1.59. Order big boys' sizes 1 to 6, by No. 18A564. Price \$1.79. Pay bargain price and postage on arrival. State size.

GUARANTEED For 6 Mo. Wear U. S. Army Shoes For Men and Boys



Men! Don't lose a moment in ordering this wonderful brown work shoe. It is made of leather as near water-proof as can be made. Solid leather through and through with full grain leather uppers, guaranteed to wear six months. Easily worth \$5.00. Two full, heavy double soles, sewed and nailed for extra strength. Extra wide, full leather counter, riveted to prevent ripping. Sizes 6 to 11, wide widths. Order by No. 18A699. Send no money. Pay \$2.98 and postage on arrival. Same shoe in boys' sizes 1 to 5½. Wide widths. Order by No. 18A550. Pay \$2.69 and postage on arrival.

\$2.98

Order by No. 18A949. Send no money. Pay \$2.98 and postage on arrival. State size wanted. Order similar style in knee boot size 7 to 12 by No. 18A950. Send no money. Pay \$2.98 and postage on arrival.

Men's Hip Boots

Men's pure gum hip boots; friction lined; heavy corrugated sole and heel; 7 to 14. Wide widths. No half sizes.

\$2.98



Be sure to state size.



Women's Comfort Oxfords or Hi-Cut Shoes only

\$1.98

Send No Money

SIZES 2½ to 8

State State

Every woman should get a pair of these sensible broad toe shoes at this amazing price. Uppers of soft kid-finish leather. Solid oak leather soles. Low rubber heels; comfort cushioned insoles. Sizes 2½ to 8. Order Oxford by No. 18A233. Order High Shoe by No. 18A263. Send no money. Pay \$1.98 and postage on arrival.

Women's Patent Leather or Brown Calf Finish Pumps

\$1.98



State Size

Sizes 2½ to 8, wide widths, in black patent leather—a stunning one-strap model with imitation shield tip medallion. Effectively perforated. Has medium rubber heel. Order Patent by No. 18A72. \$1.98. Order Brown by No. 18A73. Send no money. Pay \$1.98 and postage on arrival.

Men's Rubber 4 Buckle Arctics

Guaranteed best quality, all rubber 4-buckle hi-cut arctic for men. Made with double thick soles and seams reinforced. Snow excluding tongue. Furnished in men's sizes 7 to 15. Wide widths. Sensational value. Send quick. Order by No. 18A990. Send no money. Pay \$2.48 and postage on arrival. State size.

\$2.48



Order Quick

Pretty Sateen Dress Apron

\$1.59



Splendid quality black twill sateen which wears wonderfully. Graceful V-neck, sleeves and belt trimmed with gay colored cretonne. Pockets and cuffs edged with contrasting piping. Pockets finished with crepe applique edged with piping. Sizes, small, medium or large. Order No. 18E6001. Send no money. Pay \$1.59 and postage on arrival. Money back if not satisfied. State size.

All Wool Polo Coats

\$4.98

Made of genuine all wool polo with beautiful large collar with two rows of stitching and novelty buttons. Has inverted pleat in the back like the best made coats and two novelty pockets, button trimmed. Comes about 34 inches in length. Comes in a beautiful color of reindeer tan. Misses' sizes 14 to 20. Women's sizes 34 to 44. Order by style No. 18E6900. Send no money. Pay only \$4.98 and postage on arrival.



Brand New Standard Tires Guaranteed 6000 Miles

30x3 \$5.98

Fresh stock of heavy, non-skid tires of live rubber. Generously oversized. 6,000 guaranteed, but often give 8,000 to 10,000 miles. Choice of non-skid or rib tread in 30x3 size. Others are non-skid. Pay only bargain price listed below and postage on arrival.

BARGAIN PRICE LIST	
No. 18D4040—30 x 3	5.98
No. 18D4041—30 x 3½	6.98
No. 18D4042—32 x 3½	8.98
No. 18D4043—31 x 4	10.28
No. 18D4044—32 x 4	11.98
No. 18D4045—33 x 4	12.28
No. 18D4046—34 x 4	12.98

8,000 MILE GUARANTEE SHAROOD'S JUNIOR CORD, 30x3½. Same sturdy construction as regular cord, but not oversized. A wonder-service tire for Fords. Order by No. 18D4090. Send no money. Pay only \$9.19 and postage on arrival.

GUARANTEED INNER TUBES Now is your chance to buy extra thick, live rubber inner tubes at a big saving. Don't wait for tube prices to go up. How many shall we send? Give size wanted. No money now. Pay only bargain price and postage on arrival.

BARGAIN PRICE LIST	
No. 18D4020—30 x 3	\$0.99
No. 18D4021—30 x 3½	1.19
No. 18D4022—32 x 3½	1.45
No. 18D4023—31 x 4	1.69
No. 18D4024—32 x 4	1.79
No. 18D4025—33 x 4	1.79
No. 18D4026—34 x 4	1.79

Be Sure to Mention All Sizes, Colors, etc., and Send All Orders From This Page Direct to

SHAROOD CO.

Dept. 18

MINNEAPOLIS MINNESOTA

DEVOTED
TO
MICHIGAN
VOLUME CLX.

MICHIGAN FARMER

AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY. ESTABLISHED 1843.

A Practical Journal for the Rural Family
MICHIGAN SECTION THE CAPPER FARM PRESS

QUALITY
RELIABILITY
SERVICE
NUMBER EIGHT

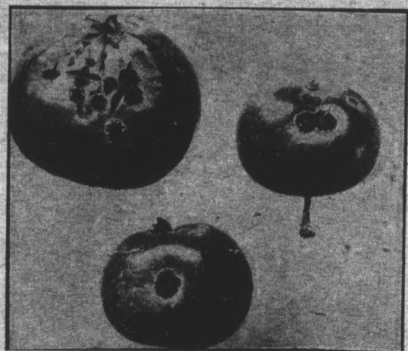
The Life Story of Apple Scab Fungus

With Some Practical Suggestions as to Its Control

By G. H. Coons

Plant Pathologist, M. A. C.

I MIGHT feel like apologizing for the choice of subject were it not for the fact that the big problem in Michigan horticulture today is simply this—the prevention of the enormous losses which apple scab is causing, not alone to our yields but to our standards. As I have gone over the state and seen the losses from scab in ordinarily well cared for orchards, as I hear the reports of inspectors who are trying to hold up the standards of Michigan apples, as I note the critical



Scab as we know it.

comments from those who buy Michigan fruit, I have been impressed by the fact that our fruit men are not conquering scab, that they are not winning out in the control of this ancient enemy to the apple.

I find that fruit men are in a quandary as to when to spray and how to spray. They are switching from one material to another, from spray to dust and then back again; and there are those who decry the spray gun as the cause of all their troubles. I cite these things to call your attention to the fact that with this plant disease about which we know so much, and whose successful control has become a classic in horticulture, there still are angles that Michigan growers do not know and the whole situation is sadly confused.

The first step in apple scab control is to understand exactly what is happening when the apple scab parasite attacks the leaf or the fruit and produces disease. The nature of the parasite, its life history, its habits—all these must be understood perfectly—there must be no guess work about it.

What is Apple Scab?

If I were to ask, "What is apple scab?" many would feel that they knew apple scab when they saw it, but I am positive that not one man in a hundred could recognize apple scab in all of its manifestations. Apple scab, as you know, is the blemish on the fruit. Do you know apple scab on the leaves? If you know the typical scab spot with its puckering effect as it attacks the upper surface, do you know it as it grows as a sooty black film on the under surface? How many have ever seen it on the petioles of the leaves or on the pedicels of the fruit? How many know what it looks like on the twigs? Have you seen the winter stage which forms on the fallen leaves—could you intelligently collect specimens of this stage to send to me for test to determine the time of spraying for your locality? I am willing to

state that I don't believe very many fruit men know apple scab—the real, full, complete apple scab, when he sees it. I am not bringing these things up in condemnation; they are merely explanatory of the situation in which we find ourselves. We have been going out after big game, but we didn't know what we were hunting for.

Probably the first evidence that the fruit grower will see of scab is this general effect on the fruit. The scab spots are clustered near the calyx end of the apple. You can always tell a scab spot by the whitish border of ruptured, pushed up cuticle that surrounds it.

Commonly, as the scab spot becomes older, the apple develops a layer of cork in the center of the scab spot, and hence the spot appears with a brown center surrounded by a greenish black ring.

Apple scab on the leaves appears as black, sooty spots after causing a puckering or bulging of the leaf. With some varieties a reddish color is produced about the scab spot.

On the under surface of the leaf the scab fungus often spreads out as a sooty mold without producing definite scab spot.

On the petioles and on the fruit stems, scab exists as small black cankers which tend to girdle the leaf or fruit, as the case may be, causing the affected parts to drop off the tree. In years of severe scab infestation it is not unusual to find trees badly defoliated as a result of such scab attack. In all these scab spots, the fungus is growing and reproducing. The microscope shows that the apple scab fungus consists of heavy-walled, dark threads, which penetrate the apple tissue, sucking food and water from it. After growing on the apple tissue, either fruit or leaf, the fungus produces a crop of spores—seed-like bodies which serve to spread the scab. In the illustration given, which is a section through a small scab spot, some twenty spores are seen just about ready to be released, and each capable, if put under right conditions, of

producing a new scab spot. In the whole scab spot of which a section is shown, there are probably four hundred such spores. As this crop of spores matures new spores are produced. The possibilities of increase of scab are enormous.

Let us follow one of these spores. Suppose it is carried by wind or rain to a healthy leaf. If it finds water and proper temperature conditions, the spore sprouts, bores into the leaf and establishes itself. In a week the leaf is scabbed and a new crop of spores is produced. Over and over again this story is repeated, each crop of spores multiplying the scab a hundred fold. It is just this power of the scab fungus, starting from a few infections in the spring, to increase one hundred fold with every spell of wet weather, that makes it the serious loss producer that it is.

What has been described is the summer stage produced over and over again in the growing season. Affected leaves fall to the ground and during the fall, winter and early spring the scab fungus keeps on developing in the leaves. In early April the fallen leaves become dotted with fine pepper-like dots—the winter stage of the fungus. Inside these black dots—for they are really spherical spore cases—there develops as the weather gets warmer, the winter spores of the apple scab fungus. These are produced in minute sacks, eight to a sack, and their development can be watched day by day with the microscope. First the sacks form, then spores, small, light-colored, appear; then the spores become two-celled and finally a strong wall develops on the spores. Finally the spores become mature and ready to infect the apple. Nature has fitted these spores perfectly to accomplish their own purpose. When the spores are mature and are soaked by a gentle rain, they swell and finally pop out of the case in which they are produced. The wind catches them up and blows them here and there. Some reach the apple.

Let us see what state the apple is in

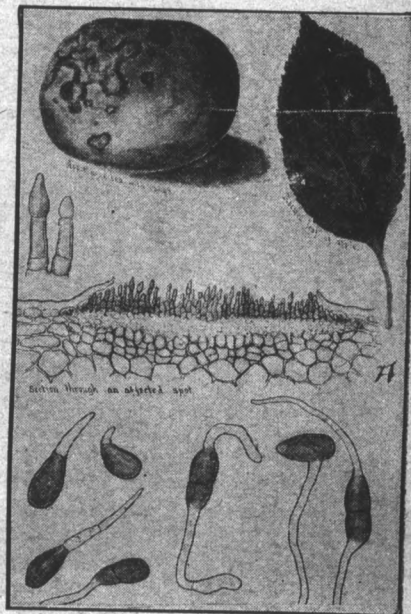
when this spore liberation takes place. Repeated observations in various orchards in Michigan have shown that the spores are liberated at about the time when the buds are swelling and the first leaves push out—in other words, before the pink stage which was formerly thought to be the danger period.

The accompanying table of observations made by Mr. C. W. Bennett, of the Michigan Agricultural College in 1922, illustrates what is happening in the orchard, both with the fruit trees and the fungus.

Record of apple scab development. (Duchess orchard at Grand Rapids, leaves collected and sent in by Donald Hootman).

April 8—Leaves show plenty of apple scab, winter stage, immature.

April 10—Winter spores of apple



Forms of Scab we do Not Know.

scab beginning to be brown. Apple buds quarter-inch long, little swollen.

April 13—Twenty per cent of spores brown, apparently some of the spores mature.

April 17—Probably seventy per cent of the spores ripe, only waiting for favorable moisture conditions for discharge.

April 19—Cold, snow, no discharge of spores.

April 20—Weather fair, no discharge.

April 21—Weather fair, no discharge.

April 22—Spores all mature, no discharge.

April 24—Blossoms pre-pink, spray applied.

April 25—Rain through night of the twenty-fourth, some spores discharged, (five per cent).

April 26-30—Weather fair.

May 2—No spore discharge, blossoms in pink.

May 3—Weather warm, rain. Light spore discharge, (ten per cent).

May 4—No spore discharge. Blossoms in pink, spray applied.

May 8—Light rain, spores being discharged. Probably twenty per cent of spore crop discharged on this date.

May 9—Rain early in the morning, spores discharging. Eighty per cent of spores discharged.

May 11-17—Weather clear, no spores discharged.

May 18—Rain. Spores remaining discharged.

May 19—Rain through night and (Continued on page 266).



Time is the Greatest Factor in Spraying.



Published Weekly Established 1843 Copyright 1923

The Lawrence Publishing Co.

Editors and Proprietors

1832 LaPayette Boulevard Detroit, Michigan
Telephone Cherry 8384NEW YORK OFFICE 501 Fifth Ave.
CHICAGO OFFICE 109 No. Dearborn St.
CLEVELAND OFFICE 1011-1013 Oregon Ave., N. E.
PHILADELPHIA OFFICE 261-263 South Third St.ARTHUR CAPPER President
MARCO MORROW Vice-President
PAUL LAWRENCE Vice-President
F. H. NANCE SecretaryL. R. WATERBURY Associate Editor
BURT WERMUTH Editors
FRANK A. WILKEN Editors
ILA A. LEONARD Editors
P. P. POPE Field Editor

I. R. WATERBURY Business Manager

TERMS OF SUBSCRIPTION

One Year, 52 issues \$1.00
Three Years, 156 issues \$2.00
Five Years, 260 issues \$3.00
All Sent Postpaid
Canadian subscription 50c a year extra for postage

RATES OF ADVERTISING

55 cents per line agate type measurement, or \$7.70 per inch (14 agate lines per inch) per insertion. No advertisement entered as Second Class Matter at the Post Office at Detroit, Michigan, Under the Act of March 3, 1879, disbursement inserted for less than \$1.00 each insertion. No objectionable advertisements inserted at any time.

Member Audit Bureau of Circulation

VOLUME CLX

NUMBER EIGHT

DETROIT, FEBRUARY 24, 1923

CURRENT COMMENT

THE MICHIGAN FARMER SAYS:

Zero means nothing except when it relates to weather. Then it means give the fire another poke.

Only too often we hunt the world for happiness when its well-springs are within ourselves.

A thing that is seldom introduced in legislative bodies is a bill to cut official salaries.

Sunshine follows storms. So do higher prices follow slumps. Therefore, watch potatoes this year.

This is seed-catalog time. Let us remember that often the more intense the color in the catalog, the poorer will be the quality of the seed.

Now is the time to take Time by the forelock by getting things ready for spring. If you don't do that, Time may take you by the forelock.

The Golden Age

IT will soon be one hundred years since our youngest grandparent put in his appearance upon this old earth. We are astonished to learn that within the period of his remembrance greater progress has been made toward higher civilization than for the four thousand years preceding. In other words, the last century has witnessed as great advancement as the forty preceding centuries put together. The railroad, the steam boat, the modern printing press, have all come into use; the sickle, the scythe and the cradle have been laid aside for the self-binder; the steel plow is a new thing. Our improved breeds of domestic animals and varieties of plants have mostly been developed within that period; the automobile and the airplane, the telegraph and the telephone and all the other things in common use that the internal combustion engine and the power of electricity have brought, are only in their infancy.

We take all these things for granted as if they were a natural part of the universe into which we were born, and, oh! how we howl if the knocker on the binder fails to tie, or we can't get central, or if we only run out of gas. Along come a few years when we suffer reverse of fortune and we get clear discouraged; we are sure that farming has reached the top and is sliding down on the other side; we

want to sell out and quit. We either cannot or will not look more than a year or two either way from now. Shame on us! Where is our vision? Where our patience?

Our grandfathers, our fathers, and ourselves, all of our immediate families and our friends are living in a golden age, an age when civilization has reached the highest plane ever known to man. And we, here in America, in the United States, in Michigan, are right in the heart of it. If history offers us any criterion this golden age is good for at least another five hundred years, so why worry?

Ignorance and Knowledge

LAST week, in Detroit, a short distance out Woodward avenue, a restaurant was opened. The proprietor was inexperienced. A local potato jobber, who found himself with heavier supplies than he needed, learned of this man's inexperience. He called and sold some seventy bushels at an advance of twenty-five cents over the local market.

In this transaction the proprietor suffered loss because of his ignorance, while the wise jobber received more under the circumstances than was due him. It has been ever thus. The informed person always has an advantage over the one who does not know. Ignorance is the heaviest liability in any man's business. The farmer, of all classes, suffers most from a lack of reliable information.

The state legislature is now debating a bill which, if passed, would repeal the law enacted in 1921 providing for the gathering each year by the supervisors of the various townships of the state, definite data on farm crops and live stock.

Regardless of the politics involved and of the opposition of many overworked (?) supervisors, the fact remains that the data furnished through the provisions of this act would, in the course of a comparatively short time, become the solid foundation upon which a system of real business farming and intelligent marketing of farm products could be built.

The Farm Woodlot

THE farm woodlot is an institution which we hear much about and sometimes see. It has been in various up and down stages of development ever since we cleared the land to find a little place to farm. Most farm woodlots just happen because they are that part of the land which we have not gotten around to clear. In most cases we eventually expect to turn that land into farming. In other words, we have not taken the farm woodlot seriously. There are several reasons for our attitude. First, timber and fuel wood was too easy to get, so cheap to buy that we felt our standing timber was occupying land which could otherwise be made profitable. Then came the time when it was so easy to go to town and buy our lumber all dressed and cut to fit, and as for stove wood, that was getting out of date.

But now we are at another stage of development. Lumber is sky-high and hard to get. In a few generations our timber supply has crept from our very doors to the far south. That supply is rapidly exhausting and soon South America will be a very important source of lumber. With such developments, and with our present disregard for timber conservation, we can safely say that lumber prices will mount to higher levels, because the farther we have to haul it the greater the cost. Transportation will continue to be a larger factor in our lumber costs.

Wood as fuel may be considered a forgotten factor; because, despite the manipulation of miners and fuel bar-

ons, and our best efforts at conservation, wood will be too scarce and too high to burn.

With all this, the woodlot takes on a new significance. With these new price levels it will, and has even now, become a profitable part of the farm. The late George B. Horton has proven that a well cared for woodlot may easily become a profitable part of one's farming operations.

To practically assist timber conservation through woodlots, we need organized effort and information regarding the marketing of its products. Many who have wood products to sell do not know where to find suitable markets. The Forestry Departments of the Michigan Agricultural College and the University of Michigan have realized this. The latter is now making an effort to gather practical information along these lines. Soon they will mail questionnaires to a large number of farmers throughout the state. Through these they will endeavor to learn the present status of the Michigan woodlot. To those who get these questionnaires we urge full cooperation, as such cooperation will result ultimately in greater profit to you and a great step forward in the vital need of timber conservation.

Some day all of us will think a lot of woodlots.

A Grange Achievement

A LETTER from a real dirt farmer who has just migrated to Michigan from Indiana, brings us this pertinent question: "Shall I join the Grange?"

Our answer to him is, "By all means. And do more than merely join—become an integral part of the organization. Put energy and thought and life into it. It will prove your finest investment."

The Grange has been a most resourceful organization. It has dealt with fundamentals—the most important of which is the education of its membership. It would seem that the great achievement of the Grange has been the bringing of definite issues to the attention of farm folks.

What does this amount to? Everything. To coax, or tease, people to think about things pertaining to their work or their living, may mean the difference between success and failure, between progress and decay; between civilization and paganism.

A Heap O' Livin

EDGAR A. GUEST is called the most widely read, most human, most beloved writer of lines of modern times. In his most pleasing vein, he writes: "It takes a heap o' livin' in a house to make it home." How well this thought applies to the farm as well as to the house.

The farm that is looked upon as a purely commercial asset to be bought and sold as fancy dictates, seldom adds greatly to the sum total of human happiness and satisfaction in the country. It is this farm that is turned over to a renter at the earliest opportunity. There is little concern for the fertility of the fields, and if the buildings are painted, it is with the idea of increasing the selling price, rather than of preservation and pride in their appearance.

The things that bind one to the farm multiply with the years spent thereon, and the interest taken in that farm. You study the soil, plan the rotation of crops, arrange the fields, plow and plant and cultivate with your own hands until you know each field intimately; you fertilize the weak spots, lime the sour spots, drain the wet spots; you build fences where

they serve you best, buildings to house the live stock, shelter the garnered crops and give comfort to yourself and yours; you raise good live stock and breed them better generation after generation; you plant trees, shrubs and orchards and the good wife helps. Here you see your children appear and grow up around you; you struggle to give them an education; you see some of your dear ones depart.

Each one of these incidents forms a tie that binds you closer and closer to the old farm. No one on earth is quite so well acquainted with it as you; no one can handle it to quite so good advantage as you; you dislike to let them try. You go to the city for a thrill and get a bigger one on your return; the familiar fields have become as a part of you, or you a part of them, which? There is no place on earth where you fit in so perfectly, or that fits you quite so well. It is home. Truly, a heap o' livin' on a farm is what makes it home, and if you can lay claim to a home like this, you are the proprietor of one of the nation's greatest institutions, and can qualify as one of her most useful, most successful, most worthy citizens.

G. Washington and Me

MR. G. WASHINGTON was a man what cut down a cherry tree and got his name in the paper. I cut down a whole peach orchard and nobody said nothing about it. Maybe it was the kind of tree what made the difference.

Also, G. Washington got up a lot a rules of conduct so he would know how to conduct himself. Sophie says the one big difference between G. and me is that he

tried to conduct himself and I never did. I say that the difference is that G. lived in 1776 and I in 1923, which is considerable over 100 years. And another difference

is G. wore short pants and white hair; but me, long pants and black hair. All of which goes to show that there was lots of opportunities of bein' famous what I didn't have.

But I gotta admit G. had what you call accomplishments. For inst., he crossed the Delaware River when there was ice on it. The other day I tried to cross Delaware Street when there was ice on it, and I fell down. It kinda looks like G. got famous 'cause he didn't fall down on his job. All I got was injured, when I fell down.

Now, another thing that is in G.'s favor is that he was born February 22 when all the banks in the country close. Some fellows do have luck, don't they? The day I was born the banks was closed, too, but that was because it was on Sunday.

Now, Mr. Washington helped his country to be born and he could claim the fatherhood of a nice brand new baby. But when a fellow's country is nearly one hundred and fifty years old and is full of the cumulations of age resultin' from punk politics and such diseases, claimin' fatherhood ain't no fun.

But we gotta give G. credit for helpin' when the baby was born, and walkin' the floor with it durin' its colicky period. Them is always important days for the young, and the impression a good father makes is very important. For inst., our Sammy and Sari kin tell you there's lots of things what I impressed on various parts of them what they will never forget.

If anybody wants to be a good father, I advise him to read about G. Washington. It makes good readin'.

HY SYCKLE.



More Beans Per Acre for 1923

Bigger Yields Per Acre Mean Less Cost Per Bushel

By J. F. Cox

Prof. Farm Crops, M. A. C.

THE excellent prizes offered for beans of the 1922 crop will undoubtedly encourage growers to plant an even greater acreage in 1923. The existing national situation apparently warrants the maintenance of the present large Michigan acreage, possibly a reasonable increase in well favored bean districts, since the present production of the United States is about the same as the total production of the years before the outbreak of the European war in 1914. The increase in population, the new market demands which have developed, the new uses for beans, better ways of preparing the crop for food, and the greater popularity of beans as a food, may materially increase the size of the crop needed for home consumption.

The tariff of \$1.75 per 100 pounds now in effect, affords some protection against competition of imported beans. The bean crop is apparently on a sound footing, if the acreage is not increased to too great an extent. Whether the price received is high or low, those growers who make the most are the ones who produce beans at the lowest cost.

All who grow beans are interested in securing the most profit possible from the crop. The average yield for the state for the past six years is approximately ten bushels per acre, and yet there are many growers who have consistently secured twenty bushels, and some thirty bushels or more per acre.

The cost of producing beans varies

comparatively little with yield secured. The expense of land interest or rental, plowing and fitting the land, seed, cultivating and harvesting are much the same for a large crop as for an average one, hence the profits from large yields per acre are much greater. The additional cost of producing high yields under proper methods are slight when compared with returns secured. The following suggestions are made of methods which give increased yields

Profit from Beans

CLEAN SEED WILL GROW CLEAN BEANS.

Plant clean, plump, viable, Michigan-grown seed.
Cull out discolored, diseased and immature seed.

PLOW BEAN LAND EARLY.

Give the seed-bed time to settle.
Prevent damage from bean maggot by early plowing.

FIT SEED BED THOROUGHLY.

Firm with roller to break the clods and fill the air spaces.
Follow roller with harrow to save moisture.

DISC AND HARROW AT WEEKLY INTERVALS.

Kill weeds as they germinate.
Lessen labor of later cultivation by thorough fitting.

FERTILIZER FOR BUMPER CROP.

Manure, applied early, and phosphates increase yields and hasten maturity.
Complete fertilizers also are effective.

CULTIVATE FREQUENTLY.

Shallow after thirty days to avoid root pruning.
Do not cultivate wet plants. Disease spores are easily spread.

of beans per acre without greatly increasing the cost of production:

Plant on Well Prepared Ground.

1. Plant beans on ground plowed in the fall or early spring which has been thoroughly fitted by use of disc and harrow. Harrowing and discing should begin early in the spring on bean ground. It is much cheaper to kill weeds by harrowing at frequent intervals before planting the crop than by cultivating after the crop is planted.

A good seed-bed for beans should be thoroughly settled in the lower part of the furrow slice with the surface worked into an excellent condition of tilth. It should be kept in mind that each bean seed planted is pushed out of the ground in the development of the plant, hence the seed-bed should be worked fine with the lower part of the furrow slice firmly compacted so as to bring moisture close to the surface and provide conditions for rapid and uniform germination of the seed. Late-plowed land should be firmly compacted with a roller or cultipacker and the surface worked fine with harrow.

Use Clean Seed of High-yielding Variety.

2. Clean seed of the highest yielding varieties gives the largest yields and less pick in the harvested crop. The Robust is the highest yielding variety in many tests in the hands of farmers throughout Michigan. It is a white pea bean but is somewhat larger than the common varieties. The Robust should be planted before June 15, since it may not mature thoroughly (Continued on page 281).

Reindeer Raising Proves Successful

Northern Michigan Conditions Ideal for Reindeer Development

By George F. Paul



Putting Halter on Bull Reindeer.

CAN reindeer thrive in Michigan? This has been made a live question in the Wolverine state by the action of the department of conservation in buying a herd of sixty reindeer for experimental purposes. These animals were imported direct from Norway, and have been placed on an immense tract of cut-over land near the city of Grayling, in Roscommon county, Michigan. The greatest care was taken to bring these animals safely to their new home. Each was crated separately for the long trip. As a result of this carefulness, they all fared well.

When the animals in this unique shipment were landed in New York, many wise ones shook their heads and declared gravely, "It can't be done. It's all nonsense to try to get these animals to live in this country—they simply won't do it."

What have been the results thus far? Instead of dying off at a remarkable rate, they have done just the op-

posite, and as a result there are eighty-one members of the reindeer herd at the present time. It would appear from this that Michigan is much to their liking.

Michigan has tens of thousands of acres of cut-over lands. This land is lying idle. In many cases settlers have tried to farm it and have failed. Many stockmen have attempted to raise sheep on these lands. The sheep would thrive all right, but the trouble came in tiding them over the long winter season. The feed bills grew so high that it was almost impossible to see the sheep for the feed bills.

Now the State Department of Conservation comes along and says, "Surely there must be some way to make these lands profitable throughout the whole year. There seems to be no good reason why the grasses and wild forage crops of our Northern Peninsula would not raise to healthy

maturity any game animal that can thrive on forage."

It was this belief that led the state to buy the herd of sixty reindeer from Norway at a price of \$125 each. Dr. Hafton Christiansen explained that the native Laplander has no superior as a reindeer herder and breeder.

"The reindeer is food, clothing and life itself to these people," he declared. "When a Lap has a herd of 200 to 600 reindeer, he is not considered a rich Lap, because a herd of that size will little more than take care of his own immediate needs and those of his family. However, when his herd reaches one thousand in number, then he is considered as being in the reindeer industry."

Both the male and the female have antlers. These they shed every year in the months of March and April. It often happens that the horns of the male reindeer have a spread of five

feet. The reindeer have an average weight of 250 pounds. This means that about 185 pounds represents the weight of the dressed animal. In Norway, fresh reindeer meat sells for about thirty cents a pound.

Dr. Christiansen declares that the wolves are the greatest enemies the reindeer have in Norway, and feels that the same thing may prove true in Michigan. When the Laps are tending their herds in the mountains, they set up their tents near by and build a big fire. If the reindeer are disturbed by wolves at night while feeding or resting, or if they smell a wolf at a distance, they at once form a big circle around the fire and keep going round and round until the wolves are either driven away or killed. At such times the Laplanders or their shepherd boys do not penetrate outside of the swiftly moving circle, for if they attempted to do so they would probably be killed by the hundreds of excited reindeer. Instead, they build platforms at the top of their tents, and from these they shoot down upon the marauding wolves.

The reindeer are to be placed permanently on a 62,000-acre tract of cut-over land bordering the south shore of Lake Superior. Here they will have the coolest weather that the state of Michigan affords. Here they ought to thrive if it is possible for them to thrive anywhere in the United States. Game officials of other states along the Canadian border are watching with intense interest the outcome of the Michigan experiment to add reindeer meat to the list of national food products.



Cut-over Lands Ideal Browsing Places for Reindeer.

Senator Capper's Washington Letter

CONGRESS, after a hectic three months, is about to adjourn. In the hurry to wind up as much legislation as can be gotten out of the way the usual last minute jam is occurring. In their efforts to prevent further jams, leaders in the house and senate are pigeon-holing much important and far-reaching beneficial legislation.

What is occurring in Washington now occurs every two years during the short session of congress. The appropriation bills, of course, must be passed first.

They are, to the exclusion of almost everything else.

As usual, farmer legislation is disregarded.

The Capper rural credits bill and the Lenroot-Anderson rural credits bill are being caught in the jam. They may get a right-of-way before March 4 and they may not.

There is Henry Ford's offer, too, to buy the gigantic nitrate plants at Muscle Shoals for conversion into fertilizer factories. Twenty months ago Ford made his offer. Farmers the

country over hailed it as practical relief from the high cost of fertilizer.

Finally, six months ago, the Ford proposal, although somewhat modified, was favorably reported to the house. Nothing resulted.

Now, when congress is about to adjourn, sentiment in the house is crystallizing so rapidly that it is authoritatively predicted the offer will be accepted by a large majority if brought to a vote.

But it will do no good. It comes too late for approval by a senate spending its time talking about ship subsidy, politics and other things which bring no direct benefit to the farmer.

The rural credits bill, the Ford lease of Muscle Shoals and other essential legislation, including revision of the railroad laws, could be gotten through if the congress did not automatically terminate on March 4.

When congress returns next December the presidential campaigns will be getting under way. Politics will be the chief consideration. All prospective legislation, therefore, will be judged by its possible political effects.

Again the farmer will be bunked.

Farmers Lose \$8,500,000,000.

Pleading for American helpfulness in European affairs, Senator Borah reminded the senate recently that what concerns Europe also concerns the United States.

Because Europe no longer can buy American products in accustomed quantities the American farmer alone, he estimated, has lost \$8,500,000,000 in the last three years because of the drop in prices due to the loss of a market.

This is \$77.27 for every man, woman and child in the country.

It is a great deal more for the individual farmer whose prosperity depends upon the ability of the world to buy his goods.

It is inevitable that the United States must lend some sort of a helping hand to Europe.

If conditions continue the \$8,500,000,000 loss will swell to even larger totals.

Aside from the humanity call, American dollars and cents are calling for relief.

Some day officials may conclude that the wiping out of this \$8,500,000,000 loss to farmers justly constitute a foreign policy of "attending strictly to our own business."

Forestry Policy Looms Near.

President Harding is cordially supporting a bill which has just been drafted by the house agricultural committee to insure a sound forestry policy so that future generations in America will not be dependent upon foreign lands for timber supplies.

Colonel W. B. Greeley, chief of the forestry service, has accomplished much with limited facilities, but the time approaches when federal and state governments must cooperate in a national policy covering the growth, protection, conservation and use of timber.

This is constructive work of the utmost magnitude. Its great importance will be realized by our children and our grandchildren.

Arthur Capper.

WASHINGTON, D. C.



Comments from the State Capital

CONSIDERATION of agricultural measures comprised the outstanding constructive accomplishment of the legislature during the past week.

Capital punishment bills were pending in both branches, but did not come up for final vote. Their discussion and parliamentary manipulation provided much material for big-type headlines, but neither house has as yet finally disposed of its death penalty measure.

Electricity for Farms Considered.

Agitation for an adequate law providing for public development of electrical energy in rural communities culminated in the introduction of a bill by Representative E. O. Ladd, of Grand Traverse county, to allow township officers to develop and distribute electricity if the proposal is approved by a two-thirds vote of those voting on the question.

The "Filled Milk" bill has been advanced to third reading in the house.

Cheese Standards Approved.

No opposition was experienced, however, by Senator Horton's bill to establish moisture and butter-fat standards for Michigan cheese and regulate the labeling thereof.

The Horton cheese bill passed the senate unanimously and has been reported favorably by the committee on agriculture in the house. If this measure is passed, it will tend to improve and standardize the quality of Michigan cheese and render it popular on the market.

Debate Caused by TB. Bill.

The proposal to lower the maximum state awards on condemned tubercular cattle and to allow for county cooperation in tuberculosis eradication campaigns caused considerable debate when it came up for final passage in the house.

Some who opposed the bill did so because they thought that the propos-

ed award to the farmer was not enough, while other members felt that the state should not pay anything to owners of condemned cattle.

The bill finally passed with but two votes to spare after it had successfully weathered a severe barrage of amendments, seven of which were offered by Representative John Holland, of Gogebic.

None of the Holland amendments were adopted.

Covert Act May Be Repealed.

The long-expected fight to repeal the Covert Highway Law has been launched, Representative Peter Lennon, of Genesee, having introduced such a repeal proposal. In this action he has the backing of the State Farm Bureau

who went on record at their recent annual meeting as favoring such action.

SEVENTEENTH ANNUAL RURAL LIFE CONFERENCE.

THE forenoon session of the conference will begin at 10:00 o'clock, on March 9, with several selections by the Normal School Band, after which Hon. A. B. Cook, of Owosso, State Master of the Grange, will preside over a program of talks and addresses. Many of the interests of the rural life will be considered informally. Before noon Dr. John H. Sundwall, of the State University, will speak on "The Healthy Mind," and Prof. Mabel Carney, of Columbia University, New York City, will discuss "Best Present Activities in Rural Education."

The afternoon session will follow the 12:30 basket luncheon, at about 2:00 o'clock. There will be special music and the first address will be by Dr. John H. Kolb, of Wisconsin University, on "What is a Rural Community?" Professor Carney will describe "A Rural Experimental School," and President David Friday, of the State Agricultural College, will give the seventeenth annual rural progress lecture on "Economics in Rural Progress." Congressman J. C. Ketcham will preside.

At 5:30 p. m. the rural education seminar will receive informally former students and graduates of the Department of Rural Education, guests from county normal schools, county commissioners of schools, and other invited guests, in the rotunda of the training school. At 6:00 p. m. the annual reunion supper will be served and a program of toasts will follow. Professor Mabel Carney, of Teachers' College, Columbia University, New York City, a leader in rural education in America, will be the guest of honor and will speak.

News of the Week

Wednesday, February 14.

THE allies have given a warning to quit Smyrna in three days.—Carveth Wells, just returned from the Malay Peninsula, claims to have found a snake-eating dwarf race.—Col. S. Y. Seyburn, an Indian fighter under General Miles, Custer and Crook, died at his residence in Detroit on Monday.

Thursday, February 15.

THE French and Belgians stop all exports of manufactured products from the Ruhr district.—William Conrad Roentgen, the discoverer of the X-Ray, died Saturday in Munich, Germany.—The majority party in Japan, of Buddhist belief, bar plan to send a mission to the vatican at Rome.

Friday, February 16.

AN Ann Arbor pastor said that Lincoln would not have attended the "J" Hop at the university had he been alive at this time.—Sixty-five bodies have been taken from the debris resulting from the mine explosion at Dawson, New Mexico.—It is estimated that the total cost of running the United States government is about \$8,000,000,000, or approximately \$220 for each citizen.

Saturday, February 17.

IT is reported that the Chinese government is nearly bankrupt, and will endeavor to float a loan of \$12,000,000.—Prime Minister Bonar Law said that Franco-Britain was imperiled

because of the French occupation of the Ruhr.—Mayo Cleveland, an eight-year-old boy of Greenville, Texas, has been licensed to preach.

Sunday, February 18.

HUNDREDS of industrial concerns say that there will be a labor famine in this country, unless the immigration restrictions are changed.—Dr. A. R. Hill, in charge of foreign work of the American Red Cross, says that the stories of Turkish depredations in Smyrna are untrue.

Monday, February 19.

THE senate adopts the British debt-funding plan which provides for the payment of the British debt to this country, of \$4,000,600,000, over a period of sixty-two years.—Henry M. Leland, former president of the Lincoln Motor Company, climbs up twenty-two stories in one of Detroit's large office buildings on his eightieth birthday.—Bombs wreck several state buildings in Dublin, Ireland.

Tuesday, February 20.

THE mummy of King Tutankhamen, Egyptian ruler, was uncovered after being buried for 3,500 years.—One of France's national problems is that she has so much wine and alcohol she does not know what to do with it.—Henry Ford has bought the Alleghany Plate Glass Company, of Glassmere, Pennsylvania, and raised the wages there eighty per cent.

Neighbors Competitors?

By D. L. Hagerman

MICHIGAN'S poorly worked and abandoned farms are continual subjects of comment. Our idle and non-productive acres are continually on the increase and yet the expression, "We don't want any more settlers," is proclaimed emphatically and with regularity. Sentiments indicating a lack of sympathy for any type of land settlement are expressed alike by the perennial calamity howler and those occupying high places in the agricultural arena. Whether their attitude is poisoned by an ambition for personal advancement through pouring oiled words into sympathetic ears or because of a lack of study of the economic factors relating to such work is a mystery.

The facts are, some of Michigan's finest minds steadfastly hold that a State Development Bureau or Chamber of Commerce, or any other organization making an effort to attract land buyers and settlers is working to the direct detriment of those good farmers now on the land. "Competition is bad enough as it is, why make it worse?" or "We are now producing more than we can sell," etc. This competitive attitude among farmers toward new purchasers who come into a neighborhood is the outcome of the same attitude among merchants toward each other in villages where the community's purchasing power is very nearly fixed. A new grocer in a town is a real competitor for what business he gets he takes away from those already there. This rule is false when applied to farming and probably furnishes the stumbling block over which so many fall. Where the merchant sells only to the community the farmer sells to the world and the prices on the products of his farm are fixed in the terminal markets where the same commodities from various states or countries are concentrated.

In this session of the legislature our policy as a state toward land settlement will have to be established. This is one of the important phases of the State Department of Agriculture's work and whether it is to be curtailed or encouraged is a matter which public sympathy or public opinion will settle. The issue is broad and demands careful study.

Land-hungry People Always With Us.

To gain an accurate impression of things we must first realize that the land settler, like the poor and needy, will always be with us. There is a crop every year. The corn belt of Illinois, Indiana and Ohio, and the territory adjoining is a great multiplying ground for farmers. Large families are raised on land that is high-priced. The sympathies and training of these boys and girls are agricultural. They have some money and a determination to farm. Some for a while will rent, but in time many are leaving the area in search of cheaper lands with attractive opportunities. Hundreds of families go annually.

Another group of land-hungry individuals comes from our cities and towns. They have found that the lure of the city to them is a snare and a delusion and want to get back to God's open country where they feel that farming will emancipate them from future horrors of time clocks and congestion. Some are real farmers and will succeed, others will be failures and misfits wherever they go, but they have all decided to try farming and the less they know the more gullible they are and more certain to be caught up by unscrupulous real estate agents selling cheap, worthless land. These fellows always prosper in states where colonization and land settlement questions are ignored.

Now, ridding our minds of prejudice we must recognize this fact: that there is annually a great crop of men and women who are going to go somewhere and buy a farm. Theirs is a sincere land hunger and with their families and savings they are in search of a farm which, to them, will be an Arcadia of contentment far from high rents and high standards of living. Any one of these thousands of families may be chosen to represent the entire number. This family may go north, south, east or west of the corn belt and find anxious organizations waiting to show them around hoping, if possible, to interest them in their community and in one of their farms.

Wisconsin Encourages Settlers.

In the light of present conditions this family, if it is a good family, will locate in Wisconsin. Wisconsin wants farmers and is neither afraid of their competition nor their demoralizing effects upon their markets. Wisconsin also knows how to attract and hand-pick settlers and through her state department located nearly 1,500 families there last year. If this family buys a farm in Wisconsin they probably will settle down to the production of grain, dairy products and potatoes as the principal source of income. Their surplus of these products will be sold in world markets in competition with the farmers' products from Michigan and any other states where grains, dairy products or potatoes are raised.

The question, as it stands, then, is, "did the farmers of Michigan lose a competitor by shutting the doors of their state to this man and his family? Did they accomplish anything in the way of reducing production? Are they better or worse off for his being in Wisconsin instead of Michigan?"

The real meat of the nut is here: This farmer, by settling in a community in Wisconsin develops a farm home there. He pays taxes, his children go to school there. He and the family join the church there. He buys his clothing, his groceries, and his hardware there. He banks there and he ships from there. We know that the profits to that community derived from the business which he does there is equal to the income from an investment of at least \$2,000. So he and his family represent an asset in that community with an earning power of \$2,000. Suppose Wisconsin State Colonization Bureau attracts only 1,000 farmers annually, that is \$2,000,000 more earning power in the state. In ten years it is \$20,000,000 plus the interest.

The volume of his business swells the total volume of business done through the Cooperative Shipping Association. He is a customer for pure-bred stock, for tools and machinery, his patronage reflects an element of prosperity to the whole area. As a competitor of the Michigan farmer he has multiplied his iniquities tenfold by locating in Wisconsin instead of among us. Here he could help build our churches, our schools, roads and markets and ship to the same terminal markets through our own marketing organizations. In Wisconsin he is our competitor in the keenest sense of the word.

Michigan's Policy.

Michigan cannot adopt a half-hearted policy toward land settlement. We have cheap lands capable of sustaining contented and prosperous farmers. We can duplicate all the advantages offered by any other state and have buyers here or drive them away? We can ignore the issue completely or face it squarely. We have ignored it

(Continued on page 258).

Soon

Ready to Ship



-the NEW and EVEN BETTER GILT EDGE Furnace

Leadership in Product and in Service

Many New Features

The New Gilt Edge Furnace has been perfected and completed, and Gilt Edge factories are going ahead with production as rapidly as possible. Soon you will be able to inspect this wonderful new furnace at your Gilt Edge dealer's.

This new and even better Gilt Edge is the product of 47 years of progressive work in building heating plants of all kinds. It was developed through Gilt Edge Service which has brought Gilt Edge dealers and Gilt Edge manufacturers into close contact with home owners' heating problems. These individual and varied problems have been studied from every angle resulting in remarkable improvements in furnace construction. The improvements in the New Gilt Edge give it greatly increased prime heating surface. Greater heating capacity, less fuel, longer life.

The New Gilt Edge Furnace and Gilt Edge Service form a combination which will give you complete satisfaction with your heating system. Gilt Edge leads in product and in service. Ask your Gilt Edge dealer about both. Remember, you can soon see the new Gilt Edge Furnace—and it offers many big surprises. Write for descriptive folder and the name of the nearest Gilt Edge dealer.

R. J. Schwab & Sons Co.

Milwaukee, Wis.

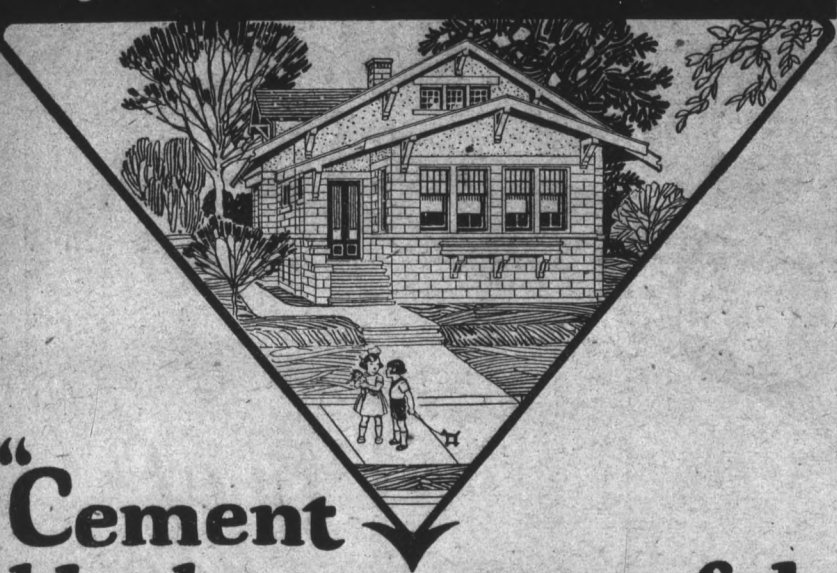
The New Radiator
Radiator has larger diameter and larger cross section—greatly increased radiating surface. Bigger outlet is provided for smoke and gases which completely fill both sides of radiator, increasing heating efficiency. The dome head and the outer part of the radiator are joined by perpendicular walls which form flues, facilitate air travel and add to the strength of the radiator.

The New Fire Pot
It is heavily ribbed—prime heating surface is increased approximately 60%. Stronger and will last many more years. Large radiating surface eliminates danger of burning out or melting. Maximum heating ability for size of fire pot. Sectional fire pot has vertical sides, assuring a clean and even burning fire.

The New Combustion Chamber
Ribbed for greater strength—carries weight of radiator without strain on body casting. Deeper construction—more perfect combustion of fuel and gases. Greater economy. Large double feed door is provided. Lower section is ample for ordinary firing. With upper section, it accommodates largest blocks of coal or wood.

THE NEW AND EVEN BETTER
GILTEDGE
FURNACE

Says the local ALPHA Dealer.



"Cement blocks are so useful

for walls, foundations, partitions, houses and small buildings generally that I wonder more people don't use them.

"The cement block is just one of a score of useful cement products described in 'ALPHA CEMENT—How to Use It,' a 104-page handbook on permanent improvements that I'll gladly give you."

Alpha Portland Cement Co.
140 South Dearborn St., CHICAGO
EASTON, PA.

Battle Creek, Mich. Ironton, Ohio St. Louis,
New York Boston Philadelphia
Pittsburgh Baltimore

Plants at: Bellevue, Mich. La Salle, Ill.
Ironton, Ohio St. Louis, Mo. Alpha, N. J.
Martins Creek, Pa. Cementon, N. Y.
Jamesville, N. Y. Mannheim, W. Va.



use Alpha Cement

This Wonderful High
Quality Range
Yours
for —

Only \$1.50 per week

The Most
Astonishing
Range VALUE—

Direct to You from Manufacturers

Think of it! Think of replacing your old range with the most beautiful and dependable porcelain enamel range in America! Think of the savings of time and fuel—the convenience! And now you can do it—at a cost you'll never feel. A little down—a quick delivery—the balance in trifling monthly payments. Mere pin money!

Best Range Built—Bought at Wholesale Price

Besides buying on easiest-heard-of-terms, you get an unbeatable bargain. You save tremendously. Because you buy direct from factory. All you pay is the low wholesale price. **30 Days Free Trial.** A marvelous cooker and baker. Oven heats quickly—browns perfectly—is under absolute control. Fuel saving. Most practical gas and coal range made. But don't take our word—nor that of our thousands of pleased users! See for yourself. Try the range in your home for 30 days. Return the range if not satisfied.

Write for Free Catalog. Describes Kalamazoo line of Ranges—over 200 attractive styles and sizes including above, from which to select—and other home-need bargains. Also get prices on Kalamazoo Ranges. When you can buy at wholesale, why pay retail. Send for catalog now.

KALAMAZOO STOVE COMPANY, Mfgs.
121 Rochester Street Kalamazoo, Mich.

"A Kalamazoo Direct to You"
Trade Mark Registered



Free

This Great Book containing hundreds of BARGAINS

in
STOVES, RANGES
and FURNACES
Send For It.

WOLVERINE OATS Michigan leading variety. At Association prices. O. D. FINKBEINER, Clinton, Mich.

VIRGINIA ENSILAGE SEED CORN for sale. Grows in the mountains of Virginia. Naturally cured. High germination. John M. Higgins, Red Hill, Va.

FARMERS: Increase your yield and quality by planting my Golden Yellow Dent, pure bred seed corn, 21 years of breeding and field selection are back of my strain of Yellow Dent. Michigan's foremost variety, bar none International and M. A. C. sweepstakes winner. \$4.50 bu. shelled and graded or \$6.00 packed in ear F.O.B. Mason, limited amount, high germination, guaranteed. Chas. Laughlin, Dansville, Mich.

When You Write to Advertisers Please Say "I Saw Your Ad. in The Michigan Farmer."

OUR SERVICE DEPARTMENT

Always Give Name and Address When Sending Inquiries as Satisfactory Service Cannot be Given to Unsigned Letters

FIRE DAMAGE.

A railroad engine caused a fire which burned twenty acres of muck land on our farm. No muck is left to speak of. The fire destroyed our pasture, making it necessary to turn the stock in clover. The fence was laid flat on the ground and about a half dozen trees were destroyed. What is the extent of damages which I should receive?—R. B.

If the fires can be proved to be due to the negligence of the employees of the railroad company, the party suffering is entitled to compensation for the actual damage. That is a question of fact.—Rood.

SOWING VETCH.

I have a piece of ground in which I intended to sow vetch for a cover crop last fall, but the dryness prevented. Can I sow it in the spring, and get enough growth by May or June to make it worth while? Can you give me a simple rule for finding the cubic contents of a round or cylindrical cistern fourteen feet deep, and fourteen feet in diameter?—C. H. T.

Vetch sown in the spring, or in fact any other crop, would hardly give you growth enough to pay. Canada field peas would probably come the closest but it is doubtful if they would get a sufficient growth to pay before the middle or last of June, which is pretty late.

If it is an orchard or flora culture, of course you do not need a cover crop at this time of year. It would probably do more harm than good. It would take the moisture needed for the crop of fruit or flowers. Better give cultivation and if you need plant food use commercial fertilizer.

It is sufficiently accurate in estimating the capacity of cisterns, etc., to multiply the cubical contents in feet by seven and one-half to get the capacity in gallons.

To ascertain the cubical contents, multiply diameter by 3.1416; for the circumference, multiply one-half the circumference by one-half diameter; for area, multiply area by depth (cubical contents).

LINE FENCES.

I bought land with 160 rods of fence. I kept up west end. Last year I pastured my cattle on the east end and they stayed until pasture got scarce and broke out. Neighbor said he would fix the fence. He didn't, so I fixed up forty rods. He has moved and a man is working his place. Can I force him to build the fence? Whom should I go to in order to force him?—A. W.

If there has been a regular division of the fence, and it is maintained by one party and not by the other, the party not in default has two remedies. He may ignore the lack of repair, turn his stock against the deficient fence, and not be liable for any damage the animals do to the neighbor, or he may apply to the fence-viewers for an order to repair, and that granted, if the delinquent party does not make the repairs the other may do so, and have the cost levied and collected as a tax on the neighbor's land. The tenant of the other land holds subject to the burdens of his lessor, and need not be recognized by the other party.—Rood.

WASTE ENGINE OIL FOR MACHINERY.

Is cylinder oil, that comes from an automobile, as good as machine oil for machinery?—H. D.

The oil that comes from the base of your auto when you draw off the oil and put in new oil, is not as good as new oil. This is oil that is worn and has been thinned by gasoline leakage

from the cylinders. You drain it off and put in new because it will no longer lubricate your engine properly.

This oil can be used for machinery by using plenty of it. But it is not as good as new oil.

On large bearings on machinery where there are large oil cups with plenty of waste to be saturated to hold the oil, this waste oil can be used if you take pains to apply it often and freely.

SWEET CLOVER FOR PIG PASTURE.

I am planning on raising some pigs. Please tell me if sweet clover will make a good permanent pasture for pigs.—O. B. W.

You should find sweet clover very satisfactory for pig pasture. Of course, the leafy portions are the valuable part, and the only part the pigs will eat. Consequently it should be pastured while comparatively young.

If your land will grow sweet clover satisfactorily, it should also grow alfalfa, and we are of the opinion that you would get more satisfactory results from the latter.

I have personally pastured alfalfa with hogs that had a slight mixture of sweet clover in the seed, thus resulting in an occasional sweet clover plant growing among the alfalfa. The result was that while the alfalfa was pastured very close to the ground, the sweet clover plants stood practically untouched.—Pope.

FORECLOSURE OF LAND CONTRACT.

When payment on land contract is past due, should one foreclose the same as on a mortgage? Twenty per cent of the purchase price has been paid. The contract has not been put on record. Does that make any difference?—L. L.

The statutes provide no method of foreclosure of land contracts by advertisement. The summary proceedings provided for in case of forfeiture of land contracts merely restores the possession. The only sure method of foreclosure is by bill in chancery. But if the one whose contract has been declared forfeited does not move promptly or show some other reason especially appealing to the conscience of the court, a bill filed for permission to redeem, the only remaining remedy of the vendee, would not be sustained.—Rood.

CANADIAN RUTABAGAS.

What is the true name for the so-called Canada rutabagas, how to raise them, what fertilizer, and what kind of soil they do best on?—C. N.

The scientific name of this root plant is Brassica Campestis. The common name is rutabaga. It is really a Swedish turnip. All plants of this nature are turnips. Botanically they belong to the cabbage family.

The only reason they are called Canadian Rutabagas is because they are quite extensively grown in some sections of that country as stock food.

Rutabagas require a rich loamy soil for best results. Heavy clay is not good. A light loam will do if it is well manured. Plenty of stable manure and acid phosphate are the best fertilizers for this plant.

They should be planted about the same time as corn. May planting has given bigger yields than June planting.

There is no well established market for them, being mostly grown for stock food. There is a limited market for them as human food.

MAKING COOPERATIVE MARKET A SUCCESS.

THAT cooperative marketing can be done successfully has been proved by the experience of the St. Louis Cooperative Creamery Association, which is the only cooperative creamery north and east of Lansing, and the only one in the state that handles eggs and poultry.

Although the company was organized in May, 1915, with a capitalization of \$10,000, the records date back to 1916 only, because of a fire during the first year. From the profits of 1916 a dividend of nearly \$1,000, or about ten per cent, was paid to the producing stockholders.

Profits increased each year and in 1920 the company was recapitalized for \$30,000, and the stockholders increased from 225 to 598. In 1922 over 1,300,000 pounds of cream was received, and over 500,000 pounds of butter churned.

Declare Forty Per Cent Dividend.

About \$12,000, or forty per cent of its present capitalization, has been set aside from the profits of 1922, to be divided among the stockholders this year.

In accordance with the state law six per cent of this is paid on capital stock; the remainder, or thirty-two per cent, will be awarded as a patronage dividend to each stockholder in proportion to the amount of cream, eggs and poultry he has sold to the company during the year. Thus the producing stockholders are benefited by the association receiving the patronage dividend in addition to the regular market price which is based on daily quotations from Chicago and prices paid by other local buyers.

The factor most responsible for the unusual success of the association has been the elimination of commission houses in marketing. The association was one of the first known to use the post office as a medium of distribution, selling direct to retailers and consumers, not only throughout Michigan but in bordering states. More than \$4,000 was paid by the company in 1922 for postage on parcel post shipments of butter and eggs.

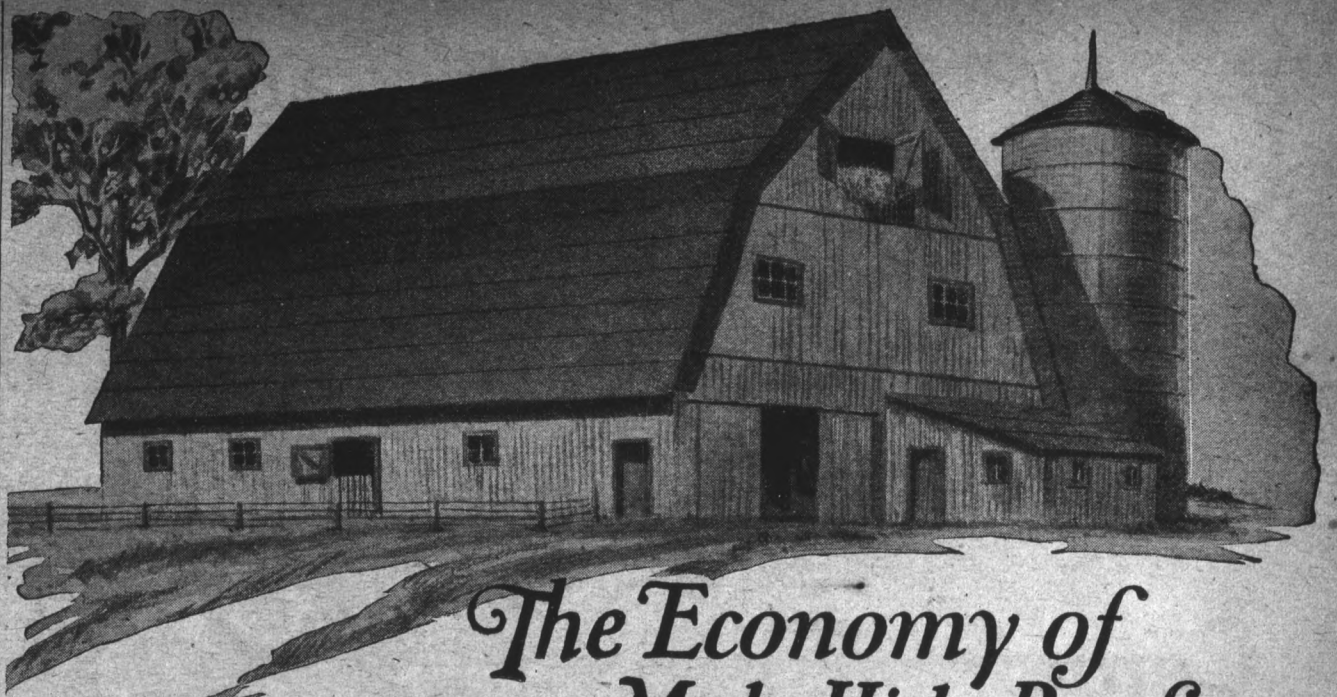
Still Great Possibilities.

Although a radius of about 115 miles in each direction is covered daily by trucks and wagons on the company's routes, there are still almost unlimited possibilities for the growth of the company's patronage. The creamery is but one of the many branches of agriculture that will eventually be operated successfully under the cooperative movement, for cooperative marketing is not being promoted for the purpose of increasing the prices of farm products to the consumer; but to make it possible for the present prices to be paid direct to the farmer instead of being diminished below the cost of production by the jobbers and commission men.—Mills.

FEEDING SILAGE AFTER MILKING AVOIDS ODORS.

SILAGE odors are absorbed largely through the body of the cow rather than from the air, according to tests made by the government department of agriculture, but these odors may be practically or entirely removed by the aeration of the milk while it is still warm.

Rather heavy feeds of silage may be made after milking without any undesirable flavors or odors passing into the milk. When green alfalfa was fed in relatively large quantities one hour before milking, marked flavors and odors were noticed in the milk, but when as much as thirty pounds per cow was fed after milking, there was no effect on the milk from the next milking.—Mills.



The Economy of Mule-Hide Roofing

First cost?

Or cost per year?

If it's a matter of first cost, some roofings will lead Mule-Hide.

We admit that frankly.

But, if you seek the lowest cost per year—well, the large sale of Mule-Hide in the farm field answers that.

Mule-Hide Roofing and Shingles are supreme in almost every farming community, because the farmer knows the difference between cheapness and economy.

Mule-Hide is not cheap—

Mule-Hide is economical.



Cross Section of MULE-HIDE Slate Kote Roll Roofing

(See description below)

1. Finely crushed non-fading slate, firmly imbedded in asphalt.
2. Heavy layer of genuine Mexican asphalt.
3. Asphalt-saturated, all rag, long fibered felt.
4. Under-coating of genuine Mexican asphalt.

In manufacturing MULE-HIDE Slate Kote Roll Roofing all rag felt base very slowly passes through and is saturated with a dense, high-grade, refined Mexican asphalt. The top surface is covered with an extra thickness of the same high-grade asphalt in which a protecting coat of richly colored slate (red, green or blue-black) is deeply and firmly imbedded. This makes a solid unit built for endurance and lasting beauty.

The LEHON COMPANY
Manufacturers of
Mule-Hide Roofing and Shingles
CHICAGO



"Not A Kick In A Million Feet"

Record Garden Yields

Plant Northern Seeds
Thus assure yourself of the biggest yields—the best your garden can grow. Use the Isbell Catalog as your guide. It shows varieties almost unlimited of the finest vegetables, many prize winners of international reputation—all produced from MICHIGAN GROWN

Isbell's Seeds
As They Grow Their Fame Grows

Plant only the best, hardest, earliest maturing seeds. 44 years growing seeds in Michigan—ceaseless experimenting, careful selection, and perfect cleaning have made more than 200,000 satisfied Isbell customers. You buy direct from the grower and save money. Satisfaction guaranteed.

Write Today!
Get the 1923 Isbell Seed Book. It's a valuable guide for growing great crops. Gives complete cultural directions. Post card brings it, free.
S. M. Isbell & Company
718 Mechanic St., Jackson, Mich.
(44)

Plant **ISBELL'S** Quality Seeds for Record Yields in Your Garden

CHOICE STRAWBERRY PLANTS \$3.75 per 1000 varieties at \$3.75. Guaranteed first class or money refunded. Cat'g. Mrs. Filena Woolf. Allegan, Mich.

STRAWBERRY PLANTS

\$3.50 Per Thousand, and up. Our strong, tremendous bearing plants guarantee big crops of luscious berries. Best varieties for all kinds of soils. Many new varieties such as Eaton, Bun Special, Premier, Marvel, and Cooper. The world's greatest new Everbearing Strawberry CHAMPION. Full line of Raspberries, Blackberries and Asparagus. Greatly Reduced Prices. Our customers are making up to \$1200.00 per acre from small fruits. Large stock of good Grape Plants at \$35.00 per thousand. Beautiful new color catalog free. **Write Today**
BRIDGMAN NURSERY CO., Box 25, Bridgman, Michigan

For BIG CROPS
Grow **Watson's Prolific Everbearing** of luscious Strawberries, also standard varieties. 100 each Prolific and Gibson, \$2 cash postpaid. 1 Spirea or 2 Concord Grapevines with every order of \$5 or more. We also save you money on thirty Fruit Trees, Shrubs and Ornamentals. Write for prices. Watson's Strawberry Acres, R. 5, Box 54, Grand Rapids, Mich.

STRAWBERRY PLANTS \$3.50 & Up

Hardy, Northern grown, best stock. Also fine line Raspberry, Blackberry, Dewberry Plants. Largest stock Grape Vines and Fruit trees. At lowest prices. Plants are large, heavily rooted and thrive readily. Produce big yield of choicest fruit. You can make up to \$1000 an acre from these plants. Write for free catalog and prices. Don't delay; write today.
DASS NURSERY CO., RR. 3, Bridgman, Michigan

Strawberries Plants
Prices as low as \$2.75 a thousand. Raspberries, Blackberries, Currant, Asparagus, Grape Plants, etc. For sale by the 100 or more. Sawyer Nurseries, Sawyer, Mich. Box 108.

STRAWBERRY and Raspberry Plants 17 Years' experience. Prices Reasonable. Catalog Free. **J. E. HAMPTON & SON R. 3 BANGOR, MICH**

STRAWBERRY PLANTS

The new **Cooper Strawberry**, largest, sweetest and most productive berry known. One berry makes a big mouthful, 9 berries make a layer in a quart box, 400 crates per acre. Sells for a third more than other varieties. A full assortment of other kinds of small fruit plants. Prices greatly reduced. Wholesale prices on large amounts. Our free catalog shows the Cooper and ten other kinds in their natural colors. Write for it today.
A. R. WESTON & CO., R. D. No. 6, Bridgman, Mich.

Victory Plants

Trees, Vines, Shrubs, Evergreens, Flowers, Michigan Plants for Michigan People
100 everbearing and 100 Gibson strawberry plants, post paid for \$2.00. 1 Spirea or 2 Concord grape vines free with every order for \$4.00 or more. 25 choice mixed gladiolus bulbs for \$1.00. 1000 choice strawberry plants, our selection, for \$3.50. 1000 fine Concord grape vines for \$40.00. Bargains in peach and cherry trees. Live and let live prices on everything to plant. Free catalogue, worth seeing, too. Order now—
The Allegan Nursery, Allegan, Mich

STRAWBERRY PLANTS

Priced as low as \$3.00 a thousand. Raspberries, Grapes, Currants, etc. 30 years' experience. A complete line. All plants inspected, guaranteed. Write today for free illustrated catalog.
J. N. ROKELY & SON, Rt. 6, BRIDGMAN, MICH.

STRAWBERRY PLANTS \$3 per 1000, history and valuable illustrated book free. You will learn.
Address MAYERS PLANT NURSERY, Merrill, Mich

Please Mention The Michigan Farmer When Writing to Advertisers



Rush, Rush, Rush—but how?

RIGHT in the peak of rush work—right at the time when horse power is at a premium—an enemy stalks onto your farm. "Sore shoulders" is this enemy—tugging like a giant against the wheels of production. Galls, boils, scalds and sweeney are his weapons.

Why not rid your farm of this power and profit-robbing? You, like thousands of others, can do it by fitting your horses with the

FITZALL ADJUSTABLE HORSE COLLAR

There are four perfect-fitting sizes to every FITZALL. As the horse loses flesh just shorten the collar! Change sizes by simply moving pegs on cap from one set of holes to another. Easier to adjust than a belly band. Never needs sweat pads. No more shoulder troubles. Full power from horses the year 'round.

30 DAYS' TRIAL—Your dealer is authorized to refund your money if not satisfied after 30 days' trial. Insist on the Fitzall. There are no substitutes as the Fitzall is fully patented. If your dealer cannot supply you, write us.

NICHOLS-BIEHL CO., Milwaukee, Wis.

Address 309 4th St.

Also Manufacturers of
"Master-Brand" Harness—America's Best

Instantly Adjustable to 4 Perfect Fitting Sizes



Get this Valuable Horse Book FREE! Contains information that will make many dollars for you. Describes complete FITZALL line. Write for it—today!



Opinions & Comments

From Michigan Farmer Readers

OFFERS A SUGGESTION.

MANY of us hesitate to put our name down when doing this, says we will sell our crops, or hold out for a certain price, or condition, because we do not wish to go up against some unseen foe, or impossible situation. We should, of course, know pretty well what we can do before writing on the dotted line. But, when considering these matters, we should make certain that our action will bring about an improvement in service. Being convinced of this we should then keep in mind the service to be rendered and not the danger that might be lurking. In other words, we should apply Dr. Coue's principle to the situation.—R. S. Betts.

UNCONSCIOUS DEMONSTRATION.

WE write announcements, tack up posters, and even advertise coming demonstrations in order to "get out the folks." There is no kick on this and I believe we should do more of it. There is, however, a type of demonstration being carried on, about which we think little, yet, through which much substantial advance is made. I speak of the unconscious demonstration.

For instance, a farmer builds a dairy barn. He puts in good sane equipment. If he is known as a man of sense, then his neighbors are soon around getting practical ideas. When they build, many of these ideas will be used in their dairy barns. And thus it goes. By closely studying our problems and acting on what we learn, we unconsciously become community assets.—A. Bolivar.

DOES FARMING PAY?

WELL, yes and no. Some make it pay and some do not. It is just according to circumstances and individual perseverance and intelligence. But everyone who is farming does not make it pay. Perhaps, however, they do as well farming as they would at anything else. I take it for granted when a farmer does his work intelligently on any of the common crops that are produced on the farm, he will, on an average, not only get good wages but he will also get a profit. So far, then, he is making the farm pay. But the raising of a successful crop at a good round profit even, is often attended with loss to the farmer ere the year is ended.

It is not merely the raising of good crops that makes farming a success or failure, but it is the intelligent disposition of the crops after they are produced. The produce of the farm should be to the farmer what raw material is to the mechanic or the manufacturer. He should enhance its value as much as possible before leaving the farm.

There is but little grain fed on the farm but what gives greater returns than it would if sold as raw material, besides the farm is made more productive, and, if intelligently fed, will give as great a profit as that of production. And the second profit is gained with greater ease than the first and with less capital. This is also done at a time of the year when labor is not so valuable as it is in the busy season, and you will increase your business capacity as well as capital. You can go through the country among the farmers and whenever you come to a man that is termed a feeder, you will find a man that is making the farm pay, wide awake and full of business, well posted in the business transac-

tions of the farm, both theoretically and practically, and you will find him well provided with reading material, both agricultural and political. He keeps himself well posted in the market reports, knows how to sell and how to buy and how to feed and how to care for that which is being fed.

There is no position in life where strict attention to business pays better returns than that of agriculture. Of course, there is no great splurge in the way of making money, but it is honorable and not attended with the great risk of the merchants and speculators, who are rich today and poor tomorrow, but each year adds to his income and each year adds to his experience, and his past experience will be his stock in trade for future use. As the years roll by he will look back to his early experience and laugh over the many mistakes he used to make and how hard he used to work in order to meet the many demands that accumulate in the transaction of business. But a home for old age should be the beacon star for future exertions so that when the frosts of old age and the frosts of winter combine we can sit at our own fireside and enjoy the comforts earned by hard honest labor on the farm.—Wolverine.

FATTENING HOGS.

IN these days of low prices for produce and excessive taxation, the average farmer finds that he must turn to some sidelines to meet expenses. He finds that the raising of hogs for market is the surest method. The kind of hog should be the first consideration. Profitable pork-making depends upon the amount of feed the hog will turn into fat. It is not desirable to feed corn exclusively, an occasional feeding of oil meal, oats or something that will build muscle and prevent costiveness is advisable.

The animal should have a warm place to sleep. The bedding should be changed at least once a week. A hog likes a clean bed, and any animal does if it has what it likes, for it is then comfortable and contented. The sleeping quarters should be well ventilated. Did you ever go into a hog house where the air was foul? Almost stifled you, didn't it? What do you think must be the effect of such an atmosphere upon the hog?—D. H. Morris.

NEIGHBORS COMPETITORS.

(Continued from page 255). In the past pretty much and made rather a bungling mess of what we did do. This has brought the state into ill-repute in places where the best prospective settlers are. We can bury our heads in the sands of skepticism or have our eyes blinded by political buncombe and let the present unorganized methods defile our reputation.

On the other hand, we can adopt a policy of examination and regulation for this business, induce no one to come who had not decided to farm somewhere, and then carefully examine the possibilities of his success, discouraging those who are unfit or lack proper finance, certify our lands and prevent the sale of such as is unfit for agriculture. Why not make the state house the neck of the bottle through which all the land hungry farmers from either the corn belt or the loop district will be sifted and either sent back to productive enterprises in the cities or sent out to till our thousands of inefficient acres as companions in, instead of competitors of the farmers now there?

KITSELMAN FENCE

GET IT FROM THE FACTORY DIRECT These Michigan Men Save

"I saved one-third," declares Wm. B. Lee, Stanton, Michigan.
"I saved one-half by ordering from you," says Elford Parski, Kearsarge, Houghton County, Michigan.

Direct from Factory to Farm
You, too, can save money. Our thousands upon thousands of regular customers are cutting their fence costs to the very bone by buying direct from us at **Lowest Factory Prices**. The quality of Kitseleman Fence was never higher; prices are way down. Buy now and keep the difference in your own pocket.

We Pay the Freight

Let us send you our Free 100-page Catalog of Farm, Poultry and Lawn Fence, Gates, Posts, and Barbed Wire. Write today for this money-saving book.
KITSELMAN BROS., Dept. 278 MUNCIE, INDIANA.
America's Oldest Fence Manufacturers.

FENCING at REDUCED PRICES

Direct from Our Factory to You

We are manufacturers of twenty years' standing, not mail order jobbers. We make all kinds of Farm Fencing, Poultry Fencing, Ornamental Fencing and Steel Posts, and sell direct to you at prices that defy competition. Buy a guaranteed product direct and save money! Send for our Booklet 75M84.

We Pay the Freight.

The Parrish-Alford Fence and Machine Co.
Knightstown, Indiana.

Please Mention The Michigan Farmer when writing to advertisers

Montgomery Ward & Co.

Paint is Good Because We Make it Good

Our paint has to be good, because we guarantee it. We can't afford to have it any other way. That's why we make our own paint—to be sure it's good—and why you can be sure, too. And why you save money on

Coverall House Paint

\$1.68 to \$1.89 per Gallon

This price represents only one small profit over actual cost. You get full benefit of our huge purchases and quantity production. We sell direct to you, without any middleman's profit. We challenge comparison both with the quality of our paint and its low price.

Send for FREE Color Cards

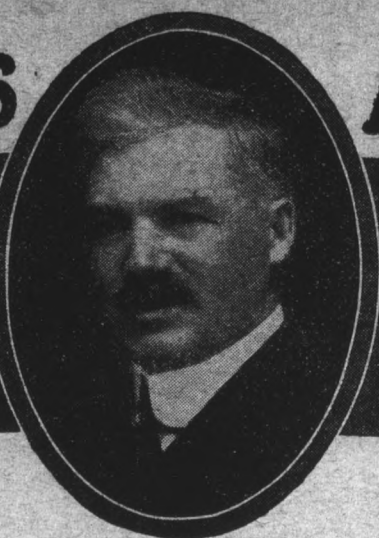
Write us for FREE Spring and Summer Catalogue No. B17. Address our house nearest you.

Montgomery Ward & Co.
Chicago, Kansas City, St. Paul, Fort Worth, Portland, Ore.
OUR PAINT FACTORY IN CHICAGO

Big Book FREE
Full of valuable information every farmer should have. Tells how to manage big 1900 acre farm. Beautiful illustrations—our pedigreed herds and seed crops. Information worth \$500.00 but costs nothing. Tells how to double farm profits—what to feed and seed. Write today—sure.
Murphy Products Co.
Box 66 Delavan, Wis.

Dr. David Roberts

Animal Medicines



The Practical Home Veterinarian

After years of research, study, experimenting and careful investigation of livestock diseases and a treatment for them, Dr. David Roberts wrote and published a veterinary book, the "PRACTICAL HOME VETERINARIAN"—a treatise on all animal ailments, whether it be cow, horse, sheep, pig or poultry, giving a short description of each and every ailment and the best method of caring for animals thus afflicted. It also prescribes the most efficient medicines for such ailments and diseases and explains the most practical and simple method possible for the livestock owner to use.

This Book Should Be in Every Farm Home

When this book was offered to the public it was so appreciated by livestock breeders that at the present time over 600,000 copies are in use and the constant demand for this splendid work on how to treat your own livestock at home is still increasing.

Bureau of Free Information

For many years we have conducted a Bureau of Free Information for the benefit of livestock owners everywhere. We invite you to write us fully in regard to your ailing animals and in reply Dr. David Roberts will tell you what is wrong, what to do and how to do it.

Thousands Write for Information
As a result thousands of livestock owners have availed themselves of this opportunity, which leads us to believe that there are many others who should do the same thing in order to reduce the \$200,000,000 annual loss through diseases of livestock in the United States.

Your Livestock Is Protected

If you would only realize what a wonderful protection this Bureau of Free Information is to you and your livestock you would write us the very first time you have an ailing animal in your barn and we urge you to take advantage of this generous offer. One letter from you and Dr. David Roberts' reply will convince you of the value of this service. The thousands of unsolicited letters of appreciation in our possession prove that prominent livestock owners are taking advantage of this opportunity.

44 Tried Prescriptions

In connection with this Free Bureau of Information we have a prescription for every curable animal ailment, whether it be cow, horse, sheep, pig or poultry.

State and Official Veterinarian

For the past thirty years these prescriptions have been used, tried and tested and found absolutely reliable and dependable. They are the prescriptions of Dr. David Roberts, a qualified Veterinarian, who is a graduate of the Chicago Veterinary College, has been State Veterinarian of Wisconsin and Official Veterinarian of the largest National and International Dairy and Livestock Expositions in the United States, where the best and most valuable of all animals congregate and compete for prizes. These are the same prescriptions that Dr. David Roberts uses in his professional capacity in the treatment of these valuable animals, as well as in his nation-wide practice and on his own pure bred herds.

DR. DAVID ROBERTS VETERINARY CO., Inc.

124 Grand Ave.

Waukesha, Wis.

A Prescription for Every Animal Ailment

These prescriptions are compounded from the best and purest ingredients that are obtainable and when administered to an ailing animal according to directions have a direct effect upon the ailment for which they are intended, therefore the necessity of so many prescriptions.

No One Prescription Can Overcome All Ailments

It is unreasonable to expect a single prescription that is good for every ailment to be very good for any. As an example our COW CLEANER will enable a cow to rid herself of the afterbirth without using force. Each and every ingredient has its effect upon the genital organs and enables the afterbirth to sever its connection with the cotyledons or buttons by the common term of "ripening" of these parts and the afterbirth will naturally come away of its own weight, leaving the parts in a normal healing condition, rendering the animal free from distress or danger. WE MAKE NO FURTHER CLAIM FOR OUR COW CLEANER.

Our Medicines Retain Full Strength

These medicines are put up in air-tight packages in order that they may retain their full standard strength for an unlimited time. The directions are so simple and plain that anyone can administer them without difficulty.

Don't Accept a Substitute

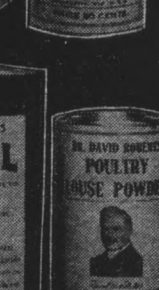
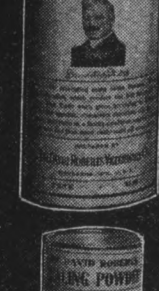
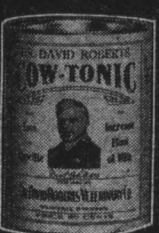
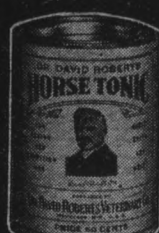
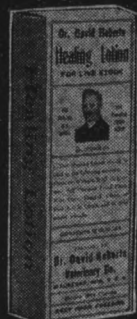
Purchase our Animal Medicines of our dealer in your town. If he hasn't the medicines that you need don't accept a substitute but have him order them for you. If he is unwilling, write us and we will supply you.

The Cattle Specialist Free

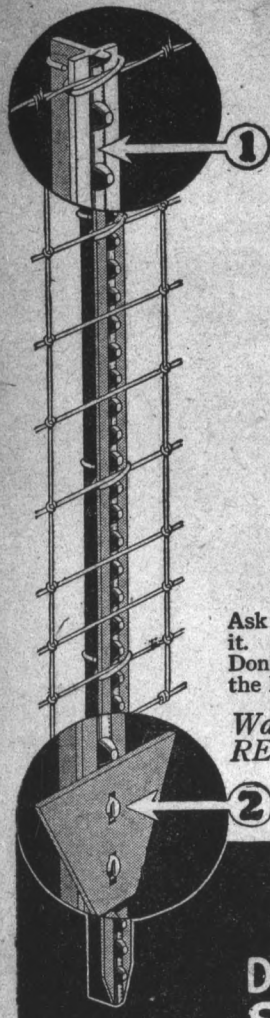
Write for a free copy of "THE CATTLE SPECIALIST," a veterinary publication, describing cattle diseases, especially Abortion in Cows, answering every question pertaining to this serious disease.

Makes Professional Calls

Dr. David Roberts will visit any farm or ranch in the United States to examine and treat any herd or ailing animal, especially cattle, afflicted with any known or unknown disease. Arrangements to be made by telephone, telegraph or letter.



Get the Big Value in the Fence Post Field



STEEL fence posts are no longer all alike. The **RED TOP** Double Strength Studded Tee has set a new standard. It is a stronger post of longer life, easier and cheaper to set and easier and cheaper to fasten fencing to.

Greater Strength—due to adding more metal in a reinforcing rib (see point 1) and also due to the fact that there isn't a single hole punched in the post either for staples or anchor plate. No rivets required to attach anchor plate. (See point 2.)

Firmer in Ground—the **RED TOP** Anchor Plate is heavier and stronger than ever.

Longer Service—the new aluminum metallic finish and solid post make it longer lived.

Better looking fences—the aluminum metallic finish gives the post a neat, trim appearance.

Easier, cheaper setting—with the One Man **RED TOP** Driver one man without a helper can set 200 to 300 posts per day.

More efficient fence fastening—**RED TOP** Handy Fasteners makes it possible for one man to attach fencing to posts. And fastener holds fencing tighter.

Ask your **RED TOP** dealer to show you this new post. Handle it. Inspect it. See how the new One Man Post Driver works. Don't buy a fence post until you do this. Circular describing the **RED TOP** line in detail sent on request.

Watch for your dealer's announcement of his big **RED TOP** sale.

Red Top Steel Post Company
38-L South Dearborn St., Chicago, Illinois

Red Top

GUARANTEED

Double Strength Studded Tee Steel Fence Posts

ONLY 17¢
Per Rod
and Up

NOW DIRECT FROM
Peerless
Factory

Big Saving For Fence Buyers

You can now buy the famous Peerless fence cheaper than you ever bought it before—we have opened our factory doors direct to the farmer—same high quality—low factory prices. Satisfaction Guaranteed. Enormous Saving.

Free Catalog Send name and address for free 104-page catalog of Peerless Fence—Barb Wire—Steel Posts—Roofing and Paints. Rock bottom factory prices. Don't buy until you get our new "Direct From Factory" money saving catalog.

PEERLESS WIRE & FENCE CO.
Dept. 2810, Cleveland, Ohio
Factories at Cleveland, O. 10
Adrian, Mich. Memphis, Tenn.

Square Deal Fence

Farmers who know how to save money buy Square Deal Fence and get the many years of extra service Square Deal gives. Stiff, picket-like stay wires make fewer posts necessary; wavy or crimped strand wires provide springiness and keep the fence tight and trim; the famous Square Deal Knot holds stay and strand wires in a vise-like grip without cutting, breaking or slipping; extra heavy galvanizing prevents rust and insures longest wear.

FREE To Land Owners

Ropp's New Calculator—the most valuable farm book ever published. Instantly figures the cash value of your crops; capacity of cribs, bins, silos, barns; answers 75,000 farm problems; prevents errors; saves figuring; every land owner needs Ropp's Calculator daily. Write for it. Post card will do. Send no postage. Get this 50c book and Square Deal catalog. Merely mention on card when you expect to buy more woven wire fence.

KEYSTONE STEEL & WIRE CO. (18)
4918 Industrial St., Peoria, Ill.

Save Money Like This

On FENCE, GATES, STEEL POSTS, PAINTS and ROOFING

FREE BOOK
Write for Jim Brown's big new Bargain Book—FREE! See Jim Brown's Factory Prices. Freight Prepaid. Send post card or letter NOW.—Jim Brown, President.

The Brown Fence & Wire Co.
Dept. 2809 Cleveland, Ohio

FENCE GATES, POSTS, ROOFING PAINT

Concord Grape Vines 1 yr. No. 1, \$40 per 1000. Fruit trees, Berry Plants and Shrubbery. Write for free catalogue today. **FEATHER'S NURSERIES**, Baroda, Michigan

STATE FAIR WATERMELON

The largest watermelon grown. Dark green, very large, and a good seller. Plant this melon and beat your neighbor. They are fine eating and will make you money too. My seeds are all tested and will really grow. Let me send you my new seed book and magazine "Seed Sense". They are both free. Write today.

HENRY FIELD SEED CO. Sept. 7 Shenandoah, Iowa

STATE FAIR WATERMELON

The largest watermelon grown. Dark green, very large, and a good seller. Plant this melon and beat your neighbor. They are fine eating and will make you money too. My seeds are all tested and will really grow. Let me send you my new seed book and magazine "Seed Sense". They are both free. Write today.

HENRY FIELD SEED CO. Sept. 7 Shenandoah, Iowa

Our Winter Grain Show

Another Demonstration of Quality in Michigan Seeds

By D. F. Rainey

VISITORS at M. A. C. during the past week witnessed the best grain show ever held in the state. Two hundred different farmers sent samples of corn, oats, wheat, beans, or some other grain for competition in the Twelfth Annual Grain Show of the Michigan Crop Improvement Association.

And this fact was driven home forcibly to visitors that the Michigan farmers are growing a mighty good quality of grain. Little wonder is it that half of the money for which our farmers competed at the International Grain and Hay Show at Chicago last fall, was brought home by them. The quality of the exhibits in some of the classes was decidedly superior to what was sent to Chicago.

Close Race for First.

"Why didn't this wheat get first?" Or a similar question on some other grain was frequently asked. It was a hard question to answer, for it had taken the judges considerable time on very close examination because of the closeness in some classes. And, too, the quality of so many second and third place winners was so good that it would seem at first that they must have been blue ribbon winners until one looked in the showcase at the end of the pavilion where the first prize winners were placed.

Mr. J. C. Hackleman, Professor of Farm Crops Extension of Illinois, was judge at this show, while Professors G. W. Putnam and C. E. Gormany, both of the Farm Crops Department of the Michigan Agricultural College, assisted in an advisory capacity. Mr. Hackleman showed himself a very able judge of corn and other grains and seeds.

Laughlin's Yellow Dent.

Great interest was shown when the judges began working Tuesday morning on Class I (ten ears of yellow dent, District I), in which there were fifty-eight entries. In the finals Charles Laughlin's Yellow Dent won first place. The sample was grown on Mr. Laughlin's farm near Dansville, and measured about eight and a quarter inches long. It was a wonderfully good sample, as may be judged by the fact that it also won the "Gleaner Cup" as the best ten-ear sample of corn out of over 175 entries in the show.

The runner-up in the race for the "Gleaner Cup" was a sample of Pickett corn exhibited by D. V. Bow, of Saginaw, which won first in the Yellow Dent class in District II. Mr. Bow's sample was a large selection of Pickett measuring about nine inches long. Mr. D. A. Geddes, of Swan Creek, had a sample of Pickett which placed second in Class 5. It being a little more starchy than Mr. Bow's entry. These two growers were very close competitors in Class 8 (one hundred ears of any variety, District I). This time Mr. Geddes' sample won out.

Duncan Corn Proved Winner.

In Class 4 (one hundred ears of any variety, District I), the Duncan corn grown by P. A. Smith, of Mulliken, and this fact enabled it to win over won first. Mr. Smith had a uniform entry, having a very good kernel which is a characteristic of the Duncan variety. Lester Milham, of Kalamazoo, had first place in the alfalfa class. The a good entry of Silver King, which alfalfa seed he threshed this year had placed second in this class.

The white dent corn classes had not nearly so many entries. In the first district, Mr. Glenn Cutler, Plainwell, beat out Garfield Farley, of Albion. Mr. Cutler's sample was more uniform. Mr. E. R. Davis, of Saginaw, won first in the white dent class in his district.

Paul Clement Surprises Them.

Paul Clement, of Britton, won first place in Class 3 with his white corn. It was the first time Mr. Clement ever exhibited at this show and as it is customary to expect first place in this class to be awarded to some southwestern Jackson county farmer, he surprised us by copping the money. There were fifty-seven entries (though fewer varieties) in the single ear class which was open to all the state. Mr. Hackleman, the judge, quickly picked out about fifteen ears which were carefully examined. There was a lot of interest in this class and several of the men having entries were on hand to see how their samples fared and also to hear what the judge might say as he was placing them. First place finally went to Charles Laughlin, of Dansville, with Mr. D. A. Geddes, of Swan Creek, taking second on his Pickett. The contest was close here but though Mr. Geddes had a little better looking ear, straighter rows of kernel with a better filled butt and tip, yet a superior kernel won for Mr. Laughlin.

Close Competition for Cups.

Mr. Laughlin, by winning in this class, becomes the custodian of the "Michigan Farmer" cup for a year. This cup has been awarded each year for thirteen years and Mr. Laughlin is the third man to have his name engraved on this cup twice. One must win this cup three times to have it permanently awarded to him.

The Goemann Trophy is another cup which stimulates keen competition. It is awarded to the best sample of rye and was won by A. W. Jewett, Jr., of Mason, with a sample of Rosen rye. This sample weighed fifty-eight and one-half pounds per bushel, excellently graded, hard and with a good color.

The seed department of the Michigan State Farm Bureau offered a silver trophy cup for the best sample of wheat. It goes to C. D. Finkbeiner, of Clinton, whose Red Rock won in a class of thirty-one entries. This wheat also won first in its class at the International Wheat and Farm Products Exposition, at Wichita, Kansas, at the International Hay and Grain Show at Chicago, at Detroit, and several other fairs.

Sweepstakes in the oat classes went to A. W. Jewett, Jr., of Mason, on his sample of Wolverine oats which weighed forty-five pounds per bushel. This sample had to beat out sixty-three others to win the cup offered.

Jewett Gets Barley Sweepstakes.

Mr. Jewett, also, won the sweepstakes barley trophy cup, with his two-row barley which was of very bright, clean color and weighed fifty-two and one-half pounds per bushel. This two-row barley has a large plump kernel and this fact enabled it to win over any other class of barley when they are equal in other respects.

Mr. D. V. Bow, of Saginaw, won first place in the alfalfa class. The a good entry of Silver King, which alfalfa seed he threshed this year had placed second in this class.

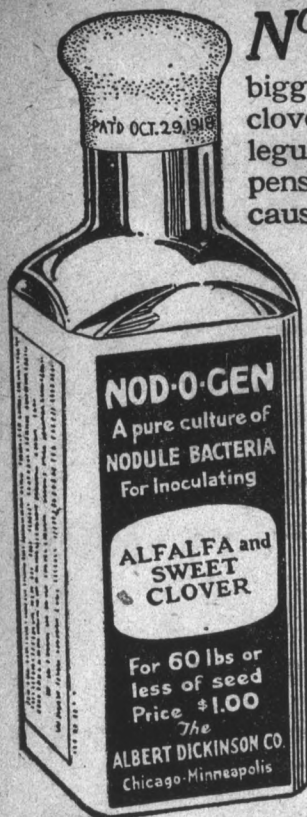
(Continued on page 264).



Please Mention Michigan Farmer When Writing To Advertisers

NOD-O-GEN

WILL HELP YOU PRODUCE BIGGER, BETTER, CROPS



NOD-O-GEN is an inoculating culture for seeds. Its use will help you to raise bigger, better, and more profitable crops of clover, alfalfa, peas, beans, vetch, and other leguminous plants—and at a very slight expense. The friendly bacteria in **Nod-O-Gen** cause nodules to grow on the roots of legumes.

The bacteria in these nodules gather nitrogen from the air and puts it into the soil.

This **free nitrogen** causes faster, heavier growth—which means more profits per acre for you.

Nod-O-Gen is supplied in three sizes:

Cultures for 60 lbs.	\$1.00
Cultures for 30 lbs. . . . .	.75
Garden Size . . . . .	.25

Nod-O-Gen is sold by the better seed and hardware dealers. If your dealer does not carry **Nod-O-Gen** in stock, send us his name and address and we will see that you are supplied.

Inoculate with NOD-O-GEN and Grow More Dollars From Every Acre

Manufactured only by
The Albert Dickinson Company
 Pine Tree Brand Farm Seeds—Globe Feeds
 and Nod-O-Gen
 Chicago, Illinois — Minneapolis, Minnesota

FAMOUS Ohio PULVERIZER



This spring are you going to drag back and forth half a dozen times across fields that you could finish in two trips with a Famous OHIO Pulverizer?

Are you going to let your plant roots choke out in soil that is full of lumps

and honey-combed with air spaces, when a Pulverizer is all you need to make a perfect seed bed?

Fifteen minutes trial will convince any man that a Famous OHIO Pulverizer is the most valuable tool on his farm and that it is far superior to any Pulverizer on the market.

Write for our photograph book "The Foundation of Farming."

Manufactured by

The Ohio Cultivator Co., Bellevue, Ohio



Locks 50 Cows Instead Of One

West Bend BARN EQUIPMENT

West Bend Automatic Stanchions equipped with our wonderful locking-releasing lever save you time and labor—and insure safety in locking up or releasing the cows, yet you pay no more for West Bend equipment than for ordinary stanchions that must be opened and closed singly by hand. The West Bend lever controls from

2 to 50 West Bend Automatic Swinging Stanchions. The entire row of cows can be locked up or released instantly by one throw of the lever. Cow stops are operated at same time, and when set guide cow into the stanchion. Every user says it's the greatest idea ever brought out in modern barn equipment. You certainly want it in your barn. Write today for catalog showing complete line of West Bend Barn Equipment.

WEST BEND EQUIPMENT CO., 280 So. Water St., West Bend, Wis.

News From Cloverland

By L. A. Chase

FOR MORE LAND CLEARING SCHOOLS.

IN response to a questionnaire sent out by the county agent, a considerable number of farmers in Houghton county are reported to have expressed no wish that a land-clearing school be held in their neighborhood this summer. On the other hand, six Upper Peninsula county boards of supervisors have already made an appropriation to take care of their share of the expense of such schools. These counties include Ontonagon, Gogebic, Iron, Marquette, Delta and Schoolcraft. Two of these counties had not hitherto made such an appropriation. These six counties are all that have as yet been approached on the subject and in every case the request was granted with only a few minutes' explanation of the need for it. The Houghton situation would, therefore, seem to be due to a peculiar local condition.

NEW STATE PARKS.

THE State Department of Conservation has practically determined to add two new state parks to its system in the Upper Peninsula, it is announced by the Upper Peninsula Development Bureau. These parks will be located on Lake Michigamme and Lake Gogebic respectively, and will be very attractive from the standpoint of natural beauty and surroundings. They are situated on main trunkline highways. Both Marquette county and Michigamme township own park sites on Lake Michigamme, one of the most scenic inland lakes of the state. Some years ago it was proposed that the state should take over the site belonging to Michigamme township. It is stated that before the Lake Michigamme site is taken over the state wishes to acquire by gift 160 acres of land. There is also said to be a possibility of the park commission making a state park of the location known as "Bishop's Hill" close to Marquette. This is a high eminence of land which gives a magnificent view of Lake Superior and is sufficiently large for camping purposes.

WILL ESTABLISH INFORMATION BUREAUS.

FOR the assistance of tourists and travelers through the Upper Peninsula during the coming season, local information bureaus are to be provided where tourists may receive information relative to camp sites, roads, accommodations, etc., which will be provided gratis. A sign made of heavy sheet metal about three feet square cut in the form of a three-leaf clover and finished in enamel, double-faced and painted clover-green, is to mark these bureaus for the benefit of the passer-by. The signs will resemble the clover-leaf road markers now used in the peninsula. Across the center of the sign will read the words, "Cloverland Information." The signs will be hung on a bracket outside the establishment which stands ready to furnish reliable information. In addition to verbal information, there will be supplied booklets containing information about "Cloverland."

NEW ROAD MAPS.

THE Upper Peninsula Development Bureau is bringing out revised road maps for free distribution, this summer. These maps will indicate the location of springs, camp sites, hotels, garages, etc., and a list of these

establishments will accompany the maps. The folder enclosing the maps will also present descriptive material of interest to tourists. It is planned to distribute some ten thousand of these maps this season. There are also some eight thousand pamphlets, entitled "Cloverland in Clover Time" for distribution.

COW-TESTING POPULAR.

THE South Ontonagon Cooperative Cow-testing Association elected officers on January 24. There are now twenty-six farmers in this association. This number does not include all the farmers that have signified a desire to join the association, but it is stated that the number, twenty-six, cannot be exceeded and that it will be necessary to form an additional association if these outside farmers are to be accommodated. The next meeting of the association will take place at Ewen, February 21.

ADVOCATES RAISING OF BEANS.

MR. VERNON BAILEY of the United States Biological Survey, advocates the domestic raising of beavers for the market as a good business for the farmers of northern Michigan and adjoining states. The quality of the pelts produced in this region is very high, he says, and the price is about \$35 per piece. By careful rearing and selection Mr. Bailey avers that prices ranging as high as \$75 can be secured. Some of the cut-over lands now carrying aspen, willow and pin-cherry, are well adapted for beaver culture and are better devoted to reforestation and the rearing of beavers than to agriculture. It is announced that Mr. Bailey will visit northern Michigan this summer with a view to interesting farmers and others in beaver culture. The success of silver fox farming in this region seems to justify optimism regarding beaver farming. Indeed, Mr. Bailey thinks fox and beaver farming can be carried on by the same person simultaneously. The propensity of the beaver to destroy growing trees can be controlled, he says, if the beaver is supplied with the little valued aspen and pin-cherry. For many centuries this north country produced incredible quantities of beaver and other pelts for the great northwest fur trade of the Hudson Bay, Northwest and American fur companies. It will be interesting to see if this trade can be revived on different lines.

GROWING PEAS FOR CANNERY PROFITABLE.

WITH regard to the establishment of a pea canning factory at Sault Ste. Marie, the Evening News of that city publishes a letter received by a farmer at Dafter from a pea-canner in Wisconsin relative to the conditions for success in the industry. Peas must have good soil—rich and not too light. This Wisconsin canner says in twelve years there has never been a failure of the crop in his locality. Last year was the poorest season so far, but it is stated that even so, some farmers made \$65 per acre, but this has often been exceeded.



Tile Drainage Important

I READ with a great deal of interest the articles published in a recent issue of the Michigan Farmer, on the subject of "Tile Drainage," and I sincerely hope that articles will appear weekly on this all-important subject until farmers are thoroughly aroused and fully appreciate the advantages to be derived from drainage.

Coming from central Indiana, as I do, where the question of tile drainage has long since ceased to be a question, but an absolute necessity, I have seen the great advantages and benefits to be derived from a good system of well constructed tile drainage.

The question of how close or how far apart lateral drains should be placed is largely a matter of the character and lay of the land. If the land is somewhat rolling, with fairly good drainage to the lower levels, with the sub-soil somewhat porous, the lateral drains can follow the low ground with very good results. But if the surface is rather flat and of a texture which we commonly call "juggy," then it will be necessary to run laterals on to the higher ground and from three to four rods apart.

Not only is it of vast importance to have ground well drained in order to get on to it in early spring with the plow, and get the seeds in early; but there is a more important and far-reaching effect to be obtained by tile drainage. And that is the condition it puts the soil in for the reception of seed and the growth of plants. It is an old established fact that water and air will not occupy the same place at the same time. Many farmers have the idea that because they can not see water standing on the surface of their land that it is not wet enough to hurt it, but at the same time the water level may be two inches below the surface, thereby excluding all the air and becoming, as we say, "waterlogged," and remaining in that condition from the time the fall rains come until late in the spring. With the result that the ground becomes hard and clammy and the bacterial life, which is so necessary to plant growth, is almost obliterated as a consequence of being covered with water for so long a period. But on the other hand, if the water level can be lowered to a depth of about thirty inches the pores of the ground which were formerly filled with water will become filled with air as the water recedes, thereby bringing more warmth to the ground and encouraging and developing bacterial life. And the soil when plowed, will break up loose and mellow, easy to prepare the seed-bed, and will be in far better condition to receive seed and produce a more healthy plant growth than can possibly be obtained on undrained land.

Another fact stands out prominent as we lower the water level in our soil, and that is that our field plants will send their roots down deeper into the earth and thereby take up plant food that would not be available on undrained land because plant roots will not penetrate water-soaked ground to any extent, but will spread out near the surface of the soil, then when dry weather comes and the surface dries out they are in a poor condition to withstand the drouth.

Tile drainage will often pay for itself in one or two seasons.—E. G. Storm.



A Three-Plow Tractor With Ball and Roller Bearings at 29 Points

In developing the McCormick-Deering 15-30, the Harvester Company has produced a tractor which gives maximum service and economy in operation. The features in design of this tractor are the result of field experience gained through 18 years of contact with tractor farming conditions. Ball and roller bearings have been used at the points of high speed or extreme strain, and all other parts have received the same consideration. The resultant smooth-running, modern tractor

meets the many power requirements of the present-day farm.

Practical design, ease of operation and handling, make the McCormick-Deering tractor an ideal three-plow power unit. It also develops a surplus of power to handle a great variety of belt jobs (threshing, silo filling, husking and shredding, feed grinding, etc.) and its smooth, flexible operation and increased speed make it a leader for all kinds of draw-bar work.

You will want to know more about this latest McCormick-Deering tractor. Ask the McCormick-Deering dealer for complete details or write for our new catalog.

INTERNATIONAL HARVESTER COMPANY

Chicago of America USA
[Incorporated]

93 Branch Houses and 15,000 Dealers in the United States

ELECTRICITY From The WIND!



Wonderful New Invention!
This amazing achievement—harnessing the wind to generate electricity—is finally perfected in the AEROLETRIC. The first successful wind-driven electric plant—developed and built by Perkins, the originators and pioneers in the wind-driven field as well as the leading windmill maker for the last 60 years.

Electric Light and Power at No Fuel Cost!
Think of that! A complete electric plant for your farm that costs nothing to run. All the electric light you need—all the electric power you can use at no fuel cost. No gasoline or kerosene to buy. No engine to care for. The AEROLETRIC is a 14 ft. Perkins Windwheel with a Westinghouse generator built in. The current, generated by the turning of the wheel in the wind, is carried down the tower to large storage batteries where it is stored for use as you need it.

Batteries Store "Juice" to Last 11 Days Without Wind
The problem of "not enough wind" is solved by AEROLETRIC. It charges on as low as a six mile an hour wind, which is just the faintest breeze. Then the batteries store enough juice to last 11 days without wind. Government reports show this condition is never found. So you will always have wind enough for the AEROLETRIC.

Write for Book—"Electricity from the Wind." Read about this wonderful invention and learn the new way to get Electricity—sent FREE.
Perkins Corporation, 909 Main St., Mishawaka, Ind.
DEALERS: Sales possibilities are big—write for proposition.

GOOD SEEDS

Grown From Select Stock—None Better—53 years selling good seeds to satisfied customers. Prices below all others. Extra lot free in all orders I fill. Big free catalogue has over 700 pictures of vegetables and flowers. Send your and neighbors' addresses.
R. H. SHUMWAY, Rockford, Ill.

TREES & PLANTS THAT GROW

CATALOG FREE
Great Bargains, Standard Varieties, Best Quality, Low Prices. Satisfaction or money refunded. 70 years in business proof of our responsibility. Write for Nursery and Seed catalog.
PETER BOHLENDER & SONS
Spring Hill Nurseries
Box 211 Tippecanoe City, (Miami Co.) Ohio

GLADIOLUS


BULB FREE. Wonderful kind will bloom in pot in house or garden, also Color Book 75. Named Gladioli for 4c postage. Marvelous Colors. Full growing instructions. Colonial Gardens, Orlando, Florida

Why Not PUT THIS NEW MILL ON YOUR OLD TOWER



Albion steel and wood mills are quiet and powerful. One-third the working parts of any other mill. Only main Pinion bearing subject to wear. This is oilless, and easily replaceable. Govers by dependable weight without springs. Fits any 4-post steel tower. Why not shorten your chore hours now with a good Windmill? This is your chance—F. O. B. Albion. Erect it yourself. Ask your dealer, or write direct to
Union Steel Products Co. Ltd.
No. 528 N. Berrien Street,
ALBION, MICHIGAN, U. S. A.

FREE! TWO SEED BOOKS



Contain a lot of information about seeds. They're my own actual experiences, and might help you. They have helped thousands of my customers to make more money out of their gardens, and field crops. Absolutely free. Don't cost a cent. Send your name. Let me mail them to you.
HENRY FIELD SEED CO., Dept. 7 (Shenandoah, Iowa)

EVERGREENS

Hill's Hardy Tested Varieties
Fine for windbreaks, hedges and lawn planting. All hardy, vigorous and well rooted. We ship everywhere. Write for free Evergreen book. Beautiful Evergreen Trees at moderate prices. B. Hill Nursery Co., Box 220, Dundee, Ill.

Wear "Sportos" this Winter —Warm and Water-tight

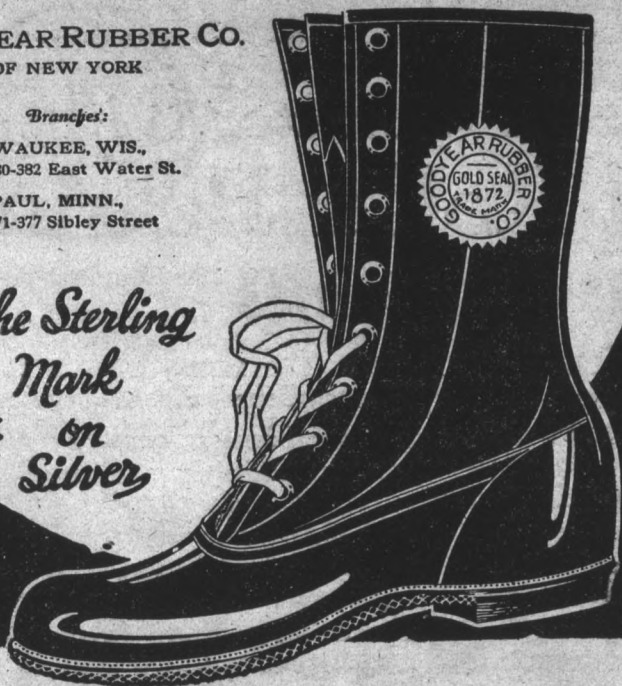
WADE through snow, mud, slush—your feet won't feel the cold or wet. These light-weight rubber bootees fit like a shoe. Thousands of sportsmen, farmers, miners and lumbermen wear Sporto boots because they're made of real, wear-resisting rubber. Ask your dealer for Sportos—look for the Goodyear Gold Seal trademark on every pair.

GOODYEAR RUBBER CO.
OF NEW YORK

Branches:

MILWAUKEE, WIS.,
380-382 East Water St.

ST. PAUL, MINN.,
371-377 Sibley Street



C. L. Brody, Secretary-Manager, of Michigan State Farm Bureau, and J. W. Nicolson, Mgr. of Seed Dept., inspecting seed at threshing time near Oasis, Utah.

Utah Common Alfalfa Seed

Farm Bureau Brand Utah Alfalfa Seed is the cheapest, Michigan adapted Alfalfa Seed on the market.

Inspected while growing and after threshing by representatives of the Farm Bureau Seed Department.

Grown at an altitude of 4500 feet under severe climatic conditions our high quality strains, free from noxious weeds, will give results.

For short rotations we recommend this seed. For permanent fields use Grimm, Cossack or Michigan grown Farm Bureau Brands.

About 10,000,000 pounds of Alfalfa Seed has been imported each year for the last three years.

Don't take a chance on these imported seeds. We do not handle them.

Buy Farm Bureau Brand Seeds from your local Co-Op.

If you can't get this service locally, write

Seed Department

MICHIGAN STATE FARM BUREAU
LANSING, MICHIGAN



Potato Producers Meet

To Discuss Problems of Spud Production

By H. C. Moore

THE Michigan Potato Producers' Association held their annual meeting at East Lansing, Michigan, on February 1-2, 1923. The meetings were very well attended and an interesting program was provided.

Mr. H. B. Fullerton, director of the Long Island Experiment Station, Medford, Long Island, gave an interesting discussion of his experiences in testing various strains of seed potatoes. According to his report the Michigan Russet Rural variety of potatoes does exceptionally well on Long Island and is quite free from serious disease. He spoke of the Green Mountain variety as being particularly subject to such diseases as mosaic, leaf roll, etc. Mr. Fullerton reported that there would be a good market in Long Island for Michigan seed potatoes, but that it was necessary for the Michigan men to actually visit growers in Long Island and become acquainted with them.

Professor William Stuart, potato specialist of the United States Department of Agriculture, gave a very interesting discussion on interstate tests for bettering the quality of certified seed potatoes. During the past five years Professor Stuart has carried on tests with certified seed potatoes in several of the southern states, the seed used being secured from the states of Wisconsin, Nebraska and Minnesota. He brought out the fact that there was a wide variation in the vigor and productive capacity in various strains of potatoes. By means of his experiments he has been able to locate a few comparatively high yielding strains. Professor Stuart spoke very highly of work done by Michigan in conducting certified seed tests in various states. He thought that such work would greatly influence the growing of better quality certified seed.

At the business session the following men were elected directors of the association: Thomas Buell, of Elmira, Mich.; R. C. Bennett, of Alba, Mich.; J. D. Robinson, of Levering, Mich.; J. Fred Brady, of Wolverine, Mich., and E. S. Brewer, of Millersburg, Mich. J. W. Weston and H. C. Moore, of East Lansing, Mich., were elected as honorary members of the board.

The following officers were elected for the ensuing year: Thomas Buell, president; R. C. Bennett, vice-president; H. C. Moore, secretary-treasurer.

In connection with the potato meetings a very interesting and instructive exhibit of potatoes was shown in connection with the farm crops exhibits. Several samples of potatoes which won prizes at the Grand Rapids Apple and Potato Show last December were shown. One very interesting exhibit was that showing different grades of market potatoes. Samples of potatoes from Idaho, Minnesota, Wisconsin, New York State and Michigan were secured on the Cleveland market and were placed in the exhibit. This exhibit showed very clearly the need for better grading of our market potatoes.

Approximately sixty lots of potatoes were entered in competition for prizes. In the boys' and girls' club exhibit the following prizes were awarded: First prize, Edward Domke, of Millersburg, Mich.; second prize, Clinton McDonald, of Millersburg, Mich.; third prize, Perrien Hauk, of Plymouth, Mich.

In the commercial exhibit of the Russet Rural class, C. S. Dearborn, of Bellaire, won the first prize; J. H. D. Meyers, of Levering, Mich., second; M. C. Coates, of Midland, third. The awards of merit were granted to the following: Alfred Grueber, of Frank-

enmuth; Hugh Henney, chief, and Bernard Stephens, Boyne City.

In the any other variety class the first prize was awarded to R. V. Beardslee, of Owosso, who exhibited a peck of certified Irish Cobbler potatoes; second prize was won by W. R. Hayward, of Hillsdale, on White Rurals. Alfred Grueber, of Frankenmuth, was awarded third prize on White Rurals. Awards of merit were granted to W. R. Kirk, of Fairgrove; M. C. Coates, of Midland, and Charles Lamphried, of Midland.

FERTILIZER COSTS.

THE farmer's chief problem, as we see it, is to cheapen his cost to grow a bushel of grain; a pound of tobacco; a bale of cotton or a pound of meat, and low cost gives him a better chance to make a profit. Fewer acres under the plow, with a decided increase in yield per acre, should materially reduce the labor cost to produce. In many instances too many acres are half farmed.

The farmer now has an opportunity to make substantial savings on his fertilizer purchases by selecting mixtures of high analysis as recommended by the agricultural authorities. The cost of labor, freight, bags, and many other items, is just as much on a ton of fertilizer containing a small amount of actual plant food, as on a ton of high analysis, containing a large amount of plant food; consequently, a dollar invested in high analysis goods will buy more actual crop producing value than if used in the purchase of low analysis brands.

We know of no other manufactured and transported article that the farmer buys on which the price is comparatively as low as on fertilizers, and the same can be used at a profit in the growing of farm products.

OUR WINTER GRAIN SHOW.

(Continued from page 260).

an unusually good color for Michigan-grown seed. The other entries contained a little red clover seed—a common occurrence in this state.

Ingham county had 111 entries and so won the cup for the "largest number of entries" from a county. They also won the most points as determined by the number of firsts, seconds, thirds and fourths awarded growers in the different counties.

One gratifying fact about the show is that it is truly a representative Michigan farmers' show. The winners' list shows that twenty-two different farmers won firsts. Mr. Jewett is a veteran exhibitor so it is not surprising to see him win six of the blue ribbons. But so many farmers are growing good quality grains, such as the Wolverine oats, Rosen rye, and Red Rock wheat, products of the plant breeder of the Michigan Agricultural College, and then by giving it a little extra care they have a sample which makes a strong bid for first place in its class in any show.

The farmers of Michigan by their number and numerous entries, demonstrated most emphatically that they are backing the Michigan Crop Improvement Association in its efforts to make the annual winter grain show the best in Michigan and among the best in the United States, both from the standpoint of the number of exhibitors and the quality of their entries.

Quail eat sixty kinds of weed seeds and 116 kinds of insects, most of them harmful.



Hard Luck and Progress

Perhaps Farmers are Better Off Than They Think They Are
By R. D. Bailey

THIS has not been a great money-making year for farmers, yet, we are doubtless better off than some of us realize.

Farmers have had their living, food, fuel and house rent. Manual laborers living in cities have netted little more. In addition to that, the soil, buildings, grounds and stock of a farmer of gumption have had a chance to improve.

In the city when things are slack the laborer must be content merely to exist. His only means of going ahead lies in study of technique of his regular job or of another, in order to take a higher rank in it when work opens again. On the other hand, the farmer not only may live on as good a scale all the time as the city laborer, but, when times are hard for both, may, if he has the gumption, enjoy far better living.

In the slackest times there is no reason why farmers in a large portion of Michigan should not have an abundance of good dry fuel gathered from the home woodlot. To even provide fuel when there is no work is no small problem for the man in the city.

Besides fuel, even though he may not apparently make a cent, see how well the farmer of gumption and foresight can provide for his table. There can be the best of potatoes the year around. To this can be added a long list of fruits and vegetables, fresh and canned, from the home garden. There need never be a time on the farm when there is not fresh beef or pork, sausage, ham, bacon, salt pork, corned beef, in endless succession. Much meat can be canned and left fresh.

The farmer who does not have eggs, chicken pie or fried chicken whenever fancy dictates, is a poor manager. Let a farmer move to the city and buy, for a year, the milk, eggs, butter, cream and dressed poultry that are used so freely on the farm with little thought of cost, and he will be ardently yearning for the farm again.

The farm house that may not seem very much will be appreciated after paying \$45 to \$60 a month rent in the city.

In that very plain, unpainted farm house, simple, pure, enduring joys may lodge, and there also may grow up a brood of clean, bright, promising children—a man and woman's contribution to civilization, even though the parents have apparently not made a dollar.

You have to be doing pretty well in the city to keep an auto and afford a place to store it. If you rent storage there, it costs you from \$5.00 to \$15 a month. On the farm the storage of the auto is no problem at all.

Taking the other side of the question, I claim that times are never so hard that a progressive minded farmer can not gain some ground. There need never be a year so dull in which the farmer, besides having an abundant table and comfortable fires, can not increase the value of his farm and its potential power by increasing its fertility; for a farm should improve in fertility while being used.

Beef may be down to almost nothing and potatoes next to nothing; yet, at that very time, there may be a crop of calves dropped on the farm better in grade than the year before if the farmer has foresight.

Oh, of course, if the farmer goes around hollering about the government, and everybody's being a crook, and sullenly refusing to do anything for himself, he will not gain any ground.

There is nothing in a hard year to prevent a farmer's breeding all his stock to superior sires—thus advancing the value of offspring by hundreds of dollars.

There is nothing to prevent his cleaning and repairing the old hen house, delousing it, culling out unfit hens, feeding more intelligently than ever before, and paying his whole grocery bill with eggs.

The markets may be all shot to pieces; yet, there is nothing to prevent a farmer's slicking up all around his place, grading his dooryard, setting out artistic clumps, hedges and windbreaks taken from the woods without cost.

He may not be able to buy paint; but he can add dollars to the value of his property by raking the yard, removing rubbish, cutting brush, having a neat wood pile, and moving the barn yard so it will not show from the house or the road.

Hard times may prevent some from buying spray material; but it need not keep any from gaining ground in spite of fate, by pruning and by grafting cions from choice stock.

In spite of hard times, thousands of us farmers, when we can't sell a thing, can cut posts in swamp or wood-lot and improve the fences, and re-stretch and neatly staple the wire already there. Hard times do not prevent a man's digging stumps—thus adding dollars to the farm.

Hard times and low markets do not of themselves prevent a man's making flower beds to please his wife.

Hard times do not prevent a man's shaving and being a little more civil and decent.

Hard times do not keep a man from being a little more kind and gentle to wife, children, neighbors, and even to his stock.

Hard times do not prevent a man's being a pleasant visitor at school, a more devoted attendant at church, and more helpful to neighbors in trouble. Hard times need not prevent a man from improving his system of cost accounting on the farm nor from studying out greater efficiency in all farm operations.

A man of spirit and gumption, when things are slack and apparently unprofitable on the farm, will wring success from unfavorable circumstances, by deep study of the many bulletins about his business.

I have yet to meet the farmer who couldn't be helped by these bulletins. It's that feeling of self-sufficiency, that feeling of "you can't tell me anything" that keeps a whole lot of farmers just where they are—doing pitifully poorly.

The Book that Brings the Money



REAL GOLD! More money from your farm—this year. And this free book tells how to get it! Bigger grain harvests—and far better grain profits—invariably follow the use of

Superior Grain Drills

For Team or Any Tractor

The reason is that the Superior Drill does—instantly and automatically—with *all* your grain, exactly what you would do if you were to plant each seed by hand. It makes a roomy trench. It deposits each seed at precisely the right depth. It spaces evenly—to the fraction of an inch. And then it carefully covers every seed—leaving miniature furrows to hold snow and moisture and to provide for harmless soil-expansion when the spring thaws come.

The whole story is well told in the booklet which is yours for the asking. Write today—or mail the coupon.

The American Seeding-Machine Co., Inc.
Springfield, Ohio

The American Seeding-Machine Co., Inc.
Springfield, Ohio

Please send me a free copy of your book, "Drilling for Gold."

Name _____

Address _____

Only \$39.50
Kirstin One Man Stump Puller

\$39.50 buys a New One-Man Kirstin Stump Puller during Introductory Sale. Thousands now in use—read what satisfied owners say. Weighs only 100 lbs. Easily operated by man or boy. 100-lb push develops 5 1/2-ton pull. Fast operating—pulls each way lever is moved. Made of best tool and carbon steel, all-steel long-lapped chain and cable.

THIRTY DAYS' TRIAL
Backed by \$10,000 Bond; 3-Year Guarantee

You take no risk! See how easily, quickly and cheaply you can pull big stumps alone—without extra help. The Kirstin weighs less, cost less—yet has greater speed, strength and power.

Land Clearer's Guide Free
Written by leading experts—tells best methods under all conditions. 60-page book—full of pictures and colored illustrations. It's free.

Reduced Prices
Get low demonstrator prices on all KIRSTIN One-Man and Horse Power Stump Pullers. Demonstrators being appointed rapidly—only one allowed in each locality—write today.

A. J. Kirstin Co.
308 Lud St.
Escanaba, Mich.

QUICK SHIPMENTS!
Atlanta, Ga.
Portland, Ore.
Escanaba, Mich.
San Francisco, Cal.

Get Low Prices on Berry Boxes and Baskets

Free Catalog! Shows you how you can save money by buying direct from the largest Berry Box and Basket Factory in the Country.
New Albany Box & Basket Co., Box 112, New Albany, Ind.

For Healthy Orchards Plant Michigan Grown Trees

Buy handsome, thrifty trees, grapevines, berry bushes, roses and shrubs from your own state and insure prompt receipt in vigorous condition. Kalamazoo County is famous for hardy, well-rooted stock. We guarantee healthy and true to name. You ought to plant more fruit trees this season. Special rates if you order now. Our handsome catalog of dependable trees, free for the asking.

CELERY CITY NURSERIES
Box 200, Kalamazoo, Mich.

Direct to You, At Wholesale Prices

SEED CORN Ear or Shelled

I sell seed corn ear or shelled or any other old way. It's all tested and proven and sold on approval. If you don't like it we trade back. Samples free, also advice such as it is. We can furnish seed corn to fit your climate. Write today for free seed corn samples, seed book and "Seed Sense".
HENRY FIELD SEED CO., Dept. 7, Shenandoah, Iowa

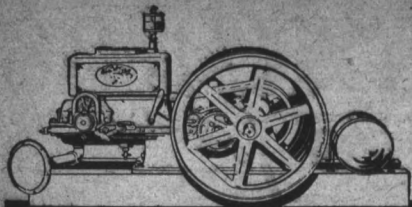
PEACH TREES, 20c

Apple Trees 25c each Postpaid. Send for 1923 Bargain Catalog of Fruit Trees, Plants, Vines, Shrubs, Guaranteed Garden and Flower Seeds. Special prices to large planters.
ALLEN NURSERY & SEED HOUSE, Geneva, Ohio

Glass Cloth a transparent waterproof fabric as efficient as glass for hotbeds, poultry houses, etc. Sample 3x9 ft. P.P. \$1. Cat. Free. **TURNER BROS., Deak 22, Bladen, Neb.**

TRY a Michigan Farmer Classified Liner. They bring results.





A Few Cents Per Day

—for oil and fuel keeps the Waterloo Boy working day after day—pumping water, churning, cream separating, washing, grinding feed, elevating grain—saving valuable time and labor for you and the women folks.

Waterloo Boy Farm Engines

Fuel and oil will be about the only expense you will ever have because Waterloo Boys are built for economical service.

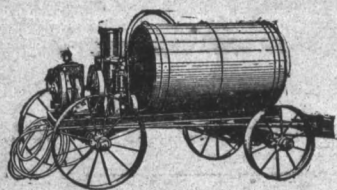
All important wearing parts are hardened—engine is perfectly balanced—no vibration at any speed. Adjustments permit taking up wear that develops. Magneto supplies hot, fat spark—easy to start—no dry cells or batteries to require frequent replacement. Speed changes made instantly while engine is running.

Hit-and-Miss Gas Engines furnished in 2, 3 and 5 H. P. sizes. Throttle-governing type kerosene engines in 5, 7, 9 and 14, also 25 H. P. sizes.

WRITE FOR FREE ENGINE CATALOG that gives complete information on these better running, easier-starting, longer-lasting engines. Also tell us what other implements you are interested in and get "Bookkeeping on the Farm", a valuable account book. Address John Deere, Moline, Ill., and ask for Booklet XW-622.

JOHN DEERE
THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

"BEAN" SIMPLICITY SPRAYER



An Ideal Outfit for the Grower with Limited Acreage

A complete, high grade, light weight Power Sprayer for the grower with small acreage, who wants a clean orchard and profitable crops. Delivers

5½ Gallons a Minute at 250 Pounds Pressure

Equipped with Complete Rotary Agitator; Built-in Pressure Regulator; 2 H.P. Sprayer Engine; Special Truck; Bean Pump—and other features found in no other low-priced outfit. Bean Quality thru and thru. Furnished without truck, if desired.

BEAN SPRAY PUMP CO.
31 Hosmer Street, Lansing, Mich.
251 W. Julian Street, San Jose, California
Gentlemen: Send me your new catalog and full details of the Bean Simplicity.

Name _____
Address _____

HUDSON



Crop-Saving Sprayers

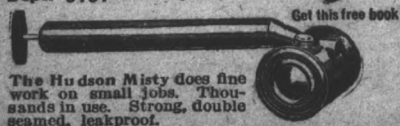
Do You Sprinkle or Spray?

Beware the low pressure sprinkler—good spraying demands high pressure. The extra capacity HUDSON pump and the sturdy tank riveted like a steam boiler, insure the highest working pressure of any compressed air type.

The High Pressure Sprayer

Equipped with a combination nozzle for light or heavy mixtures. Leak-proof shut-off. Can be furnished with an extension for spraying fruit trees. Free Book—"When, What and How to Spray." Write today for your copy, or ask your Home Town Hudson Dealer.

HUDSON MFG. CO.
Dept. 3131 Minneapolis, Minn.



The Hudson Misty does fine work on small jobs. Thousands in use. Strong, double seamed, leakproof.

LIFE STORY OF SCAB FUNGUS.

(Continued from page 251).

day. Infection from summer spores from spots on young leaves probably much more important than the ascospore. The winter stage has produced its infection and the summer spores will now spread it.

This, then, is the story of the apple scab fungus. Control of the fungus depends absolutely upon our finding the vulnerable points for attack. We have shown, first, that apple scab lives over winter on the fallen leaves, and that the fungus matures there in the spring. We may do one of two things—get rid of the leaves entirely, or we can ward off the attack of fungus which comes from these leaves. Doubtless, turning under the leaves by plowing does a great deal of good, but destruction of fallen leaves as conditions permit you to practice it, is not enough.

We have noticed in our studies one thing that is significant, and that is that apple scab fungus is maturing earlier than it was ordinarily supposed to do. The old spraying rule which you followed, some years, I grant most successfully, has advised a pink spray. But infection, especially with such early developing varieties as Duchess, has come so early in the last few years as to demonstrate to our satisfaction that spraying which begins at the pink stage and drags on and on, will not do the work. The disastrous results of 1922 have resulted from getting there too late.

I wish to advise either a delayed dormant or a pre-pink spray, not to take the place of, but in addition to the regular pink spray. If these sprays are followed by another when the petals fall, you will have put on three applications, in close succession and at the very beginning of the season.

Let me point out to you that this bunching of your protective sprays at the early part of the season is exceedingly important. The purpose of the very first spray application is to prevent primary infections. The purpose of the second and third applications is to prevent the secondary and tertiary infections. This advice which I am giving you is based on the soundest biological principles. It recognizes that this scab fungus has enormous power of spreading. If it once becomes established two or three generations of unchecked will spread scab throughout the entire orchard. By preventing as many of the first infections the secondary infections are few, and by preventing as many secondary infections as possible the development of scab late in the season is not serious. This is the only way that spraying can prevent scab. If apple scab is present everywhere on the leaves because you have neglected the primary and secondary infections, then such a rain of spores gets to the developing apples that all the spraying in August will not give clean fruit.

In the 1923 season we shall again make studies determining exactly the time of spore maturity for the various localities. With this information, and with the knowledge that discharge of spores takes place only when the warm spring rains release them, you are equipped to give to the apple the prevention it needs.

In general, each man must design his own spray practice outline. But, he must not go contrary to the principles I have outlined. He must spray when the spores are mature and before they are discharged. He must bunch his attack on the first half of the season.

In general, I believe large orchards are under-equipped to cover the trees promptly and with despatch. A pre-pink spray is not a pre-pink spray if it drags into a pink or petal spray. If this matter of timeliness means anything, it means to get there efficiently, thoroughly and promptly.



In the Service of the American Farmer

SCIENTIFIC feeding is to-day as important in the raising of profitable crops as in the raising of profitable cattle and hogs.

First thing: Are your fertilizers **RIGHT**? Look up or send for the **AAC** man in your locality. He represents an organization whose aim is not simply to sell you so many bags of fertilizers, but to help you **GROW CROPS** through careful selection of the proper fertilizers for your particular soil and climatic conditions.

And what organization is better qualified to give you this help than the one having behind it the accumulated experience of what is probably the most noted group of authorities on plant foods and soil fertility in all fertilizer history?

THE AMERICAN AGRICULTURAL CHEMICAL CO.

Alexandria, Va.	Cleveland	Henderson, N.C.	Norfolk
Atlanta	Columbia, S.C.	Jacksonville	Philadelphia
Baltimore	Charleston, S.C.	Los Angeles	Raleigh
Boston	Spartanburg, S.C.	Montgomery	St. Louis
Buffalo	Detroit	New Haven	Savannah
Cincinnati	Greensboro, N.C.	New York	Etc.

Address nearest office

AAC

"DOUBLE A" QUALITY FERTILIZERS

WRITE for the AAC agency if we have no dealer near you



WRITE to the Agricultural Service Bureau

of this organization, in care of our office nearest to you, for suggestions on your particular crop problems. This Bureau, in charge of Dr. H. J. Wheeler, formerly Director Rhode Island State Experiment Station, carries on practical experimental work in all sections of the country, to determine just what fertilizers are best adapted to each crop and locality. It is conducted as a helpful service to the American farmer. No charge or obligation.

WRITE for this free booklet:

"How to Get the Most Out of Fertilizers"

CIDER MILLS FOR EVERY PURPOSE

Farquhar Hydraulic Cider Presses are made in 4 sizes, adapted for community work or large manufacturers. Tanks have adjustments for eliminating all swelling or shrinking. Elevator has slat bottom, no dirt is carried into the press. Loading and unloading truck platforms on each side of press allow continuous pressing, no delay. Pressure platform is iron bound preventing expansion and leakage at the corners. Construction throughout is the finest in every detail. All Farquhar presses are guaranteed. Give perfect service for many years.

Write for catalogue giving full information on Farquhar presses and cider mills. Also ask for booklet, "By-Products of Fruit."

A. B. FARQUHAR CO., Limited
BOX 112, YORK, PA.

Also manufacturers of auxiliary cider mill machinery, farm power machinery and farm implements.

WRITE FOR CATALOGUE.

NEW HUCKLEBERRY

The Garden Variety that grows from seed the first year. A Huckleberry that thrives in all climates and on all kinds of soil; remarkably prolific, yielding an immense crop of fruit.

EXTRA LARGE
You will be astonished at the unusual size of the fruit and the rapid, easy growth. A great berry for jelly, pies and preserves.

SEND FOR SEED TODAY

Simply mail us 25c in coin or stamps, and we will at once send you, postpaid, three full size packets of seed, and also give you a three months subscription to a big Fruit and Garden Magazine.

NOVELTY GARDEN CLUB
7042 CAMPAU BLDG. GRAND RAPIDS, MICHIGAN

CLOVER BARGAIN

Get our wholesale prices before you buy. Save money. Get real quality. Also free catalog Farm Seeds tells 18 ways to make money in 1923, explains our new freight saving plan.

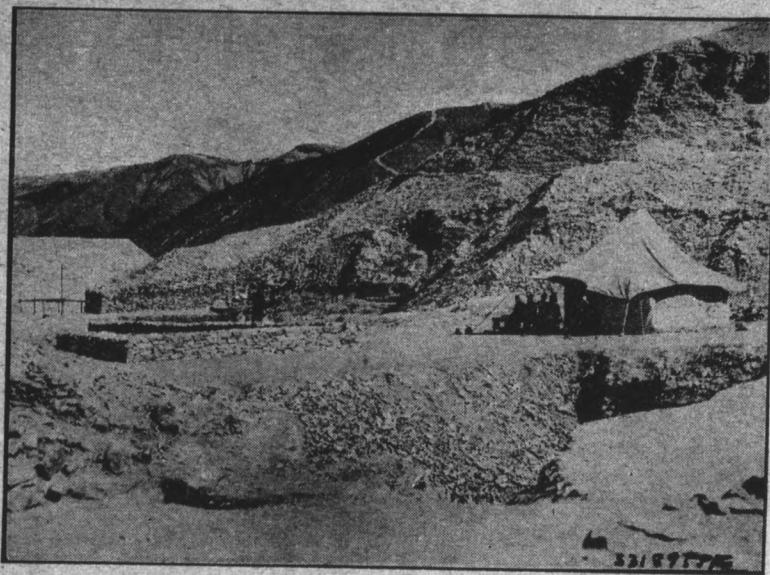
Galloway Bros. Co. Dept. 157 Waterloo, Iowa

IF you have a Farm or Farm Land for sale, let the Michigan Farmer find you a buyer through an advertisement in these columns.

WORLD EVENTS IN PICTURES



Miss Nell Walker, of Boston, gained twenty-five pounds on her recent cross-continental hike.



Egypt was all excited when the tomb of Tutenkhamen was discovered in the Valley of the Kings at Thebes. The tent of Howard Carter, the discoverer, is located immediately behind the tomb.



Hilda Ruckert, though grown up, can still play with her toes, even on skates.



When Germany failed to deliver coal to France, the French arrested officers of the Westphalian Coal Syndicate and set up their machine guns at headquarters ready for possible riots.



There is much conversation concerning the French occupation of the Ruhr, but we must not forget, as is shown here, that little Belgium is right on the job, too.



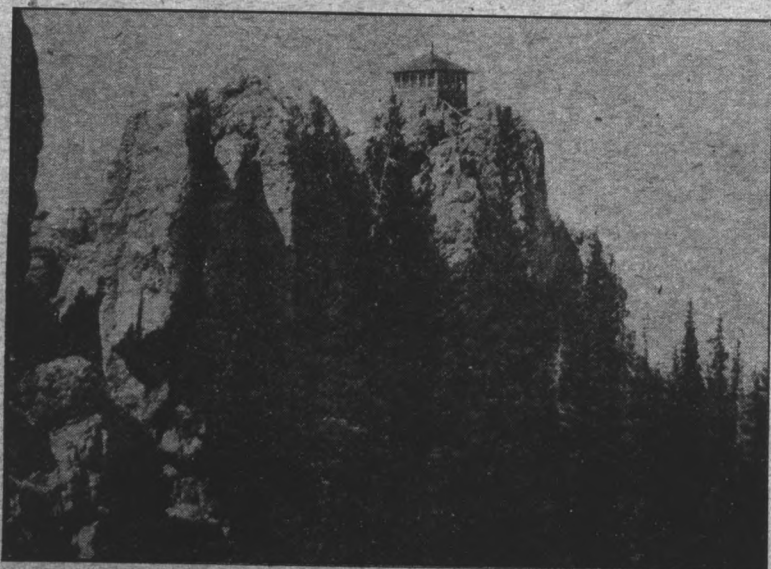
The "Arm mobile that has just been invented by an Oakland, Calif., resident, promises to be a great favorite with the kiddies.



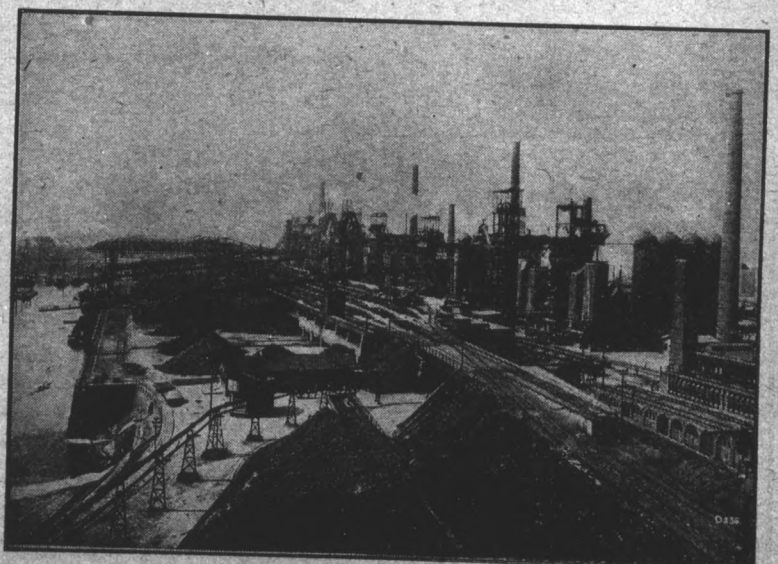
The Kaw Indians of Oklahoma have elected Lucy Tayiah Eads as elective chief of their tribe.



A real Egyptian princess, Azadea Charkowie, has made friends with this "combless chanticleer," shown at New York Poultry Show.



From this dizzy height, 7,240 feet above sea level, Mrs. Paul Beard watches for forest fires in four states. Her house is lashed to the rock by heavy steel cables.



This is some of the coal that France is after. The great Krupp works at Essen, Germany, use thousands of tons of coal a year and this plant is now occupied by the French army.

The Adventures of Hiram Masters

By LEROY W. SNELL

Reaching the depot again, hotter and sweatier than when he first had entered it, he glanced frantically about for Sarah, and to his relief observed her just coming out of the ladies' rest room.

It was then that Hiram had another bright idea. Slipping quickly into a seat he as calmly as possible waited her approach.

"Was I gone long?" Sarah asked.

"Wall, quite a spell," said Hiram, "but it don't matter. I was just thinking if you don't mind, I'd like to stop over one more day and take a chance to seeing the falls by moonlight. A feller was just a tellin' me about it."

"Why, I thought you were in such a hurry to get home."

"Well—er—you see, we won't be gettin' away agin right away and might's well see all we can while we're here."

And so it was settled, and it was a day late that they came back to the little home and the home-warming given them by their many friends of the village.

Some weeks later, sitting on the little porch at evening time, they were talking over the wonders of the trip, and Hiram told of his encounter with the city sharper. A silence followed this narration, which was finally broken by Hiram's low chuckle.

Mrs. Masters' chair ceased to rock, and looking up, Hiram beheld her standing close beside him.

"Hiram Masters there's one thing I might as well say now as ever. I don't hold no grudge, and I wouldn't speak of it before for fear of spoiling the trip, but if you ever tell a soul in Truxton about you goin' off and forgetting all about me there at Niagara, I'll never speak to you again as long as we live."

"Why! Why! er—Why!—Sarah!"

"It's all right now, Hiram, I don't lay up any feelins' about it, but don't you go telling it for a joke." And so saying, she stepped into the house, leaving Hiram gasping for a reply. Pretty soon from within came her voice in the kindly tones that had come to mean so much to him: "Hiram ain't you comin' in, you'll be catchin' cold and it's gettin' bed-time."

"In a minute, Sarah, in a minute," he replied. Slowly he filled his pipe again and puffed thoughtfully while the chirp of the late summer frogs made music in the distance, then finally knocking the ashes from his pipe:

"Well, confound it, Hiram Masters, you aint as smart as you thought you be." Then as he started indoors, "It

takes a woman to keep us old fellers from gettin' too hi-falootin'."

CHAPTER VIII.

HOT cookies fresh from the oven, and by crackey! how good they smelled to Hiram, just back from his morning trip to the post office. He tipped back a kitchen chair against the wall and eagerly reached for a sample. He was as fond of cookies as a kid and these were his favorite kind, "the humped kind," he called them; two thicknesses of cookie dough baked with a spoonful of jam in between.

"Letter fer you, Sarah," he said



tossing it upon the table.

Mrs. Masters wiped her hands upon her apron, adjusted her spectacles and inspected the postmark and handwriting eagerly.

"From Marion," she said, "And she's back in New York?"

Her hands trembled slightly and she sank nervously into a chair, only to drop the letter and rush to the oven, from whence fragrant odors were seeping. Just in time she rescued a square tin of delicious brown cookies then closing the oven door picked up the letter and resumed her seat.

Hiram, quietly reaching for his third sample noticed her hesitancy at opening it.

"Spouse—spouse she'll object?" he hesitated.

"I wonder?" and then slowly, determinedly as though it took great strength of will, she tore open the envelope.

(Marion Brown, Mrs. Masters' only daughter had spent but little of her time in Truxton during the last few years. After finishing high school, a wealthy aunt had offered to send her through college and later had taken her abroad. She was still in Europe at the time of her mother's marriage to Hiram Masters, the news of which reached her only after she had returned to New York).

Munching away upon another cookie Hiram watched closely his wife's face as she read the letter, saw a flush come into her cheeks, then the eyes

fill. She dropped the paper to the floor and fled the room.

Hiram picked up the letter, looked at it thoughtfully then read:

"Dear Mother:

"Oh! how could you do such a thing—Auntie and I were planning on bringing you here to live with us, but, of course, Auntie couldn't have that horrid uncouth farmer here. I want you to be happy, of course, but I do think you could have waited and consulted Auntie and me."

"I'm coming home right away. Hope it will not seem as bad as it does now. Lovingly,

Marion.

"P. S.—Auntie is so provoked she refuses to write at all."

Laying the letter carefully upon the

table Hiram went out into the garden. The cookie had lost its sweetness and he hurled it wrathfully at a marauding chicken.

It was not many days later that Marion arrived. Hiram met her at the station. She had taken his proffered hand, but the cold eyes of her had been filled with disdain, and Hiram shrank inwardly before them. He carried her bag, walked by her side the short distance home, and was no little awed by the trim little figure walking so primly, chin in air, and dark eyes fixed straight ahead.

When they had reached the cottage, Marion had flung herself into her mother's arms and both had burst into tears, much to Hiram's embarrassment. Thus he left them and slipping out of the house and up to the doctor's office, there to forget his trouble in a game of checkers with his old friend, now that his son, Harold, recently graduated from medical college, was taking over the bulk of his practice, found time hanging heavily on his hands.

With the announcement of Marion's return, there comes to the author of this history a temptation to go piping over the hills of youth and romance with the dark-eyed Marion and the young people of Truxton. The story would be well worth telling in full and, some time, I may relate at length the events which I must set down briefly herein.

How young Doctor Stoddard became

a frequent visitor at the Masters' home, and how he came to love deeply his former high school pal, now grown into beautiful, wondrous womanhood. Of how there had come to Truxton one other, a wealthy New York friend, an Edward Worthington, who had divided Marion's time with Doctor Stoddard, and received the greater portion thereof. Of his sneering allusions to Masters and of Marion's continued coldness to her stepfather. This coldness, although Hiram knew that it was chiefly due to her love for her mother, an unreasoning love, cut deep but he tried to excuse her to himself and for her sake ignored the slurs with which her guest sought to irritate him.

One day as Marion sat on the front porch swaying back and forth in the swing with Worthington seated upon the top step, the front gate clicked and Miss Abigail Holmes flitted up the walk.

"Is—is your Pa in, Marion?" she asked. "Tell him," she continued breathlessly, "tell him to look out for those crooks at the hotel. I don't know, but I heard—"

"Do you refer to Mr. Masters?" questioned Marion, with frigid politeness. "If so, I know nothing of his whereabouts or his personal affairs."

"Well, you needn't be so stuck up. I've heard how you've been breaking his and your ma's hearts with your snobbishness, and let me tell you he's just as good as you be or any of your folks, and a lot better'n some of your company. And if your Ma preferred to marry him and have a nice home, to being dependent upon you and your Aunt Lizzy, I think it's her business, so there!"

"Whew," whistled Worthington, "did you hear our funnygraph talk?"

But Miss Abigail turned her back and flounced out of the yard.

She had hardly turned the corner when another figure appeared, walking rapidly down the street, vaulted the low hedge, and young Doctor Stoddard hurried across the lawn.

"Where is Mr. Masters, Marion? I must see him at once."

"Gee! the old Rube's some sought after this morning," commented Worthington before Marion could reply.

"Mr. Worthington," said Harold, "Mr. Masters is a friend of mine and I must request you not to speak of him in that manner in my or in Marion's presence."

"Go ahead and request, I'll speak of him as I please."

AL ACRES—If the Soil Wasn't Loosened Up it Wasn't Slim's Fault.

—By Frank R. Lee.



"Then I'll have the pleasure of knocking you down."

"Harold!" cried Marion, alarmed, "please don't. Mr. Masters went away early this morning. I don't know where."

"Thanks," then glaring at Worthington he strode out into the street.

"Hump, seems that all the hicks you down here stick together."

"Yes, we do," Marion spoke with a new note in her voice and rising walked into the house without looking back, leaving Worthington staring with amazement.

Worthington shrugged his shoulders then languidly consulting his watch, descended the steps and walked a few blocks down the street, turned a corner and climbed into a waiting run-about. The driver started the engine and skirting the main streets, they slid out into the country.

CHAPTER IX.

MEANWHILE, Doctor Harold Stoddard was seeking Masters everywhere, not finding him he drove out of town, taking the north road. He ran a mile beyond the Masters' farm, turned, drove a half mile west, then driving into a wood ran his car as far as possible along the woods road. Leaving his auto in the wood, he thence proceeded on foot, following a line of sugar orchards and woodlands until he neared the Masters' farm then, following a fence and bending low so as to be concealed by the elderberry bushes and young cedars, he finally reached the edge of the Masters' sugar orchard. Cautiously he picked his way along now through the woods and down the overgrown pasture, dodging from hazel bush to hazel bush, and reaching, at last, the lower corner of the field, he peered around a last bush to behold a curious scene.

Down by the source of the little stream stood John Welling, spade in hand, digging, here and there, small shallow holes in the moist earth. On either side, watching his progress closely, was Edward Worthington, and the tall black-clothed stranger who had created so much comment in the village during the past summer.

Then Welling had stopped digging and the three contemplated together the last hole.

"There see that!" the stranger exclaimed. "See that, Worthington!"

"Yes, but are you sure it's oil?"

"Oil? Of course, look how it stays top of the water. Don't I know oil when I see it?"

"Looks good, all right, but do you suppose there's much of it?"

"Much of it? Why, man—and with it boiling right out of the surface—why, man, the ground is soaked full of it; and to think no one has located it before!"

Just then the doctor, listening, was seized from behind and hurled forward upon his face.

"Hey, quick, youse guys!" a voice called over him as he struggled under a compelling weight.

"Quick, youse guys. Here's a spy," and a moment later John Welling and the stranger were lending their aid to his assailant as he struggled and twisted and fought furiously.

Overpowered at last he was bound hand and foot and roughly turned up on his back.

"Ha!" sneered Worthington, who seemed ill-pleased at the turn of events. "Now, you sneak, what are you going to do?"

"Going to mash your head, you town in a hurry," and so saying he crook, and see you all in jail as soon as I get loose."

"Better wait until you do. Suppose feet.

you thought you'd be a little hero and save the heroine's old father from the villains?"

"I don't think Marion will thank you for cheating her father out of this oil land, do you? And you, Welling, you are a nice specimen of a son-in-law, after all that Masters has done for you, too."

"You shut up," Welling scowled. "It's none o' your business."

"Gentlemen! gentlemen! This gets us nowhere," the pompous stranger exclaimed. "I move you that the spy be carried to the sugar house which I observed in the woods close by and there be secured until such a time as our business arrangements may have been concluded."

The short, thick-set man stooped without a word and lifted Stoddard by the shoulders and with Welling taking his feet they carried him to the boiling house and threw him roughly upon the ground, then going out they closed and barred the door.

It was hours, so it seemed to Harold



that he lay thus, straining at his bonds and rolling about upon the floor in attempts to free himself. Then, giving up all hope of getting loose he tried to assume the most comfortable position possible, but the floor was of hard earth and covered with wood chips. His limbs ached miserably and his hands and feet were becoming numb.

Finally, listening, he heard approaching footsteps, nearer they came, stopped and came on again, then a voice near the door:

"Be ye in thar Doc?"

"Yes, who is it?"

"Me, Silas Herring. I see 'em put ye in thar and thought I'd hang around till they went, and then come and see if ye wanted out."

"Of course, I want to get out. Hurry, Silas, and get me loose."

"The' ain't no hurry. Them fellers gone to town right after they put ye in here; left in a hurry." Slowly Silas commenced to unbar the door.

"Then why didn't you come and let me out at once?"

"Been studdin' on't. Don't pay to go off half-cocked. I says, 'Sile,' I says, 'let's set down a minute and think what's best to do.'"

"Well, don't keep thinking. Come in here and cut me loose."

"All right, Doc, all right, don't hurry me," and so saying Silas unbarred the door and stepped in. Producing a jack knife he very slowly and deliberately cut the cords upon Harold's wrists and legs.

"Handled ye kinder rough, didn't the?" commented Silas. "That's a dumb good knife I'm using, don't guess ye'd want a trade?"

"No, thanks, Sile," Harold replied. "Have you a horse here?"

"Wanter trade horses?" Got a good un'er hum."

"No! No! I just want to get to town in a hurry," and so saying he limped out of the boiling-house, walking faster as the numbness left his feet.

(To be continued).



The Bell System's transcontinental telephone line crossing Nevada

Highways of Speech

Necessity made the United States a nation of pioneers. Development came to us only by conquering the wilderness. For a hundred and fifty years we have been clearing farms and rearing communities where desolation was—bridging rivers and making roads, civilizing and populating step by step, three million square miles of country. One of the results has been the scattering of families in many places—the separation of parents and children, of brother and brother, by great distances.

To-day, millions of us live and make our success in places far from those where we were born, and even those of us who have remained in one place have relatives and friends who are scattered in other parts.

Again, business and industry have done what families have done—they have spread to many places and made connections in still other places.

Obviously, this has promoted a national community of every-day interest which characterizes no other nation in the world. It has given the people of the whole country the same kind, if not the same degree, of interest in one another as the people of a single city have. It has made necessary facilities of national communication which keep us in touch with the whole country and not just our own part of it.

The only telephone service which can adequately serve the needs of the nation is one which brings all of the people within sound of one another's voices.

"BELL SYSTEM"



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy, One System, Universal Service, and all directed toward Better Service



Increases
Vineyard
Profits

The Syracuse Grape and Berry Hoe is the best tool ever designed for culture of grapes and berries. Kills weeds and stirs up soil under vines and close to roots so that air and plant food are available. Easily guided in and out around posts and vines. Blade reversible to throw soil to or from vines. Cultivator attachment extra. Sold by John Deere dealers.

FREE BOOK. Write today for booklet describing this implement. Address John Deere, Moline, Ill., and ask for Booklet GB-322.

JOHN DEERE
THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

GROW THE NEW
MAMMOTH Cooper



liberal guarantee and long experience protect you. Prepare now, and you will reap big profits next year from the growing demand for good berries. Our valuable catalog, with color illustrations, tells the whole story. Write for your copy tonight. Stevensville Nurseries, Box 55, Stevensville, Mich.

The big, healthy, vigorous strawberry without a fault. Gives lasting satisfaction. Nets many of our customers \$1500.00 an acre. Beautiful color, and a flavor you can't forget. It to 35 fill a quart. Resists drought. Bears early and late. Many growers will discard all other kinds. We also save you money on the most thrifty and profitable varieties of Strawberry, Grape, Raspberry, Blackberry, and Dewberry plants. Grown in the famous Michigan Fruit Belt. Packed to reach you fresh and vigorous. We ship direct to you at wholesale prices. Special rates if you order now. Our

For More Berry Money

12 Apple Trees
4 ft. average
\$3.15

My new catalog—wonderful book in color—best ever published—a big help to you in selecting Trees, Shrubs, Plants, Fruits, Evergreens, etc. Filled with suggestions and collections for landscaping your property.

\$1 BARGAINS
contains many bargains like the following: 100 Strawberries, \$1.20 Red or Black Raspberries, \$1.12 Blackberries, \$1.12 Concord Grapes, \$1.6 Indian Currant, \$1.3 Roses, \$1.5 Snowberry, \$1. Many other wonderful bargains in free catalog. Write today.

Earl Ferris Nursery Co.
605 Bridge St., Hampton, Iowa

100 Evergreens Northern Grown Norway Spruce \$2.50

MAPLE SYRUP MAKERS

I CAN save you money on any size of syrup can. Write me for prices stating quantity needed. Must ship 100 to the crate.

Louis P. Lamb,
Vermontville, Mich.

The Eclipse Spray Pump is simple in construction, durable and efficient. Made in several sizes to meet the various needs.

SPRAY THE MORRILL & MORLEY WAY
ASK FOR CATALOG
MORRILL & MORLEY MFG. CO.
Box 51 Benton Harbor, Mich.

NEW WEEKLY BARGAIN CLOVER
Don't buy until you get our low wholesale money-saving prices, also free catalog Farm and Garden Seeds tells 15 ways to make money in 1923.
Galloway Bros. Co. Dept. 187 Waterloo, Iowa

Please Mention The Michigan Farmer when writing to advertisers

Champion
Double-Ribbed Core
for your protection



Note the Improvement in Your Engine's Performance

From the day you equip every cylinder with dependable Champion Spark Plugs, you will note improved performance in your engine.

Everywhere it is recognized as a better plug for motor cars, trucks, tractors and stationary engines. More than 30,000,000 have gone into service in the past year.

Get the new Champion plug with the Double-Ribbed core—and buy by the set at least once a year for every engine.

Look for the Double-Ribbed core. Buy Champion spark plugs by the set. A type and size for every engine. Any dealer interested in selling you the best spark plug satisfaction will recommend Champions

Champion Spark Plug Company
Toledo, Ohio

Champion Spark Plug Co. of Canada, Ltd., Windsor, Ont.



Champion X is the one spark plug recognized as the standard for Ford cars, trucks and tractors. Millions are in daily use. For sale everywhere.

CHAMPION

Dependable for Every Engine

GOOD FARMING PAYS

Every farmer wants to save labor, time, seed, horse-power, and raise bigger crops. The WESTERN, 3 machines in 1, will do all of this. It has proven it to thousands. It pulverizes and packs as deep as plowed, leaves a loose mulch on top, makes a perfect seed bed in one operation. Get 5 to 10 bushels per acre more by rolling winter wheat and other growing grain in the spring, whether soil is loose or hard crusted and cracked. The WESTERN has no equal for this work or for covering clover and grass seed.

MADE IN 13 SIZES, 9 & 3 SECTIONS



Get our FREE Catalog. It proves our statements and work, why it produces better results than any other roller. Contains letters from farmers using it and other valuable information. "Worth its weight in gold." Our low price direct will surprise you. Write today for book and price, freight paid.

WESTERN LAND ROLLER CO., Box 132 HASTINGS, NEBR.

CLOVER

Adapted to
Climate and Soil
Isbell's Bell Brand Clovers—red or alsike—are the purest obtainable. They are all Michigan-Grown—hardiness and adaptability to severe climatic conditions are bred into them—the result of 44 years of success in growing seeds of any field seeds to show quality sent on request with Isbell's 1923 Seed Annual. Big savings on sterling quality direct-from-grower seeds. Write today.

S. M. ISBELL & COMPANY
719 Mechanic St. (42) Jackson, Mich.

Good Farms At Small Cost
Virginia Farm lands can be bought for the interest many pay on mortgages. Mild climate, good soil, and nearby markets. (Save freight) Write for new Handbook which gives details of opportunities for Stock Raising, Dairying, Fruit Growing, Poultry Raising, and General Farming.

G. W. KOINER, Com. of Agr.
Room 134 Capital Bldg., Richmond, Va.

New Idea Spreaders



PLAY fair with your farm.
Nourish your land—regularly—with Nature's greatest soil-food, stable manure. The work is easy with the genuine

NEWIDEA

The Original Wide Spreading Spreader

Easy to load; easy to haul—and spreads the manure evenly, in a thin, uniform blanket. Positively the most efficient and most serviceable spreader built.

Why experiment with imitations? Write today for money-saving prices—and copy of New Idea Gold Seal Guarantee.

The New Idea
Spreader Co.
"Spreader Specialists"
Coldwater, Ohio.

WRITE TODAY FOR SPECIAL PRICES

YOUR NEIGHBOR HEADS

It is a welcome visitor in 500,000 homes. News, stories, pictures, stunts, jokes, questions answered. You'll like this paper. Send \$1 for 1 year, or 15c for three months trial—13 big issues. Address The Pathfinder, 821 Langdon Sta., Washington, D. C.

The Use of Ability

Our Weekly Sermon—By N. A. McCune

I OPENED a new book the other night, which is a delight. It is by that most interesting and facile of writers, Henry Van Dyke, and is called, "Companionable Books." (The publisher is Scribner's, New York). I wish that everyone who has any liking for literature, or the finer things of life, might read it. There is a chapter called "The Book of Books." Of course, that is about the Bible. The Bible is always the book of books. As Sir Walter Scott put it when dying, "There is only one book."

As I thought of this lesson on the pounds, I could not but think of this book by Van Dyke. He says, "The fountain head of the power of the Bible in literature lies in its nearness to the very springs and sources of human life—life taken seriously, earnestly, intensely; life in its broadest meaning, including the inward as well as the outward." He gives a list of phrases which are common in our language, which sweeten and invigorate it all taken from the Bible: "A good old age," "the apple of his eye," "gathered to his fathers," "a land flowing with milk and honey," "the windows of heaven," "the fountains of the great deep," "the valley of decision," "living fountains of waters," "one little ewe lamb," "thou art the man," "as the sparks fly upward," "a still small voice," "the wings of the morning," "stolen waters," "a dinner of herbs," "apples of gold in pictures of silver," "the little foxes that spoil the vines," "the rose of Sharon and the lily of the valley," "the salt of the earth," "the burden and heat of the day," "the signs of the times," "a pearl of great price," "what God hath joined together," "the children of light," "a labor of love," "entertain angels unawares," "faithful unto death," "crown of life."

We might add to this list from the lesson of today, that common expression, "to him that hath shall be given." Van Dyke speaks of the "strange power of the book to nourish and inspire, to mould and guide, the inner life of man."

THE Bible has entered into the very marrow of life more than we suspect. The Authorized Version, which is still more commonly used than the American Revised (though that is a splendid piece of work, and is especially to be recommended for the use of young people, was the result of the work of forty-seven scholars in England, who began their work in 1604 and finished it seven years later. Of all the narrow, opinionated and useless kings that ever rattled around on a throne, James the First would come in for first honors. But he did one big thing, he authorized the translation of the Bible, hence its names, "The Authorized Version, Appointed to be Read in Churches." (That isn't the only place it should be read).

The sub-heading was a natural one. Only a small per cent of the people could read, Bibles were expensive, and hence the people gathered in the churches, where a Bible was chained to the pulpit. Someone with a good voice, who could read intelligently, would stand and read from the Psalms, or the wise and witty sayings of Proverbs, or the wonderful story of the death and resurrection of the Christ, while the crowd stood (not sat) in silence and drank it in. It entered

into the blood of the English and the Scotch, it was interwoven into their literature, and became part and parcel of their daily speech. No one would claim that the English and Scotch are perfect, but whatever greatness they have attained has been attributable to an immense degree to the way in which the two peoples absorbed the Bible.

BUT our subject is on the use of ability. No one has ever written or spoken with such powerful effect on the subject as has our Lord. One almost trembles, as he thinks of that third servant, who did nothing with his ability, but bury it in a safe place. And one's pulse quickens as he pictures the first man receiving the reward of his faithfulness, in being assigned to ten cities. Some one has described this parable as "the story of genius." It drives home the fact that most of us have tremendous power for good, and that we are responsible for the use of it.

Now, let us hasten to add that not everyone has as great ability as everyone else. That is the teaching of some modernists, when they reduce all men to the same level, all are to get the same wages, none are permitted to begin work one minute sooner than the rest, or work one minute after the others have quit. All are reduced to the dead plane of uniformity. Each individual is a machine like every other machine. The idea of a man taking an interest in his work, or working longer than the others because he wants to, or of perfecting himself so that he can command more, all this is an abomination to some organizations with which most of us are familiar.

But this is diametrically opposed to the spirit and the letter of the teaching of the Master Man. He taught that the only supreme will and personality in the universe is God, and God has the right to create some men of ten talents and some of five, and some of one-third of one talent, and some apparently with scarcely any talents at all. And when these men get at their daily tasks it is more evident that some are more capable than others, and were intended to move in a larger sphere of influence than the others.

But you will note that it depends on faithfulness, after all. The ten-talent man (a talent was worth about a thousand dollars) had to work hard in order to get results. He could not rely on his genius alone. There was nothing in it but hard work. The most gifted men have often been the hardest workers. Things that seem to come to them so easily have come, after all, as the result of constant toil.

ANOTHER point that comes out is that is it not necessary to rebel against the use of ability in order to be condemned. All that is necessary is, to do nothing. One need not mine his farm with dynamite bombs, in order to reduce its value. Simply let it alone. The weeds, the weather, tramps and tourists will do the rest. The soul passes into a state of useless vacuity if left alone long enough.

SUNDAY SCHOOL LESSON FOR FEBRUARY 25.

SUBJECT:—Parable of the Pounds:
Luke 19:11-27.

GOLDEN TEXT:—He that is faithful in a very little is faithful also in much.

Winter brings the farmer time to think. Good books give him something to think about.

More About Moore

Some Facts About the Man Who Invented the Harvester

By Jason Woodman

IN the Michigan Farmer of January 26, there is an interesting article by L. A. Chase, in regard to the Moore harvester, first used on Big Prairie Ronde in an early day.

My grandfather came to Van Buren county in the spring of 1835 and settled in Antwerp township, which corners on the southeast with Prairie Ronde township, Kalamazoo county. At that time my father was a youngster of seventeen. Schoolcraft for many years was the agricultural center of southwest Michigan, and father, a frequent visitor at that place, was well acquainted with the earlier inhabitants on the surrounding prairie and with its agricultural history.

Two Moores Work Together.

Andrew Y. Moore owned and operated one or more of the machines designed by Mr. Hiram Moore and those working with him. Andrew Y. Moore lived at that time on his farm near Schoolcraft. Both of the Moores were prominent men in Kalamazoo county and probably were brothers.

During the years 1888 to 1894 my father wrote a series of articles entitled "The Early Pioneers," which were printed in the local papers. In one of these articles he says of this harvester, probably one of the earlier ones constructed, "A harvesting machine which cut, threshed, cleaned and bagged the wheat as it passed along, was operating in that field; it cut a swath eight feet wide and was hauled by twelve horses. It was not a perfect machine and it did not pay to run it. Mr. Andrew G. Moore was the owner of the machine. He went to California in an early day and it was through his genius that the great harvesters now in use there were perfected. He died in Fresno county not long since, nearly ninety years old."

The Second Machine.

The machine referred to in my father's article was being operated in a ninety-five-acre wheat field on the Daniels farm near Schoolcraft. Father was one of a number of Paw Paw young men working in the same field as harvest hands.

The late Henry Bishop, of Kalamazoo county, wrote an article on these harvesters, from which I quote the following: "The second one of these machines built after it was perfected, was taken to California by George Leland, where it was made to work more profitably in that dry climate, where wheat will stand up longer after it is fit to cut."

As a matter of fact, the Moore harvester was not suited to Michigan climatic conditions for it could only be used after the wheat was dead ripe and fit to thresh. Rains and the soft ground often interfered with its operation. The ripe grain soon began to "crinkle" or break down, after which the harvester could not gather it without a large percentage of waste.

Leland Perfects Sickle Bar.

George Leland, who went with the machine to California, lived in St. Joseph county and had a blacksmith shop on the bank of the St. Joseph river a few miles southeast of Prairie Ronde. He was an expert mechanic and did the blacksmithing on the Andrew G. Moore harvesters. Leland perfected the sickle bar. As originally designed the upper portions of the fingers were curved over behind the knife and bolted to the frame of the bar, holding the knife in place. This arrangement did not work satisfactorily; pieces of straw and wheat leaves would wedge in behind the knife, causing frequent clogs, which made it necessary to stop the machine for the purpose of clearing out the rubbish around the knife.

Leland conceived the idea of a slot in the bar with over-clamps to hold the knife in place, while the upper part of the fingers were straightened out, leaving the rear open so that bits of straw and other refuse would work out. He constructed a bar and knife on this principle and it worked perfectly. A son of George Leland who was a well-grown boy when his father made the sickle bar and had personal knowledge of its construction, told me this story. I was well acquainted with the younger Leland, and some years ago made notes from his dictation concerning the construction of this cutter bar and knife. Mr. Leland spent his life on a St. Joseph county farm near where his father's blacksmith shop was located.

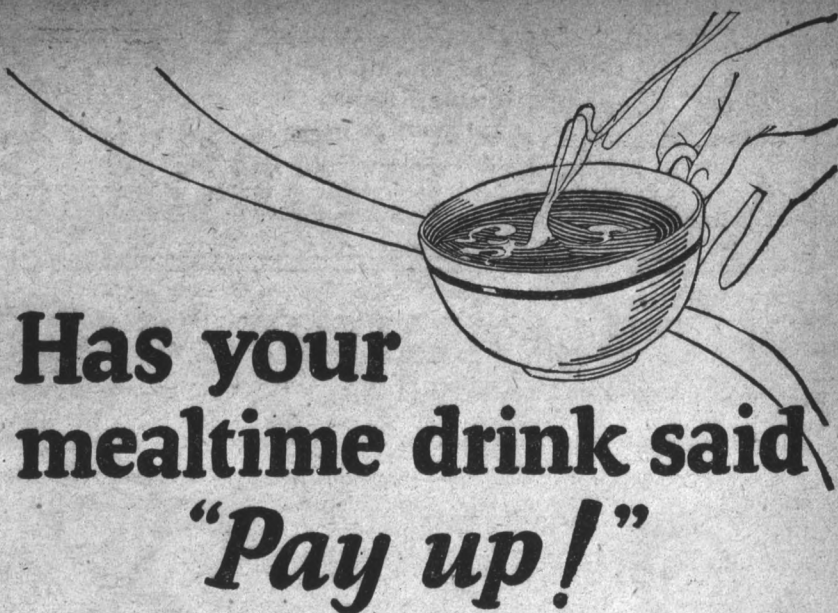
McCormick's Watch Moore.

Mr. Bishop, in his article also said, "The inventors of the first reaping machine, the McCormicks, had experts watching Moore's invention and as soon as he had perfected the cutting part adopted it as their own and had it patented." Hon. O. H. Fellows, one of the prominent farmers on the Prairie, was a lad at the time Andrew Y. Moore was operating his machine near Schoolcraft. One day, while the boy was watching from the side of a field on the Duncan farm the machine harvesting wheat, he was approached by a party of men, who asked him numerous questions concerning its operation. As Mr. Fellows at that time was only a boy, these men talked freely with each other in his presence, their conversation indicating clearly that they were in McCormick's employ. They did not approach the men working with the harvester. But after watching it work for a considerable length of time, drove away. The incident made a deep impression on the youngster's mind and in later years he related it to his family. His daughter, Miss Anna Fellows, of Schoolcraft, told the story to me when I was in that village a short time ago.

Wet Ground a Hindrance.

On my way home from the Schoolcraft visit, I met in Kalamazoo an old-time friend, Mr. W. F. Montague, president of the Kalamazoo Pioneer society. He added to my day's accumulation of pioneer lore another tale which is of interest. On Grand Prairie west of Kalamazoo, near the Montague homestead, lived for many years Benjamin Drake, one of the county's earliest settlers. Mr. Drake owned a large farm and was the user of one of the earlier harvesting machines put out by the McCormick company. It worked all right when the ground was dry, but the tire on the "Bull" wheel was smooth and when prairie dirt is wet it is about as slippery as soap. The first time Mr. Drake endeavored to cut wheat with his new harvester the ground was moist, the bull wheel, instead of revolving, slid over the surface of the prairie dirt, and, of course, the cutter bar and other working parts geared to the wheel did not operate. Mr. Drake took the tire to a Kalamazoo blacksmith shop and had sections of it cut through on three sides and the flaps thus created bent outward, making "lugs" on the surface of the bull wheel. This improvement gave the wheel the necessary grip on the earth and the machine worked satisfactorily. Later the McCormick company, learning of Drake's device, sent a man to ascertain its value. The result was that the company presented Mr. Drake with a new reaper and appropriated his invention.

The modern binder, the Western "Header," the California "Combine," (Continued on page 277).



Has your mealtime drink said "Pay up!"

A good many people have had that message from coffee or tea after the drug, caffeine, has had its effect upon nerves or digestion.

Frequently the message comes at night, when nerves won't quiet down and sleep won't come, after the dinner cup of coffee.

There's no unfriendly after-notice from that good cereal beverage, Postum.

Postum delights the taste, gives comfort and satisfaction, and is free from any possibility of harm to health.

Try Postum with your meals for a few days and let the whole family, the children included, share in its appetizing, invigorating goodness. It will bring better nights and brighter mornings.

Your grocer sells Postum in two forms: Instant Postum (in tins) prepared instantly in the cup by the addition of boiling water. Postum Cereal (in packages) for those who prefer to make the drink while the meal is being prepared; made by boiling fully 20 minutes.

Postum FOR HEALTH "There's a Reason"

Made by Postum Cereal Co., Inc., Battle Creek, Mich.



When Children Cough Use Musterole

When you are awakened in the dead of night by that warning, croupy cough, get up and get the jar of Musterole.

Rub the clean, white ointment gently over the child's throat and chest, and then go back to bed.

Musterole penetrates the skin with a warming tingle and goes right to the seat of trouble.

Will not blister like the old-fashioned mustard plaster and it is not messy to apply.

Made from pure oil of mustard, Musterole takes the kink out of stiff necks, makes sore throats well, stops croupy coughs and colds.

Sold by druggists everywhere, in jars and tubes, 35c and 65c; hospital size, \$3.

The Musterole Co., Cleveland, Ohio
BETTER THAN A MUSTARD PLASTER



Strawberry Plants \$3 a 1000 and up. Concord grape variety. All state inspected and guaranteed. Free booklet. Westhouser's Nurseries, Sawyer, Michigan

Farm Bargains THROUGHOUT 33 STATES — Just Out New Catalog

Our illustrated Guide, carefully planned to save you time and money, describes farms throughout 33 states — stock, tools, furniture, seed included — ready for spring planting. 35,000 sales prove helpfulness of Strout Service.

\$2000 secures 195-acre crop farm near R.R. town — splendid markets; 120 acres machine-worked fields — variety fruit; new 2-story house, furnace, bath-room, 100 ft. barn, silo. Retiring owner's price \$13,200. horses, 8 cows, full equipment included. On another page see 128 acres with 1400 fruit trees, only \$6500. horses, cow, hog, poultry, crops included; good 7-room house, 60-ft. barn, garage, part cash. Or read about 60 acres for \$5000 down; furnished house, piano, horse, cows, crops; barn, poultry house. Hundreds of others. Copy free. Write today. STROUT FARM AGENCY Dept. 20, Marquette Bldg., Chicago, Ill.

Sell Tires and Tubes

We want a man with a car in every open territory to sell Tires and Tubes at lowest prices possible on quality merchandise. Sell on salary and expense basis or straight commission basis with liberal weekly drawing account.

ACT TODAY
A Better Opportunity Cannot Be Found. To obtain particulars at no obligation to yourself write at once to Sterlingworth Tire Company 5215 Main, East Liverpool, Ohio



IT'S REAL VALUE.

Lovely, new genuine Sterling Silver Ring, beautifully engraved with horseshoe and dainty scroll design, meaning Good Luck and Happiness to the fortunate wearer.

Ring is pure Sterling Silver, will last a lifetime, ever ring guaranteed. Send your name and address and finger size, when ring arrives pay postman only \$1.98 and postage. You run no risk, money refunded, so order at once. This is your opportunity. McDOWELL COMPANY, B-627, Providence, R. I.

Please Mention The Michigan Farmer When Writing to Advertisers



Woman's Interests



The Coming Michigan Farmer Family

MUCH attention, time and space has been devoted to the gathering of bits of information regarding our oldest readers. The results were very interesting, and it was found that there were residents of this bay state who have been continual readers of this journal back to within a few years of its first publication in 1843. However, this is as the bride of yesterday and the bride-to-be Or, we might say, the reader of yesterday and the reader-to-be. The read



First Prize, Max Beach.

ers-to-be are the babies of the Michigan farmer families. Some of the Better Babies of these families appear on this page.

Two weeks ago a request was printed in this department for the pictures with descriptions, weight, length, age, etc., of the better babies of the Farmer family. Several replies were received. It seemed so unusual to have so many babies about, and yet all was so quiet. The replies were so numerous that by the end of the week it got to be:

Babies to right of me,
Babies to left of me,
Babies in front of me,
Study and wonder.
Stormed at with smiles and dimples,
Throbbing and hot my temples,
Charge they with hands uplifted;
And into my very heart
Ride these two hundred.

But in the final summary of weight and measurements the following were selected:

First prize, Max Beach, son of Mr. and Mrs. B. F. Beach, Pontiac, Michigan, two years eleven months, weight thirty-two pounds, and height thirty-seven inches.

Second prize, Julia Thill, daughter of Mr. and Mrs. Frank Thill, Fayette, Michigan, seven months old, weight eighteen pounds, height twenty-seven inches.

Third prize, Melva Armstrong, daughter of Mr. and Mrs. J. H. Armstrong, Bad Axe, Michigan, six months old, weight eighteen and a quarter

pounds, height twenty-five inches. The other prize winners are given in their respective order:

Warren Wood, son of Mr. and Mrs. John Wood, Jr., Kingsley, Michigan, age seven months, weight twenty pounds, height twenty-six inches.

Donald Clark Corwin, son of Mr. and Mrs. Clark Corwin, Coldwater, Michigan, age seven months, weight twenty-one pounds, height twenty-six inches.

Dennis Laverne Kortering, son of Mr. and Mrs. Herman Kortering, Holland, Michigan, age nine months, weight twenty pounds, height twenty-six inches.

Dorothy Blackmun, daughter of Mr. and Mrs. C. W. Blackmun, Buchanan, Michigan, age one year, weight nineteen pounds, height twenty-eight and one-half inches.

Sumner C. Dreu, son of Mr. and Mrs. Arthur Dreu, Howell, Michigan, age six months, weight sixteen and one-half pounds, height twenty-four inches.

Anna Johnson, daughter of Mr. and Mrs. O. J. Johnson, Vermontville, Michigan, age eleven months, weight twenty-one and one-half pounds, height twenty-eight inches.

Faith Hendricks, daughter of Mr. and Mrs. John Hendricks, Zeeland, Michigan, age fourteen months, weight twenty-four pounds, height twenty-eight inches.

Many of them surpassed the average standard of health and length, while not in weight; and some so greatly surpassed in weight according to

By Martha Cole

the right kind of body, as well as with the right kind of mind. It is quite impossible for the mind to be mentally vigorous when the body is not physically strong. Many a weakened body is the result of improper food.

The first three or four months of baby's life are ones which mean much for the future health of the child. The mother's milk is the only food that was ever meant for the young babe, and all other foods are poor substitutes at their best. If the mother finds she cannot supply the needed amount of food, a bottle feeding given regularly as a supplement will usually overcome this difficulty. In no case should she give up breast feeding as long as it is possible for her to continue and hold her own health.

The nursing mother's diet is the one thing that seems oftenest to go wrong. Everyone she meets tells her of some article of food she should not eat. If she obeys all the advice she receives, this poor mother has little left in her dietary which she dare to eat. A good rule to follow is all that agrees with the mother will agree with the baby.

The mother should avoid all excess in eating, and that being done, to eat the food to which she was accustomed before baby came, if it gives her no indigestion. The diet should be a general one and all monotony should be avoided. Milk may be drunk between meals and with them, except where it is taken to the exclusion of, or spoils the appetite for other food. A light lunch taken between meals to supply

ments. Even then several formulas must be thoroughly tried before baby arrives at a satisfactory and agreeable diet.

One mother, who is about to wean her baby, asks which is the best kind of bottle to use. By all means, the graduated one with a wide neck so it can be easily and thoroughly cleaned is the best. Immediately after feeding, clean the bottle by first rinsing in cold water, then let it stand filled with bor-



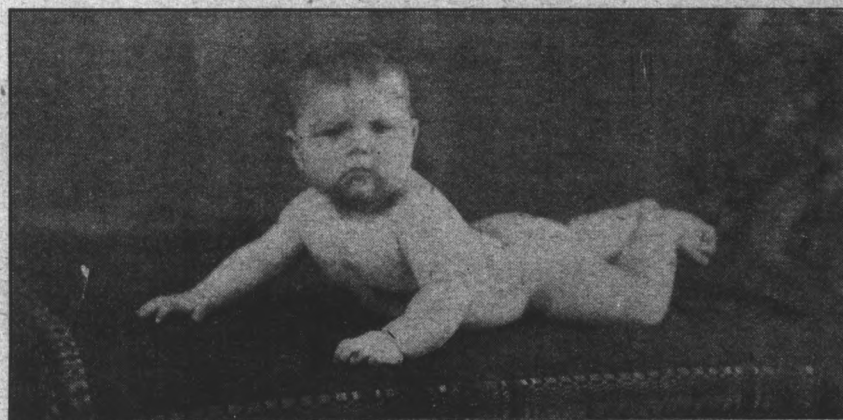
Second Prize, Julia Thill.

ic acid solution. Finally wash in scalding soapsuds and rinse in clean hot water several times, and set to drain.

A young mother from Ludington says that her baby has hiccoughs so much. Hiccoughs are not serious, as a rule, but are uncomfortable and distressing. They are caused by a spasmodic contraction of the diaphragm and a simple relief is to place a few grains of sugar upon the end of the tongue. A few drops of hot water given very slowly will usually cause the cessation of these paroxysms, also.

A young mother of twenty from the northern part of the state is worried about her baby's eyes, for they are sometimes inflamed. She wishes to take the best of care of them, that they may be strong when the child starts to school. The first care of the eyes rests with the physician who puts antiseptics into them to prevent any infection that they may get during baby's introduction into the world. After that the eyes should be washed out each morning with a clean piece of cotton soaked in fresh solution of boric acid, using one level teaspoonful to a cup of boiled water. This is kept up during the first year. Any discharge of the eyes should not be tampered with, but the physician consulted at once. The eyesight is a far too precious thing to be treated lightly.

The baby always seems to be fascinated by a strong light, so he should not be laid where he can stare at one when he is small. The sun should always be shaded and not allowed to shine directly into his unprotected eyes.



"Quite Serious." Third Prize, Melva Armstrong.

height and age that their health and strength, in many cases, were enervated by this excess of plumpness.

The care and discipline that has been required to bring these tiny lives as well as others, up to the standard of perfect health has raised a problem in mother's mind many a time. The average mother is anxious to send her children out into life equipped with

the needed bodily nourishment is advisable if it does not retard the appetite at meal time.

Books may be written on artificial feeding of infants, but when it is necessary to resort to this measure it is more satisfactory as well as congenial to baby's health to consult the family physician, and after diagnosing the case, for him to prescribe food require-



Given in their Order of Winning, these Smiling, Farm-raised Babies Are: Warren Wood, Donald Clark Corwin, Dennis Laverne Kortering, Dorothy Edna Blackmun, Sumner C. Dreu, Anna Evalena Johnson and Faith Viola Hendricks.

Inasmuch as the early health and happiness as these tiny beings portend the future health and happiness of our state and nation every effort should be put forth to grow better and better babies. With apologies to Dr. Coue, a good slogan which we wish might prove true for every baby in the great human family is, "Day by day in every way, I am growing bigger and better."

PUDDING BY RADIO.

HINTS TO HOME-MAKERS.

BY J. J. O.

WHEN cooking macaroni or cereal, a tablespoon of butter put in before it starts to cook will greatly lessen the tendency to stick to the vessel.

When framing pictures with passe-partout use clothespins to hold the glass, picture and cardboard together. Then, as you paste the passe-partout on place the clothespins over it, about two inches apart, until dried, and you have a neat job.

If you wish to have a growing plant as a centerpiece, and do not wish your table surface marred, cut a piece of rubber sheeting the size of the centerpiece and place under it.

After a tablecloth has been ironed, instead of folding it as usual, fold once through the center then roll on a stick or a newspaper.

Before seeding raisins if the hands are rubbed over with a little butter or lard one will find it an easier and pleasanter task.

Put snaps on one side of your ironing board cover and fasteners on the other. When laundering same, unfasten and remove with no annoyance—it is easily adjusted by pressing the snap fasteners together again.

TESTED RECIPES.

Maple Sugar Pie.

COOK one cupful of water with one cupful of grated maple sugar, and one teaspoon of butter until syrupy. Mix two tablespoons of flour to a paste in cold water, add two well beaten eggs and a bit of salt and stir into the syrup. Cook until thick, flavor with vanilla extract, pour into a baked crust and bake in a hot oven until firm—about five minutes. Serve with whipped cream.—L. M. T.

Barbecued Ham.

Have the ham cut very thin and broil quickly or pan-broil it. Arrange on a hot platter and to the fat in the pan add a teaspoonful of sugar, a teaspoonful of home-made mustard, a dash of red pepper and four table-spoonfuls of vinegar. Stir until bubbling hot, pour over the ham and serve.—L. M. T.

French Cream.

This is a little recipe which I think is fine. It is easily prepared and not expensive, and makes a fine dessert for a hearty meal.

The white of one egg, one cup of sugar, three tablespoons of grated apple, (tart apple is best). Beat thirty minutes and gradually stir in apple. Flavor with vanilla and put whipped cream on top. Use a large bowl as it will make dessert for eleven people. If one wishes they may add chopped nut meats before the cream, but it is very good without.—Mrs. D. O.

Lady Fingers.

One cup sugar creamed with half cup of butter or other shortening; half cup milk; two eggs; two teaspoons of baking powder; half teaspoon of salt; any seasoning that will cook out.

Beat until light before adding the baking powder. Then enough flour to

WE have had the pleasure of a radiophone at our home for the past three weeks, installed by our son who is a government radio engineer. I wish I could pass on to the Michigan Farmer readers all the fine lectures, music and the like which we have enjoyed.

This is a recipe for a pudding I received from a Chicago domestic science teacher by radio, which I have dubbed "radio pudding."

Radio Chocolate Pudding.—Place in a mixing bowl one-half cup of sugar, butter the size of a walnut, one egg, and cream well together and add one-half cup of sweet milk. Place in the flour sifter one cup of flour, one teaspoon of cocoa, one teaspoon of baking powder. Sift into other ingredients, mix gently and steam for two hours.

Pudding Sauce.—One egg white, beaten stiff. Add yolk and beat again. Butter the size of a small egg, one-half cup of sugar. Cream together well and then add slowly one cup of whipped sweet cream. Stir well and season with vanilla.—Mrs. A. P. M.

HOW I MAKE MY RUGS.

I TAKE all the old clothes that I cannot use for anything, and I use these in making crocheted rugs. I also use old plush coats for this purpose. First I rip all the seams and then I place them together so they will fit to make the shape desired. Then I take those old bags that are of no use. I trim the ragged edges off and cut them to fit the shape the coating is cut. About two thicknesses of bags sewed together makes it softer and holds the coating stiffer so the rug won't roll up under the feet. Sew all together with common cord you get from the store on packages. These make good porch mats as they gather all the sand very easily.

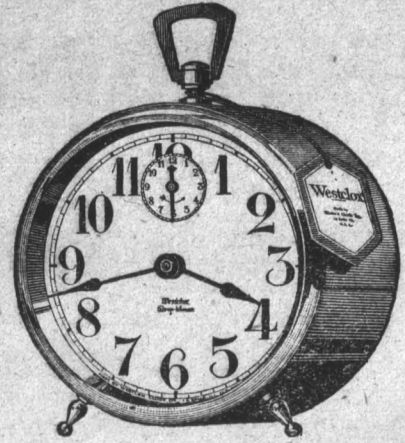
When I make crocheted rugs, I tear all my material in strips about three-quarters of an inch wide and, instead of sewing them, I tie them. With a little care and experience this can be done and the rug will look as neat as when sewed. Overlap the two ends to be joined about an inch and with point of scissors make a cut about a quarter of an inch long in the center of that overlapped. Then take the end of the strip being adjoined and poke end through this cut. Draw down firmly. This will make a neat, firm knot with a great saving of time. If one is careful in combining color, very attractive and inexpensive rugs can be made.—Mrs. W. C.

MISINTERPRETATION.

THE signature to the article "Crude Oil for Rats," published in a recent issue of this journal, was M. A. C. As interpreted by some, this does not mean the Michigan Agricultural College, nor the Missouri Agricultural College, but the initials of the correspondent sending the article. To avoid further confusion in the future, we will use only the initials M. C. for the correspondent.



Westclox



Clocks where they are needed

NOW that it is possible to finish the chores, eat supper and make the first show, you are finding more Westclox around the house.

For clocks that help you get out for the evening are needed to get you out in the morning, and Westclox alarms do both.

While you work in the field a Westclox watch will give you reliable time at low cost.

Alarms from \$4.75 to \$1.50. Watches \$1.50 and \$2.50. Each with the trade mark Westclox on the dial and six-sided, orange-bordered tag.

WESTERN CLOCK CO., LA SALLE, ILLINOIS, U. S. A.
Factory: Peru, Illinois. In Canada: Western Clock Co., Limited, Peterborough, Ont.

Big Ben \$3.50	Baby Ben \$3.50	America \$1.50	Sleep-Meter \$2.00	Jack o' Lantern \$3.00	Pocket Ben \$1.50	Glo-Ben \$2.50
-------------------	--------------------	-------------------	-----------------------	---------------------------	----------------------	-------------------

Michigan Farmer Patterns

Some Variations of the New Spring Styles

Send 12c in silver or stamps for our four-year size requires 2½ yards of up-to-date spring and summer 1923 36-inch material. Price 12c. book of fashions.



No. 4117—Girls' Dress. Cut in four sizes, 6, 8, 10 and 12 years. A 10-year size requires 3½ yards of 32-inch material. Price 12c.

No. 4296—Girls' Dress. Cut in four sizes, 8, 10, 12 and 14 years. A 12-year size requires four yards of 32-inch material. Price 12c.

No. 4271—Misses' Dress. Cut in three sizes, 16, 18 and 20 years. An 18-year-size requires 5½ yards of 40-inch material. The width of the skirt at the foot is 2¾ yards. Price 12c.

No. 4272—Ladies' Dress. Cut in seven sizes, 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size requires 3¾ yards of 54-inch material. The width at the foot is three yards. Price 12c.



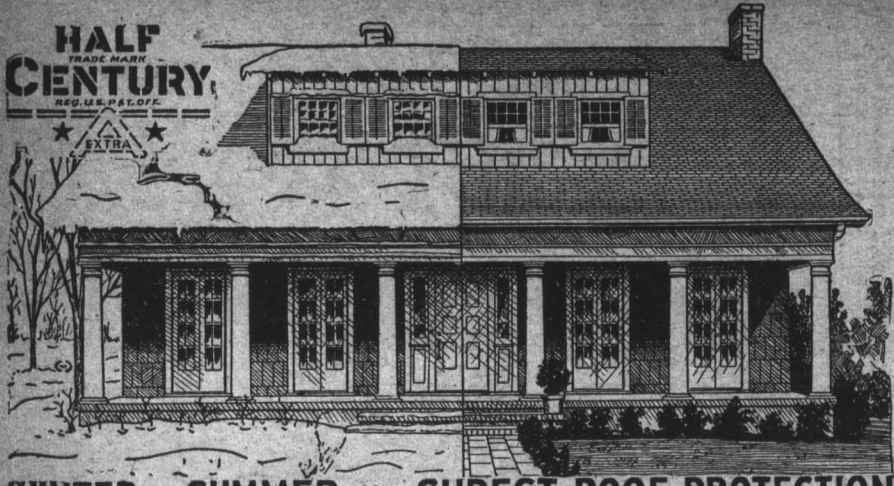
No. 4288—Juniors' Dress. Cut in three sizes, 12, 14 and 16 years. A 14-year size requires 3¾ yards of 36-inch material. Price 12c.

No. 4293—Boys' Suit. Cut in five sizes, 6, 8, 10, 12 and 14 years. A 10-year size requires 1¾ yards for the blouse and 1¾ yards for the knickerbockers, of 36-inch material. Price 12c.

No. 3930—Girls' Dress. Cut in four sizes, 4, 6, 8 and 10 years. A six-year size requires 3¼ yards of 32-inch material. Price 12c.

No. 4285—Child's Play Dress. Cut in three sizes, 2, 4 and 6 years. A

HALF CENTURY
TRADE MARK
REG. U. S. PAT. OFF.
EXTRA



WINTER or SUMMER the SUREST ROOF PROTECTION

with the greatest economy and the longest life will be found in genuine

"HALF CENTURY" BRAND WHITE CEDAR SHINGLES

Laid With Galvanized or Copper Nails

In building a new house or barn or reroofing an old one there are four things which you should clearly bear in mind. These are

First, the seasoning of your shingles. This is one of the most important things about shingles. If they are kiln dried they stand a good chance of being dried out too fast and too much. That makes them brittle and liable to crack in nailing. "Half Century" Brand Shingles are all "air-cured"—nature's way—the best way.

Second, accurate and uniform thickness of shingles. If too thin they are apt to "curl" and warp.

Third, the kind of wood from which your shingles are made. Everybody who knows anything about woods knows that some woods stand the "wear" of weather much better than others and that the wood that resists "weather-wear" best is *White Cedar*.

Fourth, use the proper nails. "Half Century" Shingles outwear common steel nails by a long, long margin. Use galvanized or copper nails. The other kind soon rust out. For a roof that will last your lifetime (and more) insist on having "Half Century" Brand *White Cedar Shingles* and use rust-resisting nails.

And remember that *White Cedar Shingles* take any color, shade or stain beautifully. All lumber dealers can supply you. (Insist on seeing the trade-mark above on every bundle).

Ask us for a copy of our valuable booklet, "How to Lay a Shingle Roof." It's free.

WHITE CEDAR SHINGLE MANUFACTURERS
503 F. R. A. Building Oshkosh, Wisconsin

82¢ Buys All the Wall Paper for An Entire Room

Here is a big Montgomery Ward offer! A DOUBLE LENGTH roll of wall paper for only 6c. Enough to paper an entire room 10x12 for as little as 82¢! This includes side wall, border and ceiling paper.

Send for our new book of Wall Paper Samples and see the MANY OTHER big values we have ready for you. It shows you our complete new assortment—grass-cloths, tapestries, oatmeal papers, leather patterns, fabrics. And all at prices to suit your pocketbook. Among the better grades, we have a big variety for only 50c and up per DOUBLE LENGTH roll. And remember, you get twice as much wall paper in one of our 16-yard DOUBLE LENGTH rolls as in the ordinary 8-yard single roll.

This Wall Paper Book FREE

Contains over 100 Actual Samples

Be sure to get a copy of this book before planning your Spring decorating. It is made up of actual large-sized samples. With each side wall is shown a sample of the border to match. Easy and pleasant to select your wall paper this way.

Send for this interesting and valuable book today. Ask for Wall Paper Sample Book, No. 1923 W. Address our House nearest you.

Montgomery Ward & Co.
CHICAGO FORT WORTH KANSAS CITY PORTLAND ORE. SAINT PAUL

WE TAN

and make to your order from your cattle, horse and all kinds of hides and furs, men's fur coats, robes, caps, gloves, and mittens, ladies' fur coats and fur sets. Remodeling and repairing in latest styles. Ship us your work and save one-half. New Galloway coats, robes, gloves and mittens for sale. We are the oldest Galloway tanners; 34 years continuous business. Free style catalog, prices and samples. Don't ship your hides and furs elsewhere until you get our proposition.

HILLSDALE ROBE & TANNING CO., Hillsdale, Mich.

KEEP BEES

Complete Beginner's Outfits with or without bees, Full line of Beehives, Sections, Comb Foundation, Smokers, etc. General Agents in Michigan for the A. I. Root Co. Send for 1923 catalog. Beeswax Wanted.

M. H. HUNT & SON, Lansing, Mich.

When writing to advertisers please mention the Michigan Farmer.

TANNERS
of CATTLE, HORSE, CALF, COON, FOX, SKUNK, MINK, MUSKRAT, WOODCHUCK, DOG, CAT and RABBIT SKINS.

What kind of skins have you? We make up and line Men's & Ladies' Fur Coats, Scarfs, Muffs, Capes, Collars, Robes and Mittens from raw skins. Circulars Free. Use plenty of salt on green hides.

W. W. Weaver, Reading, Mich.
Custom Tanner, 30 yrs. Experience.

LADIES' FURS
We tan hides and make them into robes, coats, mittens and ladies' furs, at reasonable prices. Send us your hides and furs which you want remodeled and made into latest styles. Robes and Coats at Wholesale prices. Free Samples. Reference: Citizens State Bank, Milford, Indiana. Write to the Milford Robe & Tanning Co. 183 Elm St. Milford, Ind.

Household Service

Use this Department to Help Solve Your Household Problems. Address all Letters to Martha Cole, Michigan Farmer, Detroit, Mich.

BELGIUM CAKE.

Can you give me a recipe for Belgium cake?—D. I.

To make Belgium cake use seven cupfuls of flour, half a pint of lukewarm milk, four egg yolks, half a yeast cake, a cupful of melted butter, half a pound of seeded and slightly chopped raisins, three-quarters of a cupful of sugar, a teaspoon of salt, one-quarter of a pound of almonds blanched and chopped; also a few bits of candied orange peel.

Dissolve the yeast in a little tepid water and add all but one dessert-spoonful to the milk; then stir in a portion of the flour, add the salt, beat well, and let rise in a warm place. Whip the egg yolks and sugar together and add them with the melted butter to the light dough; beat in the chopped almonds and the peel, together with the yeast which was reserved, and the remainder of the flour. Set the dough aside to rise again, then mold into a long narrow loaf and, after it becomes light, bake about forty-five minutes.

When finished cover with icing and decorate with cherries or nuts.

RECEPTION COCOA.

Can you give me a recipe for making cocoa that is not too expensive? We often serve cocoa at our parent-teachers' meeting but it is never extra good after it stands.—C. A.

The following recipe will serve ten people: Use half cup of cocoa, half cup sugar, quarter cup flour, quarter teaspoon salt, one quart water (cold), one quart milk, half teaspoon vanilla.

Mix cocoa, sugar, flour and salt together, add water, stir until free from lumps and then cook for twenty minutes, stirring until it reaches the boiling point, and then occasionally. Add milk, bring to boiling point, and add vanilla. Beat one minute with an egg beater and serve with marshmallows

or stiffly beaten, sweetened and flavored cream.

This cocoa will stand for hours and improve in flavor.

DROP COOKIES.

I would like a new cookie recipe. A drop cookie recipe would be acceptable.—Mrs. M. M.

The following are tested recipes sent in by our subscribers for the cookie contest:

Cream Drop Cookies.—One egg, one cup sugar, one cup cream, two cups flour, one teaspoon of baking powder, half teaspoon soda, half teaspoon grated nutmeg or one teaspoon vanilla and salt.

Graham Drop Cookies.—One egg, one cup sugar, one cup sour cream, one tablespoon molasses, one teaspoon salt, one teaspoon soda, two and one-half cups graham flour, one teaspoon cinnamon. Sift all dry ingredients together and stir in creamed egg, sugar and cream. Raisins or nut meats may be added.

STRAWBERRY JAM.

Kindly give me a recipe for making strawberry jam without fermenting, as that is the trouble I had with my jam last spring.—Mrs. E. L. K.

One must be careful to preserve all fruit in thoroughly sterilized jars.

It is quite a safeguard if you process your jam for fifteen or twenty minutes after it is cooked. By this I mean, fill the sterilized jars with the hot jam, and before sealing the cover tightly place them in a hot water bath for fifteen or twenty minutes.

Recipe for Strawberry Jam.—Make a syrup of one quart of water and eleven pounds of sugar. Cook in an open kettle for fifteen minutes, then add eight pounds of berries to the syrup. Cook very slowly just at the boiling point for fifteen minutes. Then process as referred above.

Everlasting Dough for Biscuit

EVERLASTING Biscuits are delicious during cold winter months and may be made often, for the dough is extremely easy to keep, say home economics experts at the University of Wisconsin.

The dough for an entire week's supply may be made the first of the week so that fresh biscuits may be baked every day if desired. The soda put into the dough prevents souring by neutralizing the acids which are formed by the yeast when growing. The baking powder is added to furnish minerals for the proper growth of the yeast.

Everlasting Biscuits.

One quart of milk scalded and cooled; one cup of mashed potato; one cup of sugar; one cup melted lard; one cake of compressed yeast softened in a half cup of water; two teaspoons of baking powder; one teaspoon soda; two teaspoons salt, flour to make a soft sponge.

Let it rise until it is full of gas bubbles. Add more flour to make a stiff dough. Cut or knead thoroughly and put in an ice box for twenty-four hours.

When a hot bread is desired, take the amount of dough necessary and prepare it as for any of the hot breads.

Special care should be taken to keep the dough in ice box or some other cool place. The dough should be kneaded

down every day, but if it should sour a trifle before it is all used, a little more soda worked into the dough will sweeten it.

"Everlasting Biscuit" dough has numerous variations—buns, dinner rolls, Swedish rolls, bread sticks, Parker-house rolls, hot cross buns, clover leaf buns—any of the variations from ordinary bread may be made from the dough.

Cinnamon Rolls.

Roll the dough to quarter-inch thickness, spread with melted butter and sprinkle with a mixture of six parts sugar and one part cinnamon. Cover with stoned or chopped raisins or with currants. Roll like a jelly roll and cut in three-quarter-inch pieces. Place these in an oiled bread tin, flat side down, and let them rise until very light. Bake in a hot oven.

Hot Cross Buns.

Flavor two cups of the dough with quarter of a teaspoon of cinnamon and quarter cup of stoned or quartered raisins. Let it rise over night and form into buns. Place in a bread pan one inch apart. Let them rise. With a sharp knife cut across on the surface of each. Bake twenty minutes.

Apple varieties rated as excellent for sauce usually make good pie. Also apples which have brightly colored skins are the ones which make a bright-colored jelly.

Rural Health

By Dr. C. H. Lerrigo

A MIND DISEASED.

IN the hospitals for the insane in the United States there live, day by day, a quarter of a million people. This is very far in excess of the number twenty years ago and more than three times the number of thirty years ago. But you must not therefore deduce that insanity is increasing, and all the world is going mad.

It means, rather, that the world is awakening to the fact that something can be done for mental disease, and that institutional care must be provided to give the unfortunates, who, for the time being, look at the world from an abnormal angle, a chance for recovery and rehabilitation.

Great advances have been made in the last decade in receiving, classifying and treating cases of abnormal mentality. No longer are such people consigned to the asylum as if it were a "madhouse" and they were sent there for restraint. Such a place is now a hospital in the strict sense of the word, and the patients are there for treatment.

There are no chains and manacles, and straitjackets in our modern hospitals for the insane. Such appliances and methods have been supplanted by modern apparatus and rational measures. The maniacal patient, instead of being confined in a straitjacket, is perhaps quieted by hydrotherapy, placed in the "continuous warm bath" and kept there until its quieting influence has had its effect.

Occupational therapy is another present-day method of helping the sick mind get back its balance. An effort is made to vary the occupation, to make it something that the patient will like, yet to make him see that it is not merely an aimless task but that he is doing something worth while. It does not matter very greatly whether the patient does good work so long as he is interested and satisfied and feels that he is doing something.

In some cases, especially those in which venereal disease is present, the use of drugs is helpful in restoring the mind. But more reliance is placed on training, rest and infinite patience. The whole tendency of the day is to put away the despairing attitude that classes all mental disease as incurable, and consider each case on its merits; with an endeavor to discover and rectify the first point of maladjustment.

RUNNING EAR.

I would like to know if there is any danger when a child has a running ear, if it has any effect on the hearing? She had an earache to begin with.—I. M.

Yes. Discharges from the ear always indicate danger. Not only may it seriously impair the hearing, but by involvement of the mastoid cells it may cause death. A child with a running ear should be given the services of an ear specialist at the earliest possible time.

TUBERCULOUS HIP.

When I was a boy I had a tuberculous hip which caused one leg to fail to grow properly, so that I am now lame. I am in good health now, but lame enough to be noticed, and I have had to explain about it to the girl I want to marry. Now she is a little afraid that it might be handed down to future generations. Please advise.—N. L. K.

You may assure the young lady that there is no danger, if the lesion is now

healed and you are in good physical condition. Tuberculosis of all kinds is contagious but it is not hereditary. The reason children of tuberculous parents have the disease more often than other children is because they are more exposed to infection. Bone tuberculosis is not so easily transmitted as lung tuberculosis because it is not so contagious, there being comparatively little in the way of infectious discharges. If you are now in good condition you may assure the young lady that you are a good risk, not only now, but for posterity.

QUININE NOT DRUG-FORMING HABIT.

Please say if regular taking of quinine forms a drug habit.—B. B.

Not in the sense that morphine and other habit-forming drugs do, in fastening on the patient something from which he cannot break away. But it may produce quite harmful effects in other ways.

VOLVULUS.

Please tell me what "volvulus" is, and if it is anything that could possibly kill a man?—N. M.

Volvulus is a term used to describe a twist of the intestine. It is quite a serious condition and if not quickly relieved causes impaction of the bowels and from this may follow gangrene, peritonitis, and death. If it cannot be promptly reduced a surgical operation should be performed.

HANDS GO TO SLEEP.

I am a woman fifty-one years of age. I have very good health, but my hands "go to sleep" during the night, especially toward morning. My doctor last year told me that my blood was too thick. Is there anything to do besides taking medicine?—Mrs. J.

The trouble of which you complain has nothing to do with your blood being thick or thin. It is a complaint of the nervous system. I doubt if taking medicine would do you any good; certainly you could expect no value from medicine taken to relieve the condition of the blood. Ask your doctor what he means by blood being thick. I dislike to shake the confidence that anyone may have in their old family doctor, but one of the duties of the doctor is to keep abreast of the times. If he does not he cannot give you good service, and it is better that he should stand aside.

ALOPECIA.

What is alopecia? Is there any cure for it?—M. N.

Alopecia is loss of hair, and is the medical term for plain baldness. There are certain forms that come as the result of disease, in which treatment is well worth while. But the bald-headed man who has come to his distinction through the changes of time, especially the one in whom it is a family trait, would far better reconcile himself to the loss.

DANGERS OF LIVE BURIAL.

Is catalepsy common? Is there much real danger of anyone being buried alive?—H.

No. The modern undertaker is well informed as to anatomy and physiology and it would be quite out of the question that any body given to an undertaker to prepare for burial would be interned if there were the faintest sign of life.

A New and Better Goodyear Cord Tire

with the beveled
All-Weather tread

You know what a marvelously good tire the Goodyear Cord Tire always has been.

Now it is made even more efficient and economical, by a remarkable improvement in its tread.

This new All-Weather Tread is made from an extraordinarily efficient rubber compound, the most serviceable we have ever devised.

It is semi-flat, instead of round, giving broader road contact, which also offers greatly increased resistance to wear.

With no sacrifice of non-skid efficiency this new tread runs more quietly and smoothly, while adding thousands of miles to the life of the tire. You can get the improved Goodyear Cord now, at no extra price—your Goodyear Service Station Dealer has your size.

Made in all sizes for Passenger Cars and Trucks

GOODYEAR

Copyright 1923, by The Goodyear Tire & Rubber Co., Inc.

Goodyear Means Good Wear

The Real Estate Market Place

Special discount given when used in combination with 7 other Capper Publications. Write for special real estate advertising rates on these papers which reach over a million and a half families

RATES

For Real Estate Advertising
On This Page

35c a line per issue on 4 time orders
40c a line per issue on 1 time orders

PAY NO ADVANCE FEE; don't give option of tie up real estate for any kind of contract without first knowing those you are dealing with are absolutely honorable, responsible and reliable.

Near Detroit 93 Acres, Team, Cows. Tools, Crops, \$1500.00 Cash Down

Excellent location. 2 miles to town offering advantages—2 railroads, stores, bank, elevators, churches, high school, etc.; 11-2 hour drive to Detroit; mail delivered, telephone, milk and cream collected; 80 acres productive tillage, 20 acres woodlot and pasture; 200 tree orchard; comfortable 9-room house, painted; good cellar, well pumped by windmill, pleasant shade; near neighbors; 40-ft. basement barn, ties 12 head; large hen house; wagon shed; hog house; granary. Quick buyer gets 2 horses, 3 cows, 1 heifer, bull, 30 hens, long list farm machinery; hay, oats, corn, fodder, firewood, small tools. Price \$6,900.00 with only \$1,500 cash down; balance easy. Write or see I. S. Bird, 405 So. Saginaw St., Holly, Mich., or MICHIGAN FARM AGENCY, 628 Ford Bldg., Detroit.

FOR SALE Country store on county road, on corner of 4 well traveled roads. Gas station. 41-2 acres land fenced, with fine grove; poultry house; barn; ice house; garage; two large store rooms and one general mdse. room; large built-in refrigerator; 5 living rooms and hall over store; one large room down stairs for summer kitchen, with porch, and pump on porch; stove, scales, slip file (up to date), cash register (National), and all fixtures included. If taken at once, \$3,500.00. Postoffice in connection. Good place for right party. Reason for selling, not enough help. Children transported to and from 12-graded school from door; Township Hall 30 ft. from store, and progressive farmers on all sides. Don't delay. Walter Cunningham, Winters, Mich.

Ten-Acre Poultry, Berry and Bee Farm

This desirable little farm is 4 miles from Gladwin, Mich., has new 4 room cement block bungalow with full basement, large front porch and large showy windows. Poultry house for 100 hens, stable for 4 head of stock, good driven well, fences woven wire. Soil gravelly and clay loam, ideal for berry and fruit raising. Bees are profitable, as there is a large amount of clovers, wild flowers in this vicinity. There is an independent living on this little farm for you. Price for quick sale \$1,000, part cash, with interest at six per cent. U. G. REYNOLDS, Owner, Gladwin, Michigan.

Western Colorado

LONG GROWING SEASON—Irrigation water in abundance and a wonderful climate make the valley of the Colorado the garden spot of the state for general farming, fruit and truck. Practical farmers invited to write for information. The Mesa County Chamber of Commerce, Dept. A., Grand Junction, Colorado—"The Garden of the Rockies."

Wanted To hear from owner of land for sale O. K. HAWLEY, Baldwin, Wisconsin

60 ACRE FRUIT FARM Full bearing at price of nursery stock, in famous Peach Ridge District, Oceana County, Michigan. Lake Michigan 2 miles; two summer resorts 2 miles. 2,500 peach, 575 apple, 100 cherry, 50 plum; few sweet cherry, quince, and crab; about acre gooseberries; line level; house, barn, windmill. Price \$4,500. Lock Box One, Shelby, Mich.

Own a Farm

In Minnesota, Dakota, Montana, Idaho, Washington or Oregon. Crop payment or easy terms. Free literature. Mention state, H. W. Byerly, 71 Northern Pacific Ry., St. Paul, Minn.

FOR SALE soil. Good buildings. 1 mi. to State 50, a Iowa Co., Mich. Rich clay loam road; 8 mi. to Ionia; 35 mi. to Grand Rapids. Must sell. This means money to you. H. A. Buehler, 5337 Calumet Ave., Chicago, Ill.

\$100 DOWN, balance ten years, Wisconsin for home. Big market, sure crops, grain, clover, fruit, garden, dairy. No drouth, sand, swamp, rock. Free fuel. Health pure water. Write now. Owner, Loveland, Plymouth Bldg., Minneapolis, Minn.

Wyoming Agency Dry and Irrigated Ranches, Chicken, Dairy and Stock Farms, Homestead Relinquishments Cheap. Tracts, City Lots, Stores, Summer Homes, 16 Mi. Mts. Licensed and Bonded Dealer, Glendo, Wyo.

Buy a Farm in the great fruit and farming country of Northwest Arkansas where land is cheap and terms are reasonable. For free literature and list of farms write J. M. Doyel Mountainburg, Arkansas.

FOR SALE 80 acre farm, 4 miles from railroad, town of 3500 population. 1 1/2 miles to school. Best of soil. Good well, house, barn, granary, young orchard, 12 acres fall wheat, 17 acres meadow, 10 acres fall plowing, balance pasture, all fenced. Wm. Greenfield, Onaway, Michigan.

MUST SELL to settle an estate 240 acre farm about 1/4 under cultivation. Balance timber and pasture well fenced. Good house, basement barn, shop, granary, hog and poultry house, good water, some fruit. Close to school and market \$25.00 per acre for quick sale. GEO. MUNN, Executor, Blanchard, Mich.

For Sale 40 Acre Farm 1 mile from Brunswick, Michigan in the good land district all Improved 8 Room House, Barn, Granary and out Building at the Junction of M-41-M24 State Highway. Price \$2,500.00. NORMAN MORRISON Brunswick, Mich.

Sell your property quickly for cash, no matter where located. Particulars free. Real Estate Salesman Co., 515 Brownell, Lincoln, Neb.

Poor Man's Chance \$5 down, \$5 monthly buys 40 acres productive land near town. Some timber. Price \$225. Other bargains. Box 425-Z, Carthage, Mo.

Additional Farm Ads. on Page 287

Overalls
Coveralls
Work Coats
Work Shirts
Romper
Playsuits



Extra Value At No Extra Cost

Van Wert Excelsior Work Clothes do wear longer. Why shouldn't they, for they are

Made of best grade denims,
Cut large and roomy,
Carefully sewed,
Reinforced at points of strain.

Men appreciate the Safety Watch and Rule Pockets.

Van Wert Excelsiors give you bigger values than you usually find in work clothes.

A dealer in your town sells them.

Manufactured by
The Van Wert Overall Mfg. Co.
Van Wert, Ohio

VAN WERT EXCELSIOR WORK CLOTHES

85 Pound Standard
Slate Surfaced
Roofing
\$2.00
Per Roll

Lay Your Own Roofing
This Spring

Do it in your spare time.
No experience needed.
Only hammer and jack
knife required. Use our
standard Radio Slate
Surfaced Roofing.

Approved by
Fire Underwriters
Spark proof. Fire resisting.
Better protection than wood
shingles. Extra durable and
not affected by heat or cold.

Best Standard Quality
You Can Buy
Only \$2.00 per roll
(enough to cover 100 sq.
ft.). For old or new roofs,
or over old wood shingles.

Red or Green

Non-fading crushed
slate surface beauti-
fies as well as protects
your home. Guaranteed
for 15 years but
should last longer.

Send for
FREESAMPLES
It puts you under
no obligation to buy.
\$2.00 per roll in-
cludes all nails and
cement. (Add 8c if wanted
with extra long nails.)

Shipped from Chicago, Kansas City, St. Paul,
York, Pa., Southern, Ill., or New Orleans, La. (\$2.10
per roll from Kansas City or St. Paul.)
Write to our house nearest you. Address Dept. C-34

Montgomery Ward & Co.
Chicago Kansas City St. Paul Fort Worth Portland, Ore.

HEROLD-
BERTSCH
MICHIGAN
MADE SHOES

Favorites with farmers and outdoor
men. Soles made from best
part of the hide. Uppers
specially re-tanned to re-
sist water and barnyard
acids.

H-B HARD PANS
WEAR LIKE IRON

DOGS

Fox Hounds, Rabbit and Skunk dogs. All
ages. Coon Hound Pups.
W. E. LECKY, Holmesville, Ohio

Our Boys' and Girls' Department

Found In Our Letter Box

Letters from Pals for Our Correspondence Corner

Dear Uncle Frank:

Hello, Uncle Frank, No. 2, may I
join your Merry Circle? I am thirteen
years old and am five feet nine inches
tall. I am almost a giant. I hauled
pickles for Heinz last summer and am
going to draw this year, too. My father
has a store and I draw the freight.
I went to town today and it snowed so
before I got back I had to shovel. The
snow is nearly three feet deep in the
yard and the roads are the same. I
guess I'll have to wade snow banks



No. 2—Norman O. Sibley, Hale, R. 2.

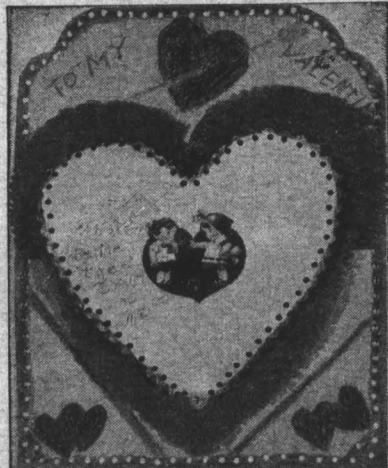
going to school. I am in the eighth
grade and hope to pass, but I like
school just the same.

I guess I will stop my chatter, so
good-bye.—Wilbur Aldrich, Remus,
Mich.

You have quite a start for a thir-
teen-year-old boy. Even now I would
have to look up at you.

Dear Uncle Frank:

I received your letter all O. K., and
it was ever so welcome. I think the
pin is a beauty. My sister and I live



No. 4—Hazel Snyder, Marlette, R. 6.

a little way from the school house so
we can go home for our warm din-
ners, and they are awful good. We
get the mail on the way home. My!
But I was glad when I opened the mail

box and saw that the top letter was
for me.

I had lots of fun this noon sliding
down hill. One of my friends asked
me to lie on the sled and let her lie
on me, and so I did. When we were
near the bottom of the hill and near
the pond, we went over the bumps and
it almost knocked the wind out of me.

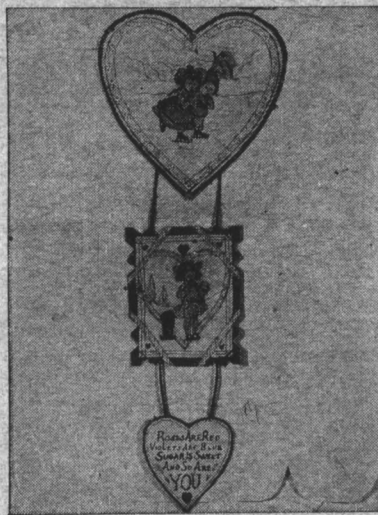
We are just having a "Good English
Week." I have been a detective once.
—Another niece, Esther Wonsler.

As you are a Good English detective,
I'll have to be careful of what I say.
Anyhow, I am glad you like the Merry
Circle pin.

Dear Uncle Frank:

Tho your friends number many score,
Won't you please add one more?
I, a candidate would be,
Is there a little room for me?

I'm a Freshman in Laingsburg High,
Live on a farm two miles high;



No. 1—John O'Seksy, Norway, Mich.

Class president, at that, is, my plight;
But each, their own battle must fight.

As this letter is my first try,
Hope as a "dead letter" this will not
sigh;

If some of the girls would write,
An answer soon, for them would light.

—As ever, Ruth M. Swarthout,
Laingsburg, Mich., R. 3.

I can't tell it to you poetically, but
we have a corner for you just the
same. I don't think your letter is
very dead.

Dear Uncle Frank:

I agree with Mary Ethel Connor on
doing dishes. I think they are horri-
ble. I have four brothers, and none of
them are very sweet on doing dishes.
And I think if you think it's such a
good indoor sport doing them, you are
welcome to it.—Caroline Rathke, R. 2,
Box 170, Petoskey, Mich.

Yes, wiping dishes is part of my



No. 5—Ada E. Farrer, Scottville, R. 4.

daily exercises. Washing dishes,
that's something else. But someone
has to wash them, why not you? Moth-
er probably has been working hard all
day.

Dear Uncle Frank:

I saw quite a sight today on Little
Traverse Bay, for being in the winter
time. An aeroplane circled over Pe-
toskey and over the Bay and landed
on the ice.

Uncle Frank, if your picture isn't in
the paper before our subscription runs
out, I will feel like coming down to
see you.

Wishing lots of bad luck to the
waste paper basket.—Your niece,
Pearl Baird.

You're not very nice to the waste
basket. I'm sorry I run my picture



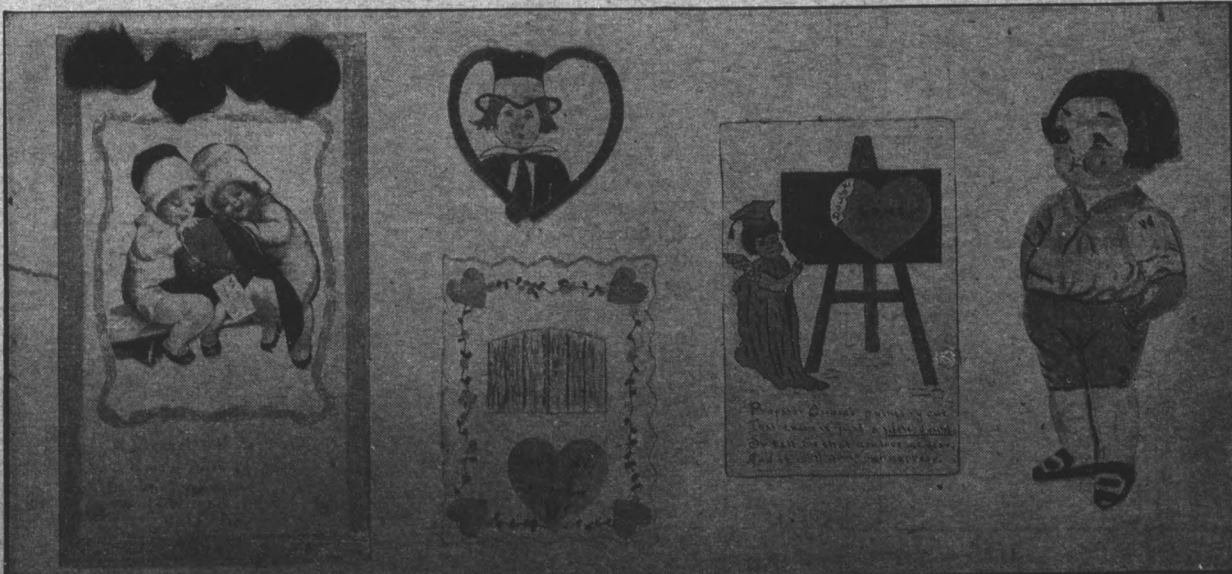
No. 3—Orpha Lewis, Maple City, R. 2.

as now you won't come down to see
me. By the way, how did you like my
picture?

Dear Uncle Frank:

I have a sheep whose name is Bunt-
er. I named him that because he
bunts at anybody or anything he sees.

One day I let him out of his pen to
get some fresh air. As I opened the



Next Five Prize Winners: Dana Shelton, Charlotte, R. 11; Upper Leah Gilbert, Memphis; Lower, Bernard Al-
fredson, Whitehall; Robert Gillesby, Decatur; Edith Grindling, Williamston.

BOYS and GIRLS

This 11 K. gold filled, guaranteed writing set consisting of Fountain Pen and Mechan-



ical Pencil will be sent to you prepaid for a few hours of your spare time.

SEND NO MONEY

Fill in the coupon below, enclose it in an envelope addressed to us and we will advise you of our "Easy Plan" that will make you the proud owner of this fine writing set. Mail the coupon TODAY, and be the first one in your neighborhood to get started.

MAIL THIS COUPON TODAY

EUGENE MACK COMPANY
607 Shelby Street
Detroit, Michigan.

Gentlemen:-

Please send me the full details of your "Easy Plan" of earning your guaranteed writing set.

Name

P. O.

R.F.D. or St.

State

POULTRY, PIGEONS and BABY CHICKS for PROFIT For a big book—an Encyclopedia of Poultry information. Many colored plates. Written by a man who knows. Low prices on Incubators, Brooders, Baby Chicks, Fowls and Eggs for Hatching. Write. Sent for 5 cents. **FRANK FOY** Box 193, Clinton, Iowa

POULTRY

QUALITY CHICKS AT LIVE AND LET LIVE PRICES \$10. PER 100 AND UP

From Excellent Picking. Heavy Laying flocks unlimited range. Well-Hatched. Sturdy Healthy Chicks in following varieties: Tom Barron English White Leghorns, 50, \$7; 100, \$13.00; 500, \$62.50; 1000, \$125.00. Park's Barred Rocks and Rhode Island Reds, 50, \$8; 100, \$15; 500, \$72.50; 1000, \$145.00. Select flocks headed by Mich. Ag. College cockerels (Dams records from 230 to 270.) Wh. Leghorns, 50, \$8; 100, \$15; 500, \$72.50; 1000, \$145.00. Rocks and Reds, 50, \$9; 100, \$17; 500, \$82.50. Delivered Right to Your Door By Insured Parcel Post. 100% live delivery guaranteed. Order Now and from this ad as many were disappointed last year. Profitable Catalog Free. Bank Reference. Lakeview Poultry Farm, Route 8, Box 5, Holland, Mich.

Rosewood Farm Healthy, Hardy Chicks

Well-hatched, carefully packed, and shipped. Select, heavy laying **WHITE LEGHORNS**, 50, \$7; 100, \$13; 500, \$62.50; 1000, \$125.00. Select **ANCONAS**, 50, \$7.50; 100, \$14; 500, \$67.50. Select **BARRED ROCKS**, 50, \$8.50; 100, \$16.50; 500, \$80.00. Postpaid, full live delivery guaranteed. Our Chicks will render you the best of satisfaction and you will COME BACK TO US. We have had long experience in producing good Chicks and our flocks are second to none. Circular free. **Rosewood Farm, R. 12B, Holland, Mich.**

STAR HATCHERY BABY CHICKS

From Select, Vigorous, Approved, Heavy Laying Breeding stock. **White & Brown Leghorns & Anconas**, 50, \$7; 100, \$14; 500, \$65; 1000, \$125. **Single Comb Reds**, 50, \$8; 100, \$16; 500, \$80. Hatched by modern methods in best machines under our personal supervision. Carefully packed and sent Postpaid and 100% live delivery guaranteed. Bank reference. You take no chances in ordering **STAR BABY CHICKS**. Place your order now and get them when you want them. **Star Hatchery, Box O, Holland, Michigan**

TIMMER'S HATCHERY

Hardy, healthy Chicks from selected heavy laying flocks. **Wh. & Br. Leghorns**, 50, \$7; 100, \$13; 500, \$62.50; 1000, \$125.00. **Anconas**, 50, \$7.50; 100, \$14; 500, \$67.50. **Barred Rocks** and **Reds**, 50, \$8.50; 100, \$16.50; 500, \$80; postpaid, full live delivery. Bank Reference. Free Catalog. **TIMMER'S HATCHERY, Route 3B, Holland, Michigan**

Big Value Baby Chicks

Are Guaranteed to Live. 12 popular breeds—easy to raise, husky, healthy, vigorous. Write today for free catalog showing many breeds in full colors.

OHLS POULTRY YARDS and HATCHERY Box 6, Marion, Ohio

Sturdy Michigan Chicks

From the largest baby chicks center in the world. **White Leghorns** exclusively. Get our low prices. Safe arrival guaranteed. We put all our effort into one breed. Write today. **Suburban Hatchery, Zeeland, Michigan.**

CHICKS 12 Leading Breeds

Free range, purebred, heavy laying flocks. Instructive catalog free. Prices right. **Ransom Farms, Box 6, Geneva, O.**

door he went after me. He made me jump a fence, but he jumped it, too. Then I climbed upon the machine shed and couldn't get down, because he was watching me. Then he saw a cat and went after him. I jumped down and ran home. He is so cross you can't go near him. Come and see him some time, will you? I'm sure he will like to see someone else besides me.

Well, I must give someone else room to write.—Your niece, Giggié Haloa, Perronville, Mich.

When I feel the need of a real good bunting I'll come over to see you and your friend, the sheep. Perhaps some of the young folks think I ought to have one right away.

Dear Uncle Frank:

Have never seen a letter in Michigan Farmer from Sault Ste. Marie, so here's hoping my letter will escape that "horrible waste basket."

All winter sports are much enjoyed around here. I have not had much experience at skating, but I have had enough to wish that I had learned how to skate when I was younger, because when I fall now it is from a distance of at least five feet seven inches.—Your niece, Mildred Miller, Sault Ste. Marie, Mich., R. 2.

The Letter Box has had letters from the "Soo." There is nothing like learning when you are young.

Dear Uncle Frank:

May I be one of your nieces? I enjoy reading the boys' and girls' let-

ters. I am living in a little suburban town. I enjoy dancing and playing the violin. I have danced for entertainments and play the violin.

Well, I will close my chatterbox.—Yours truly, Orange Blossom.

There was no address, so I can not tell where this Orange Blossom grows and dances and plays.

Dear Uncle Frank:

I caught fifteen woodchucks and fourteen crows; a quarter of a dollar a head bounty. I do like to hunt and trap very well. I caught three muskrats and one skunk.—From your loving nephew, Willie Yarhouse, Evart, Mich., R. 3.

You catch woodchucks, etc., about as easily as some folks catch colds. If you keep on catching, you will have quite a bountiful bounty.

Dear Uncle Frank:

I am going to tell you what I did. My papa did not know whether he would sign for the Michigan Farmer or not. I coaxed him and then he signed for it. Don't you think I did the right thing?

I am twelve years old, five feet two inches high, and weigh 112 pounds. Don't you think I'm a great big "Lubber?" Hoping I win and get a prize.—Your niece, Thelma Reppert, Ray, Indiana.

You bet you did right. We shall have to appoint you as our Indiana agent. No, you're no "Lubber."

Those Valentines

By Uncle Frank

THERE was a regular windfall of valentines here and the nicest kind of valentines, too. Really, these valentines surprise me again, because they show the real ability you boys and girls have along these lines.

Some of the prize-winning valentines on the opposite page do not show up in the pictures nowhere near as good as they really are. For instance, the one made by Norman Sibley was a dainty affair made of a piece of pink stationery, a lace doily, a ribbon that Norman found around some stationery, and some nice color crayon work.

That one by John O'Seksy was all hand-work, the drawings and all. In side there were some nice sentiments very neatly done. Orpha Lewis' was a stuffed heart with some hand-made posies on it, and Hazel Snyder's was strictly hand-made except the little picture in the center. The back of it was made from the front of a Big 5 scratch-pad, and the rest consisted of neatly cut-out hearts and red-crayoned hearts.

The basket that those two little Esquimo twins are looking at had a little lid which, when opened, showed a red heart inside. The demure little lady was hand-painted and cut out by Ada E. Farrer. And that one by Bernard Alfredson had little shutters which, when opened, revealed a picture of a little boy. Three pages inside were also neatly done in drawing and lettering.

That cute little boy standing in the corner was made out of writing paper, and that left hand of his was really in a pocket. When the hand was pulled out it was shown clutching a heart on which was inscribed, "To Uncle Frank."

That teacher in heart geography was the work of Robert Gillesby. Below the drawing was:

Professor Cupid's pointing out That there is just a little doubt, So tell me that you love me, dear, And it will quickly disappear.

That picture of a boy's head with a hat on was hand-drawn and colored by Leah Gilbert, and inside there was, very neatly done in gold, a nice valentine sentiment.

Many of the valentines had fine valentine expressions. I will never have need for love sentiments as I have a

big supply on hand now. There were quite a few of "Roses are Red, Violets are Blue," etc., but the ones which stand out in my mind were two as follows:

Roses are Red; Violets are Blue, Sugar is sweet compared with you. Roses are Red; Violets are Blue, Pickles are sour and so are you.

Aren't they nice love sentiments? At least, I think they hit nearer the truth than many of the others.

I got only one comic valentine; I expected many. This one was a drawing of a man with a big body labeled "Gas." You will see it next week.

Many will get Merry Circle buttons for the nice valentines they sent in.

No contest this week. You know we are going to have them every other week from now on, unless you like the other way better.

MORE ABOUT MOORE.

(Continued from page 271).

rows and if the supply is sufficient, and their companion, the mower, are the results of the inventive genius of many men, and it is said that one of the fairer sex also made a contribution, for I am told that a woman suggested the serrated or sickle edge on the sections of the harvester knife, but the central figure among those who contributed to the harvester, reaper, binder and mower is Hiram Moore. To him we owe the all-essential knife and bar.

Whitney invented the cotton gin; Watts the steam engine, and Morse the telegraph. The names of these men are written large on the pages of the world's history. Beside these names should be that of Moore, for his invention in its value to the human race ranks with theirs. No one can imagine a substitute for the cutter bar. Without it we might still harvest the wheat and hay with the cradle and scythe. The cutter bar in a single generation made populous agricultural states out of the great western prairies and has placed bread made of wheat on every table.

The people of this state should erect a monument to Hiram Moore and it should stand on the beautiful prairie where his invention began the greatest mechanical revolution in agricultural history.

WASHTENAW



HATCHERY CHICK PRICES: March 28th and following hatches: Barred Rocks and Reds, 50, \$8.50; 100, \$16; 500, \$75. White Rocks, White Wyandottes, 50, \$9.50; 100, \$18; 500, \$85. White, Brown and Buff Leghorns, 50, \$7.50; 100, \$14; 500, \$65. From hatches due March 12th and 19th add \$2 per 100 to these prices. Postpaid, full live delivery guaranteed. Our flocks are carefully selected and bred for high egg production. Order from this ad.

Reference, Farmer's & Mechanic's Bank.

WASHTENAW HATCHERY, Ann Arbor, Mich.

B-A-B-Y C-H-I-X

Order Now For 1923

WHITE LEGHORNS AND MOTTLED ANCONAS Also Black Leghorns, Brown Leghorns, Buff Leghorns, Black Minorcas, R. O. Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Silver Wyandottes, White Wyandottes. WE HATCH eggs from Hovanzed flocks in free range on separate farms. Send for Price List.

CRESCENT EGG COMPANY Allegan, Michigan

JUST-RITE LOOK! Baby Chicks

A Hatch Every Week All Year

POSTAGE PAID, 95¢ live arrival guaranteed. MONTH'S FEED FREE with each order 40 Bred chicks, 4 breeds ducklings, select and exhibition grades. Catalog free, stamps appreciated. Dept. 15, Gambier, O.

NABOB HATCHERY,

Pioneer BABY CHICKS

Pure breed, Tom Barron, English White Leghorns and Barred Rocks. Chicks that satisfy, 100% live delivery guaranteed with right prices. Send for our illustrated catalogue and price list before ordering. We save you money. **PIONEER POULTRY FARM & HATCHERY**, Box A, R. 10, Holland, Mich.

OTTAWA CHICKS

STRONG VIGOROUS CHICKS from our "SUPERIOR QUALITY" S. C. White and Brown Leghorns and S. C. Anconas, that Lay and Pay. Safe arrival guaranteed. Catalog free.

Ottawa Hatchery & Poultry Farm Holland, R-10 Michigan

Barred Rocks egg contest winners, eggs from a rain with records to 290 a year. \$2.00 per setting prepaid by P. P. Circular free. **FRED ASTLING**, Constantine, Mich.

64 BREEDS Most Profitable chickens, ducks, turkeys and geese. Choice, pure-bred northern raised. Fowls, eggs, incubators at reduced prices. America's great poultry farm. 80th year. Valuable new 100-page book and catalog free. **R.F. NEUBERT Co., Box 814, Mankato, Minn.**

Baby Chicks \$12.00 per 100 and up

Hatching eggs, \$1.50 per setting to \$15.00 per 100. We are listing 17 varieties of pure bred fowls: Chickens, Geese, Ducks & Guinea, also breeding stock. Send for prices and circular. Booking now for early delivery. **CLINTON HATCHERY & POULTRY FARMS**, Wilmington, Ohio.

PERFECTED WHITE LEGHORNS FREE MORE EGGS Lay 265 to 301 eggs per year. Winners at 50 shows. Chicks, eggs, pullets, hens and males shipped C.O.D. at low prices. Write today for catalog and complete information to the World's Largest Leghorn Farms. **GEO. B. FERRIS, 334 UNION, GRAND RAPIDS, MICH.**

Hardy Northern Bred CHICKS

Pine Bay Farm Barron S. C. White Leghorns. Parks' Strain Barred Rocks. The greatest egg producers known. Heavy winter layers. See record of our pen 16 now at the Michigan International Egg Laying Contest. Get Quality Chicks at Reasonable Prices from **HOLLAND'S PIONEER POULTRY FARM**. Catalog free. **PINE BAY POULTRY FARM** R 4 Holland, Mich.

BABY CHICKS We hatch leading varieties of Standard-Bred vigorous, heavy laying stock. Postage paid. Live arrival guaranteed. Send for our prices, open dates and large illustrated catalogue free. Write today. **Superior Poultry Co.** Box MF, Windsor, Mo.

Evergreen Poultry Farms White Wyandottes now leading at M. A. C. Laying Contest. Let us show you what we have. Write for circular. **Blanding & Sons, Greenville, Mich., Dept. B.**

CHICKS from good selected heavy laying flocks of S. C. Buff Leghorns. We keep just the one breed. Write for circular. **Willard Webster, Bath, Mich.**

RHODE ISLAND WHITES

win over all breeds at the egg laying contest. 30 eggs \$5; 50 \$8; 100 \$15 order from this ad. Some chicks H. H. JUMP, R. 5, Jackson, Mich.

White Leghorn BABY CHICKS of superior quality, from our own breeding pens exclusively. Safe arrival guaranteed. Circular free. **THE MARION HATCHERY**, R. 6, Marion, Ohio

Single Comb Black Minorcas. Few choice cockerels, grandsons of our 12. R. W. MILLS, Saline, Mich.

R. C. Br. Leghorn c'h'rls, \$1.50 to \$3.00 each. W. Chinese geese \$5.00 each. Eggs for hatching now ready. **Mrs. Claudia Betts, Hillsdale, Mich.**

Barred Plymouth Rock Cockerels \$5.00 each. Prize winning laying strain. **J. A. BARNUM**, Union City, Mich.

BABY CHICKS

Healthy, range flocks. Culled and tested. 12 breeds. 100% delivery guaranteed. Free catalogue. **SMITH BABY CHICK CO.** Dept. M, Bryan, Ohio.

White Holland Turkeys Toulouse geese A-1 stock. **AL DEN WHITCOMB**, Byron Center, Mich.

Biggest Hatches Strongest Chicks

That's what you'll get with my Hatching Outfit, and I can prove it.



My new Poultry Book, "Hatching Facts," tells the whole story—gives newest ideas and easiest ways to make poultry pay—it's Free—write for it today. Learn the many advantages my Belle City has over the "old hen way," and the big money folks make using my

\$13⁹⁵ 140-Egg Champion

Belle City Incubator

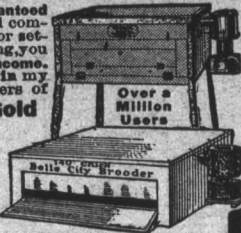
Double Walls Fibre Board—Hot-Water Copper Tank—Self-Regulated Safety Lamp Thermometer & Holder—Egg Tester—Deep Nursery. \$6.95 buys 140-Chick Hot-Water Double-Walled Belle City Brooder. Or save \$1.95 by ordering Both together for only

\$18⁹⁵ Express Prepaid

East of Rockies and allowed to points beyond.

With this Guaranteed Hatching Outfit and complete Guide Book for setting up and operating, you can make a big income. You can also share in my Personal Prize Offers of \$1000 in Gold without cost or obligation. Get an early start—Save Valuable Time—Order Now, or write me today for my new Free catalog "Hatching Facts."

A complete guide to success raising poultry for profit. Jim Rohan, Pres. Belle City Incubator Co., Box 14 Racine, Wis.



THINK OF IT 140 EGG **Ironclad** THE IRON COVERED INCUBATOR **FOR ONLY \$13⁸⁵** FREIGHT PAID EAST OF ROCKIES

Hatching Value We Ever Offered

Incubator made of California Redwood, covered with galvanized iron, double walls, air space between, hot water heat, copper tank and boiler, self-regulating. Shipped complete with fixtures, set up, ready to use. The biggest bargain on the market. 30 days' trial. Money back if not satisfied.

Absolutely no risk when you buy Ironclads. Or we will ship you this 140-Egg Incubator and 140 Chick Hot Water Brooder, both for only \$19⁷⁵—freight paid east of Rockies

30 Days TRIAL MONEY BACK IF NOT SATISFIED

This big capacity hot water incubator and hot water brooder, built of materials that will last for years, at a price that is a real bargain. Both Incubator and Brooder have copper tanks and boilers. Guaranteed to please or your money back. If you prefer a larger outfit, order our

260 Egg Incubator \$23.50
260 Egg Incubator with Brooder \$29.90

Freight paid. This Incubator has two doors and two egg trays. Order direct from this ad and save time, or send for free catalog today.

IRONCLAD INCUBATOR CO. Box 91 Racine, Wis.

\$13²⁵ Don't take any chances—find out what an incubator is made of before you buy. Wisconsin are made of Genuine California Redwood. We give 30 Days' Trial 10-year guarantee. This famous 140-Egg Incubator only \$13.25. With Hot Air Brooder both only **\$17⁷⁵** Freight paid east of Rockies

WHY PAY MORE 30 DAYS TRIAL

180 Egg Size \$15.75, with Brooder \$22.00
250 Egg Size \$22.75, with Brooder \$31.00

Incubators have double walls, air space between, double glass doors, hot water, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc. Set up ready to run. Order direct or send for our new 1923 catalog, free—postpaid.

Wisconsin Incubator Co. Box 116 Racine, Wis. **MONEY BACK IF NOT SATISFIED**

POULTRY

CHICKS

Barred Rocks
White Rocks
Rhode I. Reds
Wyandottes
Orpingtons
Leghorns
Wh., Br., Buff
Anconas

Orders may now be placed for March, April, May, or June delivery. Our Poultry Circular describes 11 breeds; all guaranteed and sent postpaid. Note particularly our Superior White Leghorns and Superior Barred Rocks; Hens that are making egg records in the hands of our customers. Send for price list.

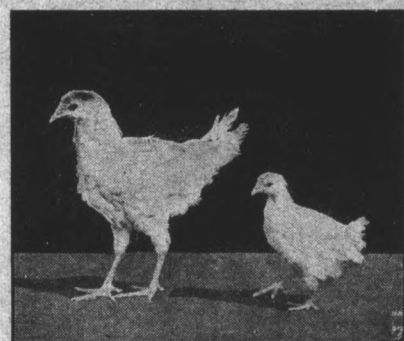
STATE FARMS ASSOCIATION
201 Chase Block, Kalamazoo, Michigan.



POULTRY HOUSE CONSTRUCTION.

IN Professor Foreman's talk on poultry house construction he emphasized that the house should have comfort, convenience and economy as essential points. Comfort for the birds is obtained through the control of the air, sunlight and dryness in the house. The summer house should be cool as summer ventilation keeps up the hen's physical condition and helps to delay early moulting.

A damp house is bad for the hen's health and this in turn injures the fertility and the hatchability of the eggs. There are three kinds of moisture to control, the humidity, capillary moisture and moisture of condensation. Cement poultry house floors that are now



After Hatching were Fed all the Grain they would Eat. The Larger Chicken Got a Little Milk Each Day, while the Smaller One Got None. They Are Sister Chickens.

damp can often be made dry by applying a layer of hot asphalt one-fourth deep on top of the finished cement. Laying roofing paper between the first and second layer of cement also makes a dry floor.

Overhead lights are recommended as they provide longer working hours. The open-front house is not recommended for Michigan when winter production is desired. Tile houses are all right when properly ventilated. The cement house is cold and damp unless properly ventilated. Plans for the Michigan Poultry House recommended by Professor Foreman were distributed at the meeting and these plans are available to all poultry breeders who request them from the experiment station.

A large part of the meeting was devoted to a discussion of this new Michigan house. Poultry breeders present who have built this type of house reported excellent satisfaction and a good rate of production coupled with low mortality.

POULTRY DISEASES.

IN discussing poultry diseases at the round-up poultry meeting, Dr. Stafseth states that there is no hocus pocus formula for curing disease. The earnest efforts of the poultryman must be ninety-nine per cent of the treatment. The death rate in commercial poultry plants is five to fifteen per cent, largely due to the habit of forcing for eggs. In many cases sick hens are immediately improved by taking the meat from the ration.

Dr. Stafseth says a new trouble has appeared which shows symptoms of bloody diarrhea, lameness and roughened feathers. This must be controlled by disinfection and the culling out of sick birds. Cleaning and disinfection is only about eighty per cent effective if infected birds are left in the

flock. However, sanitation is important as it reduces the losses, even though it may not eliminate them entirely.

White diarrhea should be eliminated from the state. A healthy looking hen may be a carrier and produce eggs which may hatch or may not. Usually the chick will show the disease from the state and spread it. Testing of blood samples removes the carriers. The testing is about ninety-seven per cent perfect. In Michigan the poultry disease investigations are a sideline and it is difficult to give the work the time that it deserves. White diarrhea appears before feeding and is different from the bowel trouble after feeding. The white diarrhea will usually appear by the fourth day.

DUCKS AND GEESE.

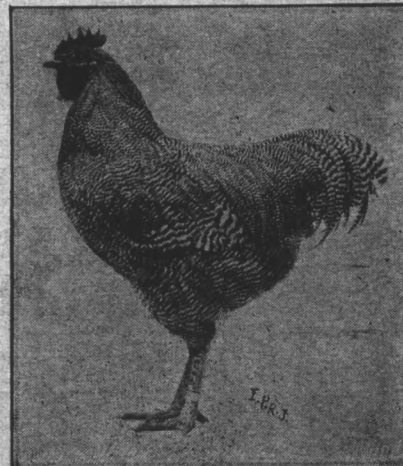
I have Toulouse geese and how can I distinguish the geese from ganders? Also, where can I obtain helpful literature on the care and feeding of geese and ducks?—C. C.

The book, "Ducks and Geese," by Lamor & Slocum, is the most thorough book on this subject that has been published. It can be purchased of the Orange Judd Publishing Company, of New York City. Price \$2.00. Ganders are usually a little coarser and larger than geese, with a larger head and thicker neck. The cry of the gander is more shrill. On page 166 of Lamor's book full instructions are given as to sure methods of determining sex. The United States Department of Agriculture, Washington, D. C., will send free bulletins on ducks and geese.

POULTRY BREED QUESTIONS.

I am building up a poultry farm and would like to know which breed of hens are the best for laying market eggs. Which hens are best for marketing meat? Now, there are different names in the paper for White Leghorns. Which are the best? I noticed Rhode Island Whites mentioned. What is that hen adapted for? Which would be the best incubator to use?—L. D.

The large commercial egg producers generally use White Leghorns. Anconas are also popular. Some of the heavier breeds are used on farms pro-



Here's the Kind to Head Your Flock.

ducing quantities of market eggs. Investigation has proven that high egg producers are found in many breeds and the individual characteristics of the bird are more important than the name of the breed. Plymouth Rocks, Wyandottes, Rhode Island Reds and Rhode Island Whites are fine general purpose breeds and rank high as market fowls. There are names for the different strains of Leghorns and which you choose depends a great deal on personal preference.

There is no best incubator. Some



Dr. L. D. LeGear, V. S. (in Surgeon's Robe)
Trade-Mark Reg. U. S. Pat. Off.

FREE! Dr. LeGear's Poultry Course

with purchases of Dr. LeGear's Stock or Poultry Remedies.

Dr. LeGear's 30 years' knowledge as a national poultry expert given in 12 volumes of 33 lessons.

Every lesson full of money-making facts for every poultry raiser. All free with purchases of Dr. LeGear's Stock and Poultry Remedies.

See Dr. LeGear's Authorized School Enrollment Dealer in your town today or write us for big free folder.



DR. LEGEAR'S POULTRY PRESCRIPTION

"It's simply wonderful," says Miss Caroline Freeman, Harrison, Miss. No eggs since Sept. After using it in Jan. quickly got 151 from 24 hens. Ask your dealer for Dr. LeGear's Poultry Prescription. Satisfaction guaranteed or money back. 25c and up. Dr. L. D. LeGear Medicine Co. 4161 Beak Av., St. Louis, Mo.

Baby Chicks

From purebred egg type birds. Barred Plymouth Rocks, White Wyandottes, Rhode Island Reds, White Leghorns. Prompt delivery and safe arrival guaranteed.

The Milan Hatchery, Milan, Mich.

Baby Chicks

Barred Rocks, R. C. Rhode Island Reds, Anconas, and White Leghorns. Chicks that grow fast, mature quickly and lay early. Our prices are exceptionally low. Write for catalogue and price list.

THE DUNDEE HATCHERY, Dundee, Mich.

BABY CHICKS of SUPERIOR QUALITY

From 12 select heavy laying varieties of Standard bred poultry, free range and Hogan tested. \$12 per 100 up. Full value for your money. Shipped by prepaid parcel post and 100% live delivery guaranteed. Send for free catalogue and prices.

Bowling Green Hatchery & Breeding Co. Bowling Green, Ohio

Egg-Bred Chicks

ENGLISH type White Leghorns, Brown Leghorns. From wonderful layers. 11 years of breeding for egg production. Breeders headed by large vigorous males from high record hens. Large combed deep bodied type. You will be proud to own a flock of these Leghorns. Live delivery guaranteed. Illustrated catalog free. Write today.

Royal Hatchery & Farms, R.2, Zeeland, Mich

WOLVERINE BABY CHICKS

Are chicks that satisfy.

Bred for egg production 13 years. We hatched and shipped chicks for 12 years. This assures you success. English type white and brown Leghorns. 100% safe arrival guaranteed. Write for catalogue. Its free.

WOLVERINE HATCHERY ZEELAND, MICH. R 2

Guaranteed Chicks

Exhibition and utility strains from America's best. Barred and W. Rocks, R. I. Reds, W. and Brown Leghorns, W. Wyandottes, Anconas. Surprising prices, quality considered. 13 years hatchery experience. Catalog. Haight Hatchery, Cedar Springs, Mich.

BABY CHICKS

White English Leghorns. Tom Barron strain; White and Barred Plymouth Rocks; S. C. R. I. Reds; Buff Orpingtons. All pure bred from selected stock. Live arrival guaranteed, postage paid. We do custom hatching. Durand Hatchery, Fenton, Mich.

like some make and some like others. The capacity of the machine required might be a determining factor as well as the amount of money that can be invested. A forty by thirty house would contain 1,200 square feet and be suitable for about 400 Leghorns, or 300 of the heavier breeds. You do not state size of scratching shed in front.

SOFT-SHELLED EGGS.

What is the reason for soft-shell eggs? We get them quite frequently. We feed wheat in the morning, oats and greens at noon, and corn at night. Oyster shells and bran are before them all the time. Also plenty of warm water.—E. N.

Even when supplied with plenty of oyster shells, hens may occasionally lay a soft-shelled egg. Sometimes this is due to an over-fat condition or to an abnormal condition of the organs which cannot be corrected. Hens that are laying heavily may occasionally not be able to manufacture the lime fast enough.

It is best to cull out any hens which are known to lay soft-shelled eggs frequently. When the birds are on range in the spring their condition may improve. In the meantime make them exercise in the straw litter and use a balanced ration.

DEVITALIZED FLOCK.

We have a flock of 100 hens. They have a new hen house with a cement floor, which is kept covered with straw. There is plenty of light. When the weather warrants, they are let out, so as to get all the exercise they can. But they are ailing, and have been gradually dying off since last fall. They are fed a corn and oat mash in the morning, about three-quarters of a peck; about the same amount of oats at noon, and also the same amount of corn and barley given alternately, in the evening. They have gravel, ashes and oyster shells at all times, and get plenty of warm water. They are seldom sick longer than one or two days. Then they act as though their legs are weak; they stand around with drawn-in head. Some will not show any symptoms at all but I find them dead under the roosts in the morning. I cut open two this morning, but could not find anything wrong in particular, although one big Plymouth Rock seemed to have a rather large liver.—A. F. P.

In the absence of more definite symptoms it is difficult to tell what might be the whole cause of the losses. Too much corn may have caused an over-fat condition of the flock. Lice sometimes cause hens to droop. I think if you will give the flock a balanced dry mash in a hopper that their condition will improve.

A good mash can be made of equal parts of ground oats, ground wheat and ground corn, plus about twenty per cent by weight of beef scrap. Other mash formulas recommended in the farm papers are good. The commercial mashes give satisfaction and are often economical at present prices. Use some green food to give bulk to the ration and tone up the health of the flock. Cabbage, mangels, clover or sprouted oats will be satisfactory.

DUCKLINGS DYING.

I am interested in raising Mallard ducks. There seems to be a few from each litter of ducks after they are two weeks old, that die off. I would like to know the reason for their dying.—Mrs. G. S. K.

Ducklings may die because of a lack of vigor in the breeding stock or a lack of sanitation in the yards and brooder house. Exposure to very hot sun is also a cause of losses. Feeding a ration that is too concentrated may cause losses. Ducklings need plenty of fresh water in dishes deep enough for them to wash their eyes and nostrils. It pays to perform a postmortem on any ducklings that die. This is of great value in determining the cause of the losses.

Save Those Chicks!

Get a Buckeye Colony Brooder

They literally save millions of chicks a year. You will be amazed at the greatly increased number and size of your chicks. You know our famous guarantee: "more chicks and better chicks or money back."

Grow 3 chicks where 1 grew before, save half the time and expense.

Buckeye Colony Brooders Raise Every Raisable Chick

Whether coal or oil burning, there is no crowding, no chilling and none of the usual chick ailments.

Buckeye—the World's Foremost Incubators—From 65-Egg to 10,368-Egg Capacity

More than 600,000 Buckeye Incubators are in use throughout the United States. More than 54,000,000 chicks per year are Buckeye hatched.

Send today for new catalogs

If interested in Blue Flame Brooders send for catalog No. 24; or in coal-burning Brooders, No. 36; Buckeye Incubator Catalog No. 48 tells how to grow more and better chicks.

THE BUCKEYE INCUBATOR CO.
World's Largest Manufacturers of Incubators and Brooders
813 Euclid Avenue
Springfield, Ohio, U. S. A.



Buckeye Colony Brooders

The KLONDIKE Makes More Money for You

Easiest To Operate
The KLONDIKE
Safest To Use

The Klondike Incubator is a Money-Maker. It gives bigger hatches of stronger and more vigorous chicks than any other incubator made. It operates perfectly under all conditions, and gives you that same perfect service year after year. Ask your dealer to show you the Klondike. Compare it with any other make, and you will be sure to decide in favor of

KLONDIKE INCUBATORS

Every improvement that would increase its efficiency has been added—every convenience that makes it easier to operate is found here. It is made of Redwood throughout, has four insulated walls with dead air spaces over all, double glass top, perfected heating system and the most positive and accurate heat control known. Every Klondike is equipped with complete set of Redwood nursery trays and the famous "handy-to-handle" egg trays—the only egg trays that really make it easy for women to operate an incubator.

KLONDIKE NO 240
240 EGG CAPACITY

KLONDIKE INCUBATOR CO.,
339 S. W. 9th Street,
Des Moines, Iowa

TO FARM WOMEN:

About 90% of all poultry raising is done by the women on the farm. For 27 years I have sought to make an incubator of the greatest service to you. If I knew of a single improvement that could increase its dependability, I would add it. The Klondike Incubator today is absolutely perfect. There are scores of imitations, but only one Klondike. When you buy insist on getting a Klondike. I stand back of it with a 100% unlimited guarantee. Let me send you my Incubator Book that tells all about it.

M. M. Wilson, President.

FREE CATALOG
Write today for my Free Catalog and Incubator Book. Full of valuable information for all incubator users.



Egg Bred BABY CHICKS

The Best Laying Strains on Earth

Barron English White Leghorns, Br. Wn Leghorns, and Anconas. During 1923 we will sell 30,000 strong, healthy, super-hatched chicks weekly, bred from strains backed by 18 years of actual egg breeding on our Farms. The enormous output of these quality chicks enables us to sell these money-makers at a price unequalled. Our flocks are culled out annually by poultry experts and are mated to large, vigorous 260-288 egg Pedigreed Males from Funk Farm direct.

Hundreds of Customers Report Big Profits

E. I. Beebe, St. Charles, Mich. writes: My 100 hens laid 133 eggs each and I made over \$300.00 clear profit last year.

Wm. Vivant, Harbor Spring, Mich. writes: We got 3528 eggs in January from 180 pullets.

A. Dall, Port Huron, Mich. The pullets began to lay at 4 1/2 months old and averaged 23 1/2 eggs each for one month.

F. L. Hess, Chicago, Ill. writes: I averaged 112 eggs a day from 140 hens and sold \$158.00 of eggs in February.

Raise Good Stock and Reap a Golden Harvest

We don't boast on a few high record birds but our extraordinary flock's average has attained our present high standard. Intelligent chick buyers look for these qualities and we assure you we have them. Get our 1923 catalog now, it's free.

Wynyard Hatchery, Box M, Zeeland, Michigan

BABY CHICKS Pure Bred for 1923



Bred to lay from carefully mated Flocks, of standard Quality and for Egg Production. We offer you exceptional values in the breeds, Leghorns, Rocks, Reds, W. Wyandottes, Orpingtons, Minorcas and Anconas. Our prices are right when Quality is in consideration. This should be the main point in view. For success, get our Big Catalog of Chicks and Brooders, we have a special offer for you, also how to care for your chicks after you have them. It is Free.

Wolf Hatching & Breeding Co. Dept. 10, Gibsonburg, Ohio

BUY HUBER'S RELIABLE CHICKS

Our 14th Year ---- 1,000,000 for 1923

By Parcel Post Prepaid—100% LIVE DELIVERY. Give us your order for some of our RELIABLE CHICKS and we will prove that we give you better chicks for the money than you can get elsewhere. COMBINATION OFFER and SPECIALS OFFERED. Order early. Write for prices and Free Illustrated Catalog.

Huber's Reliable Hatchery, East High St., Fostoria, Ohio

POULTRY

BABY CHICKS



Bargain Prices—Write Quick. Best paying, highest quality, Pure Bred Tom

Barron and Hollywood White Leghorns—Egg Records 270 to 300 eggs in one year—Brown Leghorns, Anconas, Barred Rocks, Rhode Island Reds, White Wyandottes. Book orders now—get liberal discount. Valuable catalog free.

We guarantee to save you money—give you strong, healthy, perfect chicks, the best that money can buy, guarantee live delivery, and absolute satisfaction. Write today sure.

SUPERIOR POULTRY FARMS
Box 101 Zeeland, Michigan

HIGHEST QUALITY CHICKS

Michigan's Old Reliable Hatchery

(The most modern and best equipped Hatchery in the state)



Pure Bred English and American S. C. W. Leghorns; S. C. Anconas; Barred Plymouth Rocks and R. I. Reds. Strong, well hatched chicks from tested Hoganized free range stock that make wonderful winter layers.

Chicks sent by Insured Parcel Post Prepaid to your door. 100% live delivery guaranteed. Fifteen years of experience in producing and shipping chicks has given absolute satisfaction to thousands. Write for illustrated free catalog and price list. Get lowest price on best quality chicks before you buy.

W. VAN APPELDORN, R. 7, Holland, Mich.

Whittaker's R.I. Reds

Michigan's greatest color and egg strain. Bred from winter layers for thirteen years. Customers report flock average of 24 eggs per hen for January. 2 pound broilers at 7 weeks, 2 1/2 pound broilers at 9 weeks. Write for free catalog quoting prices on eggs and chicks. Rose and Single Combs.

INTERLAKES FARMS

Box 39, Lawrence, Mich.

QUALITY CHICKS 8 1-2c up.

Barron English White and Br. Leg. and Anconas. Strong, sturdy chicks from scientifically culled M. A. C. Inspected free range breeders. Ten years of consistent breeding for heavy egg production. Wonderful winter layers. Winners at leading shows. Buy direct from Modern 65 acre poultry farm. Shipped postpaid. 100% live arrival and absolute satisfaction guaranteed. Illustrated Cat. free. Write today. Tawnline Poultry Farm, Dept. M., Zeeland, R. I., Mich.

Make Money Returns commence on your investment in 4 1/2 to 5 months from the time you receive your strong pure bred chicks from our own free range farms of S. C. English White Leghorns, Barred Rocks, Anconas. All breeders inspected and approved. Years of good egg breeding back of them. Our catalog for terms, guarantee, delivery, etc. It's free. Write today RIVERVIEW POULTRY FARM, R. 2, Box M, Zeeland, Mich.

Pedigreed State Approved S. C. W. Leghorn CHIX American-English Strain

Are you going to buy them from a hatchery or from a BREEDER? Buy from Michigan's Largest Leghorn Farm and insure success. We hatch our own eggs only. Supply limited. Prices reasonable. Satisfaction guaranteed. Descriptive circular tells all about them. It's free.

Simon Harkema & Son, R. 1, Holland, Mich.

CHICKS \$10.50 AND UP IF from Hogan tested hens. Wb. Br. & Buff Leghorns, 50, \$7; 100, \$13; 500, \$62.50. Bar. Rocks, Anconas, 50, \$7.50; 100, \$14; 500, \$67.50. Reds, Wb. Rocks, Minorcas, 50, \$8; 100, \$15; 500, \$72.50. Buff Orpingtons, Wb. Wyandottes, 50, \$9; 100, \$17; 500, \$82.50. Mixed, 100, \$11; 500, \$52.50. Order now. Catalog Free. Eggs for Hatching. Ref. 4 Banks. Tri-State Hatcheries Box 512, Archbold, Ohio

GUARANTEED BABY CHICKS

From World's Champion Layers. Certified, Trap-Nested, Pedigreed, Snowden's English White Leghorns, 250-291 Egg records; Shepherd's 381 Egg strain Anconas. Guaranteed strong healthy chicks. Real money makers. Beautiful Catalog FREE. FRANK A. VAN BREE, Box 32, Zeeland, Mich.

BABY CHICKS

8 leading varieties; free range, pure bred stock, 100% live delivery guaranteed. Postage prepaid. Catalog and price list free.

Scott Bros. Hatchery, Edison, Ohio.

CHICKS THAT MAKE PROFITS. Strong, vigorous, well hatched from leading breeds of heavy layers. Moderate prices, 100% live delivery guaranteed. Postpaid. Catalog giving full particulars free. Bank reference: BLUFFTON HATCHERY, Box M, Bluffton, Ohio.

CHICKS We ship everywhere. Safe arrival guaranteed. 20 thoroughbred varieties. Hatched right. Member Int. Baby Chick Assn. Catalog free. Mammoth Hatchery, R. F. D. 30, Glen Ellyn, Ill.

Baby Chicks Selected chicks from the heart of the baby-chick industry. Leading pure breeds from heavy egg producing strains. Live delivery guaranteed. Send for catalogue and prices. L. Van Hoven & Bro., Zeeland, Mich.

S.C.W. Leghorn Baby Chicks, From large can strain of heavy winter egg producers. All eggs set produced by our own breeding pens. Price \$12 per 100. Gruse & Warner, Hudson, Mich.

Additional Poultry Ads. on Page 283

Belgium Imported Melotte



Before buying any separator find out how the Melotte has won 264 Grand and International Prizes, and how, for efficiency of Skimming, Ease of Turning, Convenience of Operation and Durability--the Great Belgium Melotte has won every important European contest. No wonder Jules Melotte says: "Let every man try it. I'll leave it to the judgment of the American farmer as to whether this is the greatest separator in America."

The Belgium Melotte is the only single-bearing bowl separator ever made. This patent Bowl hangs from one frictionless ball-bearing and spins like a top. The 600-lb. Melotte turns as easily as the 300-lb. machine of other makes. Spins for 25 minutes unless brake is applied. No other separator has or needs a brake.

\$7.50
after 30 Days
Free Trial

No Money Down--30 Days' Free Trial--Easy Monthly Payments--15 Year Guarantee. We will send an Imported Melotte Cream Separator direct to your farm on a 30 days' absolutely Free Trial--no deposits--no papers to sign--use it as if it were your own separator. Compare it; test it every way.

Send No Money

You're not to send one cent until you've used this great Belgium Melotte and have made up your mind it is the machine you want. Keep it for 30 days and use it just as if it were your own machine. Then send your milk to the creamery. Let them prove which separator skims the cleanest.

Easy Payments!

After 30 days' free trial, then send only the small sum of \$7.50 and the balance in small monthly payments. The Melotte pays for itself from your increased cream checks.

Send Coupon Now

Mail the coupon for catalog giving full description of this wonderful cream separator. Read about the porcelain lined bowl. Easy to clean as china plate. One half less tinware to clean. An exclusive Melotte feature.

Test the Melotte against all other separators and satisfy yourself that it is the world's greatest separator. And remember it is guaranteed for 15 years. Don't wait--be sure you mail coupon today.

The Melotte Separator, H. B. EASON, 2834 W. 19th St., Dept. 3102 Chicago, Ill.
Without cost to me or obligation in any way, please send me the Melotte catalog which tells the full story of this wonderful separator and M. Jules Melotte, its inventor.

Name.....

Post Office.....

County.....State.....

Dairy Farming

Keep the Cow Comfortable

By Leo C. Reynolds

THE dairy cow, to give a large yield of milk of high butter-fat per cent, must be made comfortable. Most dairymen stable their cows most of the time during the winter. I find that on an average, my cows are stabled twenty-three out of every twenty-four hours. Mild days I allow my cows to remain in the yard from one to two hours, but in chilling weather they are in the yard just long enough for watering. I believe daily outdoor exercise adds to the health and comfort of the dairy cow.

My cows are tied with swinging



Contented Cows Give More Milk.

stanchions. These stanchions are suspended on a short chain about six inches long and are also fastened at the bottom with a short chain about the same length. I like this stanchion as it gives the cows a great deal of liberty, yet they are properly tied. I do not like the rigid stanchion. For years we tied our cows with chains about the neck, attached to a vertical bar. This tie was far ahead of the rigid stanchion from the standpoint of comfort of the cows, but the swinging stanchions are the most satisfactory of all.

To stable cows comfortably, a properly arranged and constructed stall is essential. We have used plank floors, cobblestone and block floors in our stable, but the cement floor is the most satisfactory, beyond all question. It is easy to keep clean and sanitary and because of this there is no unpleasant odor about the stable. I consider foul gases about the stable as injurious to the health of the cows as to the dairyman himself. I believe a smooth, tight floor an important factor in the sanitary stabling of cows.

The stable should have plenty of windows on all sides, if possible, and especially on the south side. During winter the days are short and many days are cloudy. Unless there are plenty of windows the stable will be very dark and gloomy. The dairy cow, like a human being, enjoys sunshine. My cows are stabled along the south side of my barn so that the sun can shine directly upon the cows.

Good ventilation is absolutely necessary to the health and comfort of the cows. Few farm barns are equipped with an adequate system of ventilation. However, fresh air may be brought into the stable in various ways if care is exercised to avoid direct drafts. One or more windows may be raised several inches and a board fitted across the opening in such a manner as to allow fresh air to come in without draft. A door may be left partly open on the side opposite the prevailing winds. Abundance of fresh air is essential for the health and comfort of the dairy cow.

To consume her food profitably the dairy cow must have a comfortable bed to lie on. Plenty of clean, dry

bedding not only provides comfort but assists in keeping the cows clean, and the stable sanitary. I like to use all the bedding I possibly can in my stable as it not only keeps my cows clean and makes them comfortable, but materially increases my manurial supply. —Leo C. Reynolds.

MILK PRODUCERS INCREASE GROUP MEMBERSHIP.

ABOUT fifty per cent of the milk producers whose product comes into Saginaw, have signed membership contracts with the Saginaw County Milk Producers' Association, according to George Deindorfer, president of the association. B. F. Beach, secretary of the Michigan Milk Producers' Association, has been working in this part of the state, and has held four meetings in the past two weeks. Many of the producers have volunteered their services to get more members.

According to Mr. Beach the primary object of these associations, all of which are connected with the state and national organizations, is to regulate the production of milk in such a way as to prevent a "flush" market during one season of the year and a milk famine at another time. The state and national organizations also are fighting the filled milk practice.

With the exception of slight variations due to transportation charges and small difference in quality, the association hopes to establish stable milk prices. Mr. Beach said one of the highest endorsements of the work of the associations to date is that the Detroit milk dealers have refused to buy milk from other sources than are connected with the producers' association.—Mills.

AVOID FEEDING SPOILED SILAGE.

WE have found it wise to watch carefully the condition of the silage we are feeding. Sometimes it is frozen and it spoils faster than it is



One of H. W. Zerlant's High Producers.

fed out. In both cases the animals receiving it suffer.

The frozen silage is found about the wall of the silo. If this silage can be pulled off in chunks, pitched down in the stable, the heat there will soon thaw it out and make it ready to feed.

Spoiled silage is especially harmful to horses and sheep, but should not be fed to cattle. One should have sufficient stock to feed off at least two inches over the entire surface of the silage each day in winter, and from three to four inches during the warm weather. Otherwise, one cannot handle the silage safely without wastage, it being necessary to throw away that portion which has become unfit for feed.—J. A. S.

A hot brick in a padded box often will help bring through young pigs born in extremely cold weather.

156 Silos Filled by Dick's Blizzard

"Our Blizzard L-13 has been in constant use for 15 years--run with 22 different engines and still running strong." W. B. Enderline & Sons

Every Blizzard wearing parts replaceable. After years of service, a few repair parts makes it as good as new.

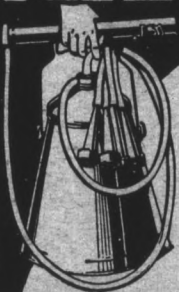
Prices Down, New Features
Dick's Blizzard is biggest value for 1923. All models are self-feeding. Some have automatic feed control. All explained in Big New Circular Sent Free

Blizzards do most cutting per H. P. No equal for keeping going. No lost time. Low upkeep. Rugged, durable, safe. Write for particulars also on Dick's Famous Feed Cutters for hand or power operation. 49 years on the market.

THE JOS. DICK MFG. CO.
Box 510 CANTON, OHIO
**DICK'S
Blizzard
Ensilage Cutter**



HINMAN MILKER



THIS well-known picture of all the vital parts of a Hinman shows its simplicity.

Just a handful, that spells perfect milking,

clean milk and few repairs.

Simplicity has meant success for the dairymen. It has produced certified milk on thousands of farms and made records with prize cows. It has meant time and labor saving.

It can mean that for you and save its cost in a year.

Send for catalog and Hinman low prices. It's worth getting.

Hinman Milking Machine Co.
Sixth St., Oneida, N. Y.

Make More Money

With a draft-free, warm, dry, easily cleaned, vermin-proof poultry house of Natco Glazed Hollow Tile, you increase your egg yield and have healthier chickens. Easily erected at reasonable first cost with no upkeep expense afterwards.

Write for the new Natco on the Farm Book.

NATCO DOUBLE SHELL TILE

NATIONAL FIRE-PROOFING COMPANY
1305 FULTON BUILDING :: PITTSBURGH, PA.

BARREN COWS - are the results of CONTAGIOUS ABORTION

Prevent this by using ABORNO. Easily administered by hypodermic syringe. Kills abortion germs quickly without harming cow. Write for booklet with letters from users and full details of Money-Back Guarantee.

ABORNO LABORATORY
44 Jeff St. Lancaster, Wis.

Blatchford's CALF MEAL

Write for chart No. C-29, "How to Feed Calves," giving important authoritative information for farmers. Send you FREE, BLATCHFORD CALF MEAL CO. Waukegan in business over 125 years Ill.

WORLD'S BUTTER RECORD.

THE world's butter record is 1,673 pounds, which was churned from 1,338 pounds of butter-fat. This was made from 30,886 pounds of milk given in one year by Agassiz Segis May Echo, a five-year-old Holstein cow on the Canadian experimental farms in British Columbia.

COOPERATION NOT RIVALRY.

TO work together was the slogan of the representative of the various dairy breed organizations in a meeting held at Washington early this month.

Over twenty men from various dairy districts of the country conferred. They adopted resolutions looking toward an united front in tackling the many problems now confronting this most important branch of American agriculture. Reliable and just testing records; better distribution of pure-bred stock; rules governing sales of such stock; proper educational activities; stronger fight against tuberculosis and other diseases—these and many other subjects were carefully worked out by these leading breeders of the Ayrshire, Brown Swiss, Guernsey, Holstein and Jersey breed associations.

LEAGUE BUILDS UP BIG MARKET.

THE big dairy farmers' organization in New York state is now doing a remarkable business. This organization is not only selling large quantities of fluid milk, but is also manufacturing other dairy products and putting them upon the market.

For the year 1921, thirty-one per cent of the milk handled by the league was sold as fluid milk; whereas, in 1922 this percentage had crept up to fifty-seven per cent of the increased volume delivered by the members.

Their manufacturing business is growing. On the first of January in 1922 the association owned eighty-one plants. A year later this number had increased to 103. The New York city board of health has approved forty-five of these plants.

The ice cream business of the league, which was taken on this past year, grew beyond expectations. Nearly 400,000 gallons of the health-giving refreshment were sold during the summer months. The league ranks third in the amount of ice cream manufactured in all the United States.

Condensaries owned by these farmers rank fourth among the milk canners in the country. The output for 1922 was, in round numbers, 1,800,000 cases.

Through a strong selling organization and liberal advertising, most favorable trade relations have been established; and league brands are meeting with favor among consumers.

MORE BEANS PER ACRE FOR 1923.

(Continued from page 253).

when planted late. The wrinkling of the seed coat of beans is largely due to immaturity resulting from late planting. When it is necessary to plant beans in the latter part of June, the Early Wonder or other short season variety should be planted. The usual planting date for beans ranges from June 1 to June 20.

White pea beans make up the large majority of Michigan's crop and are the most dependable on the market. Red Kidneys are, however, in strong demand and have brought a premium for the past few years. Without doubt the acreage of Red Kidneys could be considerably increased in Michigan.

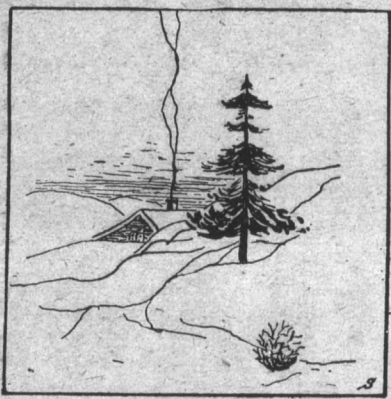
The Brown Swedish, a heretofore little grown bean, has increased largely in acreage in certain Michigan localities during the past two years and

has met with a strong demand on certain large city markets. The Brown Swedish is a vigorous grower and high yielder and can apparently be increased in acreage to a reasonable extent.

Clean, disease-free seed should be planted. When drilled in rows twenty-eight inches apart, the usual rate of planting is from twenty quarts to three pecks of pea beans, one bushel to five pecks of kidneys, and three pecks of Brown Swedish. When planted in hills about half these amounts are necessary. The seed should be planted about one inch deep.

Use Phosphate and Manure.

3. Larger amounts of fertilizer than are commonly used will give paying results with the bean crop. From 250 to 350 pounds of a 2-10-4 or a 2-12-2 fertilizer will give excellent returns, both in increasing yields and hastening maturity. Beans respond to fertilizers carrying a high percentage of phosphorus. Acid phosphate alone at the rate of from 250 to 300 pounds per acre, on soils high in organic matter, or which have been manured, may



prove the most profitable fertilizer to use.

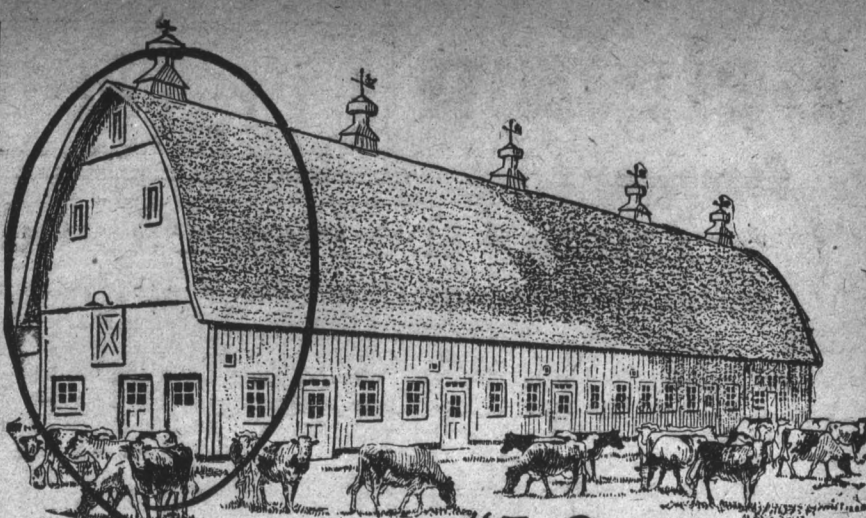
Commercial fertilizer should be applied broadcast when fitting the seed-bed, though smaller amounts, not more than 100 pounds, may be applied through fertilizer attachments on the drills. Manure is effective on nearly all Michigan bean soils. It should be applied in fall, winter or early spring for best results, using six or eight tons per acre. It should be supplemented with acid phosphate as advised.

4. Give the bean crop thorough cultivation. After beans are planted they may be harrowed once or twice with a spike-tooth harrow or with weeder. Cultivation should begin as soon as the rows can be followed. The first cultivation should come close to the plants and may be fairly deep. Later cultivation should be shallow so as not to prune the plant roots close to the rows. The plants should not be cultivated when wet with dew or rain, since the spores of blight and anthracnose are easily carried. Thorough preparation of the seed-bed lessens the number of cultivations necessary in order to keep beans clean.

Should the price of beans remain high next year the grower who harvests big yields per acre will make the most profit, while on the other hand, if the price be low the producer who gets the most per acre may make a profit where the average grower might meet with loss.

A MICHIGAN HIGH-PRODUCER.

MICHIGAN'S highest senior two-year-old producing cow in 1922, for ten consecutive months, is Eden White Rose, owned by G. W. Ridgeman, of Vassar. With a record of 19,446.3 pounds of milk containing 706.56 pounds of butter-fat, equivalent to 883.2 pounds of butter, her production is exceeded by only two other Holstein cows of her age in the world. One of these is another Michigan cow, Traverse Colantha Walker, of the State Hospital at Traverse City, who is the world's champion producing cow in the senior two-year-old class. Her record is 914.2 pounds of butter.



"I Got this part of my Barn Free with Jamesway Service"

"This end of the barn shown above contains two silos, a two-story feed room big enough for all the storage space the barn needs, a feed elevator, power plant for the milking machine and a number of other units. Compared with my original plans I can figure that I got this end of the barn free after submitting my ideas to the Jamesway engineers," writes the owner of this Jamesway-planned, Jamesway-equipped and Jamesway ventilated modern dairy barn.

Send Us Your Barn Problem

Do you need a new barn? Or are you planning to remodel your old one? Write and tell us about it. Let the Jamesway engineers give you the benefits of their experience in planning and designing thousands of barns and farm buildings. Let them build your barn on paper—plan for you the most practical, work-saving features—provide plenty of storage space, sanitary feeding and cleaning arrangements and, most of all, give you plans and specifications which you can hand to any good contractor and be sure of getting a building that will give you the most for your money in good materials and labor. Also get Jamesway ideas on hog houses and equipment.

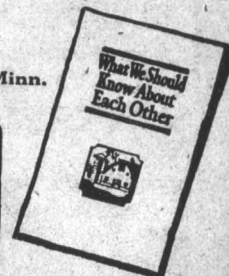
Make Money on Poultry Too
Raise more poultry and make hens lay

Ask for Book No. 75

The Jamesway Farm Engineers
JAMES MANUFACTURING COMPANY
Elmira, N. Y. Ft. Atkinson, Wis. Minneapolis, Minn.
Address Nearest Office

Jamesway

FARM ENGINEERING SERVICE



Saved Big Veterinary Bills — Cows Gave More Milk the Year Through

Mr. C. E. Dodge of Dewittville, N. Y., is one of the many cow owners who have discovered that it pays best to PREVENT cow diseases. He knows that it is a fine thing to have on hand such a valuable medicine as Kow-Kare in the event of actual diseases, such as Abortion, Retained Afterbirth, Barenness, Milk Fever, Scours, Bunches, etc. But he also knows that a moderate use of Kow-Kare in the feed not only PREVENTS these diseases, but greatly increases the winter milk flow. He writes us his experience, as follows:

"Since I have been on the County Farm, I have been using Kow-Kare in the dairy for the last ten years. I have 52 cows. My experience is that a few dollars' worth of Kow-Kare saves us a great many dollars' worth of veterinary bills, and also every cow in the dairy that I feed it to produces more all the year thru because of the Kow-Kare. I have no sick cows or trouble, when I begin feeding Kow-Kare, from the first of January until I turn them out in the Spring."

Winter feeds are so much harder on the digestive and milk making organs of the cow that the vitality of these functions is sure to become impaired unless nature is assisted. Kow-Kare is designed primarily to strengthen these very organs so that they may throw off disease and keep up the normal milk production.

The best of it is, this valuable Kow-Kare treatment costs so little. Just a tablespoonful of the remedy morning and evening about one week in each month will keep a cow in best of health and heaviest milking. Your troubles from sick and backward cows are over when you have learned to depend on Kow-Kare.

Feed stores, general stores and druggists sell Kow-Kare; large size \$1.25 medium, 65c. If dealer is not supplied we will mail, postpaid, on receipt of price. Write now for our valuable book, "The Home Cow Doctor."

DAIRY ASSOCIATION CO., INC.
Lyndonville, Vt.
Manufacturers of KOW-KARE and BAG BALM



FREE BOOK

MEADOW BROOK FARM



CHICKS ENGLISH WHITE LEGHORNS, BROWN LEGHORNS (Holland Importation Strain) 50, \$7; 100, \$13; 500, \$62.50; 1000, \$120. BARRED ROCKS; REDS, BUFF LEGHORNS, 50, \$8; 100, \$15; 500, \$72.50; 1000, \$140. WHITE WYANDOTTES (Heavy Laying Flocks) 50, \$9; 100, \$17. Postpaid, full live delivery guaranteed. All flocks composed of Selected Heavy Layers. Order now from this advertisement and get them when you want them. I have been producing good Chicks successfully for the past 20 years and KNOW HOW. I want your business and will try hard to please you. Free Catalog. Bank Reference. Meadow Brook Farm, Henry De Free, Proprietor, Route 1M, Holland, Mich. Member Mich. B. C. A.

GUARANTEED RURAL

CHICKS

EXCEPTIONAL VALUES IN HIGHEST QUALITY, PROVEN LAYERS
PURE BRED S. C. English White Leghorns, Heavy Laying Brown Leg., Selected Anconas. Heavy winter layers. Result of constant breeding for high flock averages. Large modern hatchery and 70 acre poultry farm. We guarantee absolute satisfaction and live delivery of strong healthy chicks. Sent postpaid. LIBERAL DISCOUNT ON ALL ORDERS BOOKED NOW. Write at once for our fine new catalog. Its free. Ref. Zealand State Bank. RURAL POULTRY FARM, R. 1, Dept. M, Zealand, Mich.



A Page for Live Stock Men

News Gleaned by Field Editor P. P. Pope

The Lure of the Home Lands

Business, Travel, Money, Come Second for the Owner of the Bidwell Stock Farm

WHO hasn't heard of the Bidwell Stock Farm? No doubt it is one of the best known farms in the state. He who has not visited it still has something to live for. The Bidwell estate has, since the days when the elder Bidwell was in his prime, been the breeding ground for good Shorthorns. He was a great lover of good cattle and of the land, and spent his long lifetime building up the fine farm at the edge of the pleasant little town of Tecumseh, and stocking it with good cattle.

The son and heir, Ralph J. Bidwell, has inherited along with the land, his father's love for the open country and for good cattle. He went to the university and graduated. He tried shut

Screater, the farm manager, who has been a fixture on the farm for over twenty years. Much credit is due him for the loyal service he has rendered since the days of the elder Bidwell, and his efficiency and interest are well shown in the neat appearance of the farm.

THE HICKS' SALE.

AT their farm at Williamston, J. M. Hicks & Son recently sold at public auction a draft of Percherons, Shorthorns, Poland Chinas and sheep. Buyers were optimistic as to the future of the horse market, yet lacked faith to invest much money in good horses. Charles Bray, of Okemos, se-



The Cattle Barn on the Bidwell Stock Farm. It Contains Stanchions for Ten Cows, and Thirty Box Stalls. The Stall Floors Are of Creosote Blocks and Each Has its Private Drinking Cup.

ting himself up in an office for a while. He couldn't stand it. He went into the southwest and as a regular cowboy made good on a cattle ranch. Then a promising newspaper advertising proposition opened up what under his supervision has developed into an extensive and lucrative business, which calls upon him to spread himself over a goodly portion of the United States. The influence of big business, the enchantment of the big west, the wonders of our biggest cities have none of them succeeded in crowding out the lure of the land of his father's, and periodically he returns to spend some of the most delightful days of the year astride his thoroughbred mount and roaming over the beautiful rich and rolling fields of the Bidwell Stock Farm.

It is not so much the opportunity of making money as the love for the old home lands which are as a part of him, that has led to their beautification and adornment through the erection of attractive buildings and the installment of the most modern conveniences.

The beautiful fields of grain, rich alfalfa meadows and wide pastures of native June grass roll easily over a half-section of Michigan's most delightful landscape. A high-class herd of Shorthorn cattle containing around thirty breeding matrons, with the accompanying generations, are the pride of the farm. Considerable attention is also given to the raising of pure-bred swine, with the Poland China breed, as his choice. The farm manager's wife, who supervises the domestic affairs, takes pride in a neat little farm flock of big rugged Rhode Island Reds that supply the table with eggs and chicken and the trade with high-class breeding stock.

The ventures with hired help and herdsmen have not always been satisfying or profitable. But though many men come and go, there is one that stays on forever. His name is Grant

cured the first prize colt at the recent college show for \$102.50.

The Shorthorns found ready buyers at prices suitable to the times. L. C. Kelly & Son, of Plymouth, and Mr. Gill, of the same place, secured some of the best stock of Scotch breeding.

Hog buyers were numerous, yet somewhat skeptical regarding future pork values. Each and every hog sold went at a price that could not help but make the buyer good money. The average on the eighteen head of bred sows and gilts was a little over thirty dollars.

When it came to sheep, the auctioneers made easy money. All they had to do was yell "sold" when the bid reached the proper place. Forty-two grade ewes made an average of \$15.25 each.

This firm is also breeding a number of Holstein cows to freshen next October and they say, "If Dr. Friday can boost the price of milk a bit higher, we will call a Holstein sale some time next fall."

RED-POLLED SALES.

SALES of Red-Polled cattle have been flourishing recently for Battenfield Brothers, of Fife Lake. They report sales of ten head of pure-bred Red-Polled cattle to farmers in Kalamazoo, Missaukee, Osceola and Wexford counties. Their four-year-old herd sire, Elmbrook Rival, No. 30665, is an excellent producer with extreme size and plenty of advanced registered blood flowing through his veins. Good sires are always a great aid when it comes to disposing of their offspring.

SPOTTED POLANDS.

SPOTTED Polanders are regular little pig incubators, says G. C. Coffman, Coldwater. He reports 196 pigs raised from twenty-three sows last spring, an average of over eight and one-half pigs to the litter. He is selling a draft from his herd of 300 head next week.

One man pulls, 64 Stumps in 3 hours

This record was established at Official Land Clearing Demonstration by the WHEELBARROW STUMP PULLER—one man doing all of the work of operating machine and hitching cable to stumps.

THIRTY DAY
MONEY BACK
FREE TRIAL

MARTINSON
WHEELBARROW
STUMP PULLER

POWERFUL
AND
SPEEDY

Prove to your satisfaction that the Wheelbarrow Stump Puller does all we claim. Use it on your own stumps in your own way for 30 days. Guaranteed against breakage for 3 years, FLAW or NO FLAW.

TERMS: \$10.00 DOWN, A YEAR TO PAY BALANCE

Power and Speed controlled by shifting a lever. Light and strong; made of highest quality steel. Cable has tensile strength of 23 tons. Operated by one man—no horses, no help required. Built into a sturdy wheelbarrow frame for easy moving.

YOUR
STRENGTH
MULTIPLIED
538
TIMES

The WHEELBARROW
STUMP PULLER costs
no more than others.

Write today
for catalog.

MARTINSON MFG. CO.
1406 Lincoln Bldg., DULUTH, MINN.

"I know that I saved the price of my Martinson Stump Puller on the first 10 1-2 acres cleared with it." Theodore Anderson, Warroad, Minn.



\$24.95 Sent on Trial Upward American Cream SEPARATOR

Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$24.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects you. Besides wonderfully low prices and generous trial terms, our offer includes our—

Easy Monthly Payment Plan

Whether dairy is large or small, do not fail to get our great offer. Our richly illustrated catalog, sent free on request, is a most complete, elaborate and interesting book on cream separators. Western orders filled from Western points. Write today for catalog and see our big money saving proposition.

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



Make
Your Livestock
Produce
More

Good Silage is as important as good pasture, and the better the silage the greater the production. Stock raising and dairying are by far the most profitable types of farming. Make your farm more profitable by using

Kalamazoo Tile & Wood Silos

Our Glazed Tile Silos are decay-proof, storm-proof, vermin-proof; will not burn or blow down. Save repair and paint bills. Three dead air spaces make perfect insulation against cold, heat, dampness. Kalamazoo Tile is made from selected quality fire clay in our own plant located in the center of the finest fire clay district. Our Wood Stave Silos have stood the test of 30 years. We are America's pioneer silo builders. All Kalamazoo Silos are fitted with continuous door frames of galvanized angle steel. Send for free book of silo information.

Kalamazoo Glazed Building Tile
Makes permanent farm buildings. Economical, handsome, low in cost of upkeep, low insurance rate, cool in summer, warm in winter and cheapest in the long run.

Before you plan a building of any kind get the facts about the Kalamazoo Tile. Write today.

Kalamazoo Tank & Silo Co.
Dept. 223 Kalamazoo, Mich.



Think of it. We can now sell Excell Metal Roofing, 28 gauge corrugated at only \$3.10 per 100 sq. ft. painted. Galvanized only \$4.30. If you have been waiting for metal roofing prices to come down, here they are—direct from factory prices—lower than you can get anywhere else. Send for our New Catalog covering all styles Metal Roofing, Siding, Shingles, Ridding, Ceiling, etc., will save you money. PREPARED ROOFING ONLY \$1.05 Don't buy Roofing, Paints, Fencing, Gas Engines, Tires—anything you need until you get our latest catalog. You can see and try our roofing before you pay. All sold on money back guarantee. Write for Money Saving Catalog today. The United Factories Co., 304 Marion Bldg., Cleveland, Ohio



INVESTIGATE Walsh no-buckle harness before buying harness. Let me send this wonderful harness on 30 days' free trial. Outwears buckle harness because it has no buckles to tear straps, no friction rings to wear them, no holes in straps to weaken them. Highest quality of leather. Try Walsh Harness on Your Team Costs less, saves repairs, wears longer, fits any size horse perfectly. Made in all styles, back pads, side backers, breeching, etc. LIBERAL TERMS, \$5.00 after 30 day trial, balance monthly. Write for FREE catalog and new reduced prices. Meet our representative at the Michigan Fair, Detroit, Sept. 1st to 10th, or write our office. HOOSIER SILO CO. Dept. M. 99, Albany, Ind.



CRAFTS MEDICINE FOR DISTEMPER

The standard preparation for Coughs, Colds, Distemper. All Druggists. Write for FREE Book on Horse Diseases. WELLS MEDICINE CO., Lafayette, Ind.

MICHIGAN FARMER Classified Liners bring results. They cost little. Try one.

CARE OF PREGNANT EWES.

THE care of the flock before lambing has an important relation to the financial returns which may be expected from the lamb crop. Ewes which are in poor condition and lacking in vigor will produce a large percentage of small, weak lambs. Such lambs require more care and feed to develop rapidly enough to reach the market early when the prices are usually highest. If the ewes are thin in flesh at lambing time they will not produce a good flow of milk. This retards growth and stunts the lambs. A small, thin lamb nearly always sells as a cull on the market. There is usually a large supply of culls, with little demand; consequently culls always sell for the lowest price. Sheep producers will find that it pays well, from a market standpoint, to have the ewes in strong, vigorous condition at lambing time.

If good winter pasture is available it is comparatively easy to keep the flock in good condition. Fall wheat or other pasture, with clover or alfalfa hay for dry roughage, makes an excellent ration for pregnant ewes, and the exercise which they get while grazing will bring them to lambing in a vigorous condition. Where clover or alfalfa is not available to supplement the pasture, oat straw or corn stover with approximately a quarter of a pound of cottonseed meal per day, may be fed.

Where there is no pasture and it is necessary to feed throughout the winter season, a ration of three to four pounds per head per day of clover or alfalfa hay alone may be used. Approximately one-quarter to one-half pound of corn should be added three to four weeks before lambing.

A more economical ration which may be used is two to three pounds of alfalfa or clover hay and two pounds of silage. The silage must be of good quality and not frozen or moldy.

Salt should be kept before the flock at all times; an unlimited supply of fresh water should also be available.

It is important that the ewes get a moderate amount of exercise and where the flock is not on pasture the rough feed should be placed some distance from the sheds or barn so that the flock will get exercise in going to and from their feed.

Care must always be taken that the pregnant ewes are not chased by dogs or jammed through narrow gates or doors, as any rough treatment will cause a large per cent of loss of lambs.

The shepherd's problems for the lambing season are very largely solved if he has brought the ewe flock to the beginning of the season in good flesh and thrifty condition.—L. C. Reynolds.

BOGART'S DUROC SALE.

FRANK tells in his own words what happened on that Arctic Day: "My sale of February 6 was not as well attended as it should have been, on account of the inclement weather and late trains. Colonel Fred Busche failed to arrive at all as his train from Kentucky, where he had been attending McKee Brothers' sale on the fifth was three hours late. Many local buyers who knew the offering have since bewailed their absence, as they said they were afraid the bids would go too high, but such was not the case. No. 6 was the top of the sale, bringing \$60, which was a very conservative price considering her quality and breeding. Although my average was far below what it should have been, I am satisfied that the public is beginning to appreciate the value of Wolverine Woodford Sensation as a great breeding boar, since sows sired by him or bred to him, topped the St. Joe County Association Sale at Centerville, Jim Barney's sale at Coldwater, and my own at Sturgis."

CLASSIFIED ADVERTISING

This classified advertising department is established for the convenience of Michigan farmers. Small advertisements bring best results under classified headings. Try it for want ads and for advertising miscellaneous articles for sale or exchange. Poultry advertising will be run in this department at classified rates, or in display columns at commercial rates.

Rates 8 cents a word, each insertion, on orders for less than four insertions; for four or more consecutive insertions 6 cents a word. Count as a word each abbreviation, initial or number. No display type or illustrations admitted. Remittances must accompany order.

Real estate and live stock advertising have separate departments and are not accepted as classified. Minimum charge, 10 words.

Rates in Effect October 7, 1922

Words	One time	Four times	Words	One time	Four times
10	\$.80	\$2.40	26	\$.20	\$6.24
11	27	.....	6.48
12	28	.....	6.72
13	29	.....	6.96
14	30	.....	7.20
15	31	.....	7.44
16	32	.....	7.68
17	33	.....	7.92
18	34	.....	8.16
19	35	.....	8.40
20	36	.....	8.64
21	37	.....	8.88
22	38	.....	9.12
23	39	.....	9.36
24	40	.....	9.60
25	41	.....	9.84

Special Notice

All advertising copy discontinuance orders or change of copy intended for the Classified Department must reach this office ten days in advance of publication date.

MISCELLANEOUS

BOYS, GIRLS—15 big packages cucumber seed postpaid \$1.00; value, \$1.50. Recommend them to your friends. Very heavy bearer, excellent pickling, tender slicing, Michigan grown. Absolutely 1922 crop. This means dependable quick germination—the seed your neighbors want. Guarantee: money refunded for seed returned within 14 days. Order now, pay when received. Sweet Home Seed Farm, Pentwater, Mich.

KENTUCKY NATURAL LEAF TOBACCO. Chewing: 5 Pounds, \$1.75; 10 pounds, \$3; 20 pounds, \$5.25. Smoking: 5 pounds, \$1.25; 10 pounds, \$2. Send no money. Pay when received. Farmers Co-Operative Tobacco Union, Paducah, Ky.

SWEET CLOVER SEED—White or yellow biennial. Inoculator for alfalfa, sweet clover, soy beans. Best pure culture bacteria in soil base. Guaranteed. Bushel-size can postpaid, 75c. E. E. Basil, Sweet Clover Grower, Latty, Ohio.

HOMESPUN TOBACCO. Chewing: 5 Pounds, \$1.75; 10 pounds, \$3; 20 pounds, \$5.25. Smoking: 5 Pounds, \$1.25; 10 pounds, \$2; 20 pounds, \$3.50. Send no money, pay when received. Cooperative Tobacco Growers, Paducah, Kentucky.

HOMESPUN SMOKING TOBACCO—Mild and mellow 10 lbs. \$1.50; 20 lbs. \$2.75; delivery guaranteed. We furnish free recipe for preparing. Smoking Tobacco Exchange, Sedalia, Kentucky.

TOBACCO—Extra Smoking, 5 lbs., \$1.00; 10 lbs., \$1.50; 20 lbs., \$2.75. Chewing, 5 lbs., \$1.50; 10 lbs., \$2.75. Quality guaranteed. O'Connor Smokehouse, S133, Mayfield, Ky.

SILVER FOXES—Very special prices on best quality, registered, nineteen-twenty-three pups bargained for now. Buy now, pay later, save one-third. Volmar & Hughes, Muskegon, Michigan.

DAHLIA BULBS—75c per dozen, postpaid. Clarence Van Buren, Marion, Mich.

CALICO SEED CORN, also Early Golden Surprise. C. L. Freed, Lancaster, O.

TREES, Plants, Vines, Shrubs. J. Landa, St. Joseph, Mich., R. 2-B, 239.

SEED POTATOES—Certified Petoskeys. Northern grown. Butternut Farm, Lupton, Mich.

DOGS

GERMAN Shepherd, Airedales, Collies; Old English Shepherd dogs; Puppies; 10c illustrated instructive list. W. R. Watson, Box 35, Macon, Mo.

ONE COLLIE female puppy eight months old, a beauty. Priced to sell quickly at \$10.00. Ward W. Dunston, Clarkston, Mich.

POULTRY

WE SPECIALIZE in printing for Poultrymen, Hatcheries and Farmers. Sample Stamp please. Mendell's Printing Company, Grand Rapids, Michigan.

RHODE ISLAND REDS—Rose Comb Cockerels, hen-hatched, farm raised. Big, thrifty dark colored birds from prize winning strains, \$4 to \$7.50. Two special at \$10 each. Careful attention to mail orders. Bidwell Stock Farm, Tecumseh, Michigan.

GET EVERGREEN POULTRY FARM'S cheap prices on pure bred poultry, chickens, turkeys, ducks, geese, guineas, baby chicks best laying strains. Illus rated catalog free. Evergreen Poultry Farm Hatcheries, Hampton, Iowa.

HATCHING EGGS WANTED. We can use your output in any of the odd breeds such as Houdans, Polish, Cornish, W. Minorcas. Write us at once. Chick Hatchery, Dept. 6, Shelbyville, Ill.

CABALL'S ROCKS lead them all. Leading hen over all breeds. National laying contest official records. 207 to 293. Chicks and eggs. G. Caball, Box M, Hudsonville, Mich.

BARRED PLYMOUTH ROCKS for sale, stock and eggs at reasonable prices. Fair View Poultry Farm, R. No. 3, Box B, Hastings, Mich.

GEESSE—Toulouse, African, Emden, DUCKS—Pekin, Golden, Runner, Muscovy. Price reasonable. John Hass, Bettendorf, Iowa.

RED COCKERELS—Both combs. Michigan's best strains. \$5.00 each. Only few left. Will W. Davy, Petoskey, Mich.

ROSE Comb R. I. Red Cockerels, \$3 each. Raised from Whitaker's Grade "A" chicks. Ernest Davis, Fowlerville, Mich.

HATCHING EGGS, Redd, Both Combs. Six Blue Ribbons. Grand Rapids Coliseum Show 1922. Laying Strain. H. Liddicoat, Breckenridge, Michigan.

WHITE LEGHORNS—Tanned males \$30—\$500. Pedigrees, Orpingtons, Guinea, Fenner Bailey, Montgomery, Mich.

PARTRIDGE WYANDOTTES—Wolverine strain. I have a few fine male birds to offer at very reasonable prices. Russel W. Cattell, Bronson, Mich.

68 VARIETIES Fine purebred poultry, stock, eggs, chicks. Large catalog 5c. A. A. Ziemer, Austin, Minn.

GOLDEN CAMPINE Cockerels. Eggs for setting. Grace Mott, Glenwood, Mich.

SINGLE COMB Black Minorca Cockerels, guaranteed M.—10. Ohas. Schook, Allenton, Mich.

FOR TOULOUSE GEESSE try M. B. NOBLE, Salina, Mich.

PEAFOWL, Pheasants, Bantams, Pigeons, Free circular. JOHN HASS, Bettendorf, Iowa.

BABY CHICKS

WHITE WYANDOTTES and Rocks \$18 per 100; \$9.50 for 50 and \$4.75 for 25. Barred rocks and R. I. Reds \$17 per 100; \$8.75 for 50 and \$4.50 for 25. White Leghorns \$14 per 100; \$7.50 for 50 and \$4.00 for 25. Terms cash with order of at least \$5 for each 100 chicks ordered, balance one or two weeks before chicks are to be shipped. Meadow Brook Hatchery, Mt. Morris, Mich.

CHICKS GUARANTEED—Healthy, sturdy thriving chicks. Flocks that are mated with Michigan Agricultural College cockerels, Barred Rocks, S. C. Anconas, White and Brown Leghorns, pullets and breeding cockerels. Safe arrival, postage paid, catalog free. Fairview Hatchery and Poultry Farms, Route 2, Zeeland, Mich.

BABY CHICKS—S. C. White and Brown Leghorns, Buff Orpingtons, Barred Plymouth Rocks, S. C. and R. C. Reds, White Wyandottes and Anconas. Free range on separate farms. \$15.00 per 100 up. Write for prices. P. W. Stone Hatchery, F. M. Milliken Mgr., Fenton, Mich., Lock Box 44.

PEERLESS CHICKS—Hatched from bred-to-lay S. C. White Leghorns. They are selected long, deep-bodied, with large lopped combs. Liberal discount. Live arrival guaranteed. Catalog free. Reference Zeeland State Bank. Peerless Hatchery & Poultry Farm, Box 9, Zeeland, Mich.

QUALITY CHICKS, eggs. Sixteen standard bred varieties. Best winter laying strains. Free delivery. Reasonable prices. Catalog free. Missouri Poultry Farms, Columbia, Missouri.

HIGH QUALITY utility baby chicks and hatching eggs from certified stock S. C. White Leghorns, English strain, bred to pedigreed cockerels from M. A. C. Chicks \$18.00 per 100; Eggs \$8.00 per 100. Macalwhite Poultry Yards, Caro, Mich.

BABY CHICKS from heavy egg producing strains. English S. C. W. Leghorns, Brown Leghorns, Anconas and Barred Rocks. Hatched from closely culled flocks on free range. 100% live arrival guaranteed. Baker's Hatchery, Jamestown, Mich.

CHICKS—Forest Grove English White Leghorns win again. More prizes and specials than any exhibitor. \$75 Cup. Largest Utility Show in country. None but pedigreed males, selected females used. Catalogue free. Forest Grove Hatchery, Box M, Hudsonville, Mich.

BABY CHICKS. From Michigan's Champion Layers of best Barron Strain. Official pen average 232 eggs per hen in one yr. All mated to Pedigreed Cock birds. All birds Trap Nested. Free descriptive catalogue. Live arrival guaranteed. Strick Poultry Farm, R. 4, Box M, Hudsonville, Mich.

ANCONAS—"Superior Quality" Baby Chicks and Hatching Eggs from our prize winning, heavy laying M. A. C. selected breeding stock. Prices reasonable. Satisfaction guaranteed. Catalog. Mannings Ancona Farm, Coldwater, Mich.

WHITE LEGHORN CHICKS, from prize winning, utility, yearling females with pedigreed males. We specialize in this one variety and breed for winter eggs. Illustrated circular free. Pine Lawn Farm, Route 9, Grand Rapids, Michigan.

BABY CHICKS bargain prices. Barred Rocks, White and Brown Leghorn. Guarantee full 100% alive, free delivery. Hillview Poultry Farm Hatchery, R. 12, Holland, Mich.

BABY CHICKS from heavy egg producing strain. English and American S. C. W. Leghorns closely culled. 100% alive. Circular free. Montella Hatchery, Route 1, Holland, Mich.

BABY CHICKS, 15 Leading varieties. 2 1/2 Million for 1923. The kind that lay early. Large, vigorous, fluffy kind. Lowest prices. Send for large catalog. D. T. Farrow Chickeries, Peoria, Ill.

BABY CHICKS—Remarkable for size and strength. Reasonable prices. Leghorns, Anconas, Rocks, Reds, Wyandottes, Orpingtons, Minorcas, Spanish, Brahmas. Tyrone Poultry Farm, Fenton, Mich.

STURDY CHICKS—Pure Bred-to-Lay Flocks Single Comb White Leghorns, Anconas, Rocks, Reds, Pekin Ducks. Catalog. Sunnyside Poultry Farm, Hillsdale, Mich.

STERLING QUALITY CHICKS—14 varieties, pure bred, inspected flocks. Inspectors who know a chicken. Satisfaction positively guaranteed. Attractive prices. Catalog free. F. F. Clardy, Ethel, Mo.

SELECTED CHICKS from best strains at living prices. All popular varieties. First hatch in January. Hatching eggs. Write for circular and price list. Litchfield Hatchery, Litchfield, Mich.

QUALITY CHICKS for delivery each week after March 1st. S. C. White and Brown Leghorns. 100% live delivery. Catalog free. Standard Hatchery, Box B, Zeeland, Mich.

BABY CHICKS—Six leading varieties. Write your wants. Special prices on large, advance orders. Free catalog. H. H. Pierre, Jerome, Mich.

BABY CHICKS AND HATCHING EGGS Direct from our farm at greatly reduced prices, only 9c up. Barred Rocks, W. Leg. and Anconas. Write quick for particulars and special introductory offer. Model Poultry Farm and Hatchery, Zeeland, R. 4, Mich.

CHICKS, EGGS—White Leghorns, highest quality trapped, pedigreed. O. Streich, Stevensville, Michigan.

TALK IS CHEAP—facts are we offer White Leghorn chicks from high pedigreed Cockerels direct from Hollywood, mated and culled by Prof. Foreman. "The Poultry Wizard," at farmer's prices. Think it over. Circular free. Setting of eggs for names of ten friends who buy Leghorn chicks. Maple Haven Farm, R. 5, Jackson, Mich.

BETTER BRED WHITE ORPINGTON Baby Chicks. 250. Egg Strain. Entered in State Laying Contest. Heaviest Winter Layers. Our Catalog Free. Co-Operative Breeding & Hatching Co., Box H, Tiro, Ohio.

S. C. W. LEGHORN COCKERELS, English strain. Well matured. Will improve your flock. Also eggs for hatching. C. C. Ingham, Mgr. Maplewood Poultry Yards, Allegan, Mich.

CHICKS. From free range selected flocks bred to lay. All popular varieties. Prices right. Send for catalogue. 100% delivery guaranteed. Homer Hatchery, Homer, Michigan.

CHICKS—Low prices for pure-bred stock. S. C. English Whites, Browns, Anconas and Barred Rocks. Catalog free. 100% safe delivery. Postpaid. Bos Hatchery, Zeeland, R. 2, Michigan. John Bos.

1,000,000 PUREBRED CHICKS—Get our 20 page catalog before ordering. Rex Poultry Co., Clinton, Missouri.

BABY CHICKS—Pullets, English White Leghorns from free range flocks, culled for high egg production. Catalogue free. Maple Hatchery and Pullet Farm, Zeeland, Mich.

25,000 PUREBRED chicks weekly. Lowest prices, live delivery guaranteed. Catalog free. Lindstrom Hatchery, Clinton, Mo.

CHICKS—English S. C. W. Leghorns. Park Strain. Barred Rocks and R. I. Reds \$10 per 100 and up. 100% alive delivery. Waterway Hatchery, R. No. 4, Holland, Mich.

BABY CHICKS—S. C. W. Leghorns. Heavy egg producing strain, closely culled. Write for particulars. Louis L. Van Huis, Holland, Mich., Route 1.

HIGH GRADE CHICKS—English strain, White Leghorns. Catalogue free. H. K. Brower, Hamilton, Mich., R. 1.

CHICKS—English Leghorn exclusively, culled flocks mated to Michigan Agricultural College males. M. A. C. Inspected. Sunny Crest Poultry Farm, Hamilton, Mich.

EGGS THAT HATCH. Chicks that live. Low prices. Won over 5,000 prizes. Furnished Government and schools. Catalog free. Sterling Poultry Farms, Box 30, Sterling, Ill.

BABY CHICKS that will lay and pay. Barron strain. English Leghorns, Brown Leghorns, Anconas. Instructions free on care and feeding of poultry. Send for catalog. Karsten's Farm, Zeeland, Mich.

BABY CHICKS—White Wyandottes, White Rocks, Barred Rocks, R. I. Reds and White Leghorn. Leghorns from M. A. C. 250 egg strain. Write for price list. Fenton Chicken Hatchery, Fenton, Mich.

RICHARDSON Rocky Ridge Barred Rock's Pure Parks strain Baby Chicks, \$16 per 100. Hatching eggs \$2.00 per setting. Hanover, Mich.

CHIX \$12 per hundred up. Big, fluffy, vigorous, eight pure bred varieties. Eighth season. Circular free. Silver Spring Hatchery, Box 97, Abingdon, Ill.

LOOK 75,000 Hi-Grade Chicks 12c and up. 10 varieties. Best ever produced. Hatching eggs. Circular. Lawrence Poultry Farm, R. 7, Grand Rapids, Mich.

HELP WANTED

WANTED—Experienced reliable farmer to work 200 A. farm. General farming. Care for and develop Guernsey cattle, hogs, poultry. Require man to furnish at least one hired man. Desires man, who by reason of age, or other reasons, can only do light work, feeding, etc., but has sons to do the farm work. B. S. Knapp, Monroe, Mich.

WANTED—Man and wife; woman to assist in owner's residence, man to be good milker and have knowledge of gardening. Wages for both \$85.00 and board per month. All modern conveniences. Bazley Stock Farm, Ypsilanti, Mich.

WE PAY \$200 monthly salary and furnish rig and expenses to introduce our guaranteed poultry and stock powders. Bigler Company, X 683, Springfield, Illinois.

WANTED—Experienced boy for work on 80-acre farm. No cigarette user. Write for particulars. Washtenaw Co. Box 224, Michigan Farmer, Detroit.

WANTED—Young couple without children, to work on small farm just out of city. Address Box M-8, Michigan Farmer, Detroit.

POSITIONS WANTED

WANTED—Position as foreman on large farm; life experience; A-1 reference. I. Liebler, R. 4, Birmingham, Mich.; Box 330.

SITUATION WANTED—Rel., white, child's nurse; no cooking. Hospital experience. Address J-24, Michigan Farmer, Detroit.

WANTED—Position as manager on farm, experience in registered stock. Best reference. R. B. Coffey, Fowlerville, Mich.

POULTRY

ATTENTION—GUARANTEED BABY CHICKS
WORLD'S GREATEST EGG PRODUCERS

Tom Barron
Imported
White
Leghorns



Sheppard
Famous
Anconas
Direct

From grand selected flocks on free range, built direct from laying contest winners. Strong, vigorous chicks that will prove great layers. Flock culled by poultry experts and headed with vigorous pedigreed males from the best laying strain in the country, postpaid. Full live delivery guaranteed. Fine instructive catalog free. Reference two banks.

Silver Ward Hatchery, Box 30, Zeeland, Mich.

BABY CHICKS

that grow into real laying flocks	100	500	1000
Barred Rocks	\$15.00	\$72.50	\$145.00
Rhode Island Reds	15.00	72.50	145.00
White Leghorns	13.00	62.50	125.00
Anconas	13.00	62.50	125.00

Order from this ad, or write for literature.

PETERSBURG HATCHERY, Michigan

Petersburg, Michigan

STERLING CHICKS

White Leghorns and Anconas. Our stock is scientifically culled by experts and headed by large vigorous males. Thus assuring you strong, healthy, bred to lay chicks. That will live and grow. Real money makers. 100% live delivery guaranteed. Post Paid. Catalog free. Sterling Poultry Farm & Hatchery, Zeeland, Mich. (Member Michigan Baby Chick Ass'n.)

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at new low prices. Instructive catalog FREE. Brummer's Poultry Farm, Box 20, Holland, Mich.

Best Payer, Heavy Laying, Pure Bred Tom Barron English White Leghorns, Rhode Island Reds, Barred Rocks. Strong healthy chicks from Best Inspected and Approved Stock. Order now at

BREEDERS' DIRECTORY

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

Andy Adams
LITCHFIELD, MICHIGAN
Michigan's Leading Live
Stock Auctioneer
DATES and TERMS on APPLICATION



5 Grand Champions 28 FIRSTS

and other prizes. Such was the remarkable performance of our animals at the 1922 Michigan State Fair. What could be better proof of the unvarying quality of our animals or more representative of the ideal for which we have striven? Our success is the natural culmination of our efforts and our reward for years of careful and costly breeding. Ours is symbolic of the best. Mediocrity is not tolerated.

Our success can also be yours. Our young animals are the finest examples of breeding and will do much to improve your herd. Get the blood of the King of Sires **EDGAR OF DALMENY** into your herd and you will have individuality, distinction and quality.

The services of our Grand Champion Stallion, **GEORGE HENRY** are available.

Your correspondence and inspection are invited.

WILDWOOD FARMS
ORION, MICHIGAN
W. E. SCRIPPS, Prop. SIDNEY SMITH, Supt.

Registered Aberdeen-Angus 10 heifers, 6 bulls from eight to fourteen months. Best of breeding. The growthy kind that make good. Reasonable. Inquire of **F. J. Wilber**, Ohio, Mich.

Registered Guernseys

2 Choice Heifers about a yr. old for \$900. Bull old enough for light service, out of Ester Erwin who is making a fine record \$150. J. M. Williams, No. Adams, Mich.

GUERNSEYS—REGISTERED BULL Calves. Containing blood of world champions. A. R. Co. wa. Federal inspected. **HICKS' GUERNSEY FARM**, Saginaw, W.S. Mich.

Wallinwood Guernseys

Young bulls from A. R. cows for sale. **F. W. WALLIN**, Jenison, Mich.

For sale Registered Guernsey cows, May Rose Breeding also bull calves \$50 each. Registered A. R. dams. **JOHN EBELS**, R. 2. Holland, Mich.

WINNWOOD HERD

Registered Holsteins

?

Ask us about a Real Bull a
Maple Crest or an Ormsby.

JOHN H. WINN, Inc., Rochester, Mich.

The Traverse Herd

We have what you want in **BULL CALVES**, the large, fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

FOR SALE KING SEGIS BREEDING

Born Sept. 26, 1922. His dam recently completed semi-official test giving 12,475.3 pounds of milk and 449.004 pounds of butter. Average figures recently given show 3500 pounds of milk in a year for Michigan cows. You will notice that this cow shows an increase of 400%. This milk production combined with show type is a decided asset as a future herd sire.

GRAND RIVER STOCK FARMS Jackson, Mich.
Corey J. Spencer, 111 E. Main St.

Holstein Friesian heifer and bull calves, purebred registered and high-grade. Price \$20 up. Splendid individuals and breeding. Write us your requirements. **Browncroft Farms**, McGraw, N. Y.

REGISTERED HOLSTEINS
A few of those large size, Straight Top cows for sale. Some with good official records, these would be excellent for a foundation herd. **I. M. SHORMAN** Fowlerville, Mich.

Holstein Friesian bulls all ages from A. R. O. dams with records up to 30 lbs. from one of best average record herds in state. Prices reasonable. **I. A. Kidney**, Brant, Mich.

Bull adv. Jan. 27 sold to Ex-Gov. Warner. Daughters of his bred to son of largest semi record heifer in Wayne Co. Terms \$50 a year. Federal tested. **M. L. McLAULIN**, Redford, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write **GEORGE D. OLARKE**, Vassar, Mich.

DISPERSION SALE

Registered Holstein-Friesian Cattle On Farm No. 3 Saturday, March 10, 1923

Farm sale at 10:00 o'clock A. M. Cattle sale at 12:30 P. M.

Herd under State Supervision. 60 day retest Guarantee.

4 bulls, 2 from 30 lb. dams. 2 with yearly backing.

50 cows and heifers. 4 thirty lb. cows. 8 others with records from 25 to 29 lbs.

2 daughters of 1000 lb. cows. 5 now on S. O. Test.

14 daughters of King Ona Champion, one of the best bred bulls in the World, others bred to him.

The dams of our Herd Sires have records of 30, 33 and 35 lb. One with 1007 lbs. 305 days, one with 1344 lbs. in 1 year.

Catalogs ready March 1st.

MUSOLFF BROTHERS

South Lyon, Michigan (32 miles from Detroit, Mich.)

HERE IS A GOOD ONE

A Yearling son of **MAPLECREST DE KOL HEN-GERVELD**, sire having three sisters each with records of over 1200 lbs. of butter in a year, two of them former World Champions. Cal's dam sister to three, each with records of over 1200 lbs., by **PONTIAC AGGIE KORNDYKE**. This combination of breeding has produced more 1000 to 1200 lb. cows than any other of the breed. If yearly production counts with you, where can you equal it? Price \$150.00 for quick sale.

HILLCREST FARM KALAMAZOO, MICH.

Jersey Bull Calves for sale from 1 to 12 months old. From high Producing Dams, sired by Sunburst Brigs' Majesty. Farmer's Prices. Write your wants to **H. B. Welborn**, R. No. 1 Kalamazoo, Mich.

BUTTER BRED JERSEY BULLS
CRYSTAL SPRING STOCK FARM,
Silver Creek, Allegan County, Michigan.

FOR SALE: Jersey bulls ready for service. All cows Register of Merit. Accredited herd. **SMITH AND PARKER**, R. 4, Howell, Mich.

Lillie Farmstead Jerseys For sale, 3 heifers bred to freshen this fall, 2 bull calves, 6 to 9 mo. old. **Colon C. Lillie**, Coopersville, Mich.

Registered Jersey cattle, young bulls, for sale. True, pure bred. **J. L. CARTER**, Lake Odessa, Mich.

Produce Your Own Feeders
under **EARLRIPE**
HEREFORD BEEF
PLAN, which guarantees maximum prices. Investigate personally the success of other Michigan Farmers. For information write **T. F. B. Setham & Sons**, (Herefords since 1839), St. Clair, Mich.

HEREFORDS

For Sale at Farmer's prices.
5 yearling heifers
10 of the above sired by our \$5200 Repeater bull. We have others not related. This is an opportunity to start in good stock at a moderate price.

ALLEN BROS.

616 So. West St., Kalamazoo, Mich.

Polled Hereford Cows

for sale and will pay 1/2 as much for her calf when ready to wean as you pay for the cow.

Also young bulls for sale.

Cole & Gardner, Hudson, Mich.

FOR SALE

Polled Shorthorn Cows & Heifers
in calf and calf by side. Also a few young bulls. Herd headed by Victor Sultan and Royal Nonpareil.

We can please you in richly bred cattle with quality at farmers' prices.
GEO. E. BURDICK, Mgr.
Branch County Farm, Coldwater, Mich.

Richland Shorthorns

Special offer on several bulls at Farmers' prices. Suitable for grading up purposes where beef is required. Also several high class herd headers of the best of breeding.

C. H. Prescott & Sons,

Office at Tawas City, Mich. Herd at Prescott, Mich.

Shorthorns Bidwell Revolution Jr. heads herd—wood 3d, 2d Dam, Imp. Rosewood 8th. Now offering one good roan two year old bull out of a Marr Mar gold dam, also a few cows and heifers safe in calf. Prompt attention to correspondence—visitors welcome. State Accredited herd. One hr. from Toledo, O. N.Y.C. Ry. **BIDWELL STOCK FARM**, Tecumseh, Mich., Box D

Burr Oak Farms offer ready for service Shorthorn bulls, sired by Flash Railroad, Saline, Mich.

Milking Shorthorns priced reasonably. An accredited herd selected for beef and milk. **Beland and Beland**, Tecumseh, Michigan

Clayton Unit Shorthorn Breeders' Assn. Scotch, Scotch Top and Milking Shorthorns for sale all ages. **W. J. Hinkley**, Sec'y, Flushing, Mich.

Short Horn Bull for Sale, Registered with Papers **JOHN EGGLE Jr.**, Tustin, Mich.

DOUBLE Standard Polled Shorthorns, milk strain. Bulls and Heifers all ages at farmers' prices. **Paul Quack**, Sault Ste. Marie, Mich.

Red Poll Cattle, Bulls, Cows and Heifers, E. S. Carr, Homer, Mich. Yorkshire Swine.

HOGS

PRIVATE SALE of Bred Duroc

sows and gilts. This is one of the highest class offerings in Michigan spring gilts in moderate flesh, weigh 360 to 375 lbs. These are bred to Forcaster Jr. (the best Pathfinder bred boar in the State. He took 2nd at Illinois State Fair as jr. ylg. in 1921) and 8 Majestic Sensation 1st sr. ylg. at State Fair and Grand Champion at Grand Rapids. Write for private sale folder.

BROOKWATER DUROC JERSEYS
SPRING GILTS BRED FOR MARCH AND APRIL LITTERS
ALSO A FEW GOOD BOARS
Herd sires: Panama Special 55th, Big Bone Giant Sensation, Brookwater Principal Col. and Brookwater Orion Sensation. All are exceptional individuals and have proven their ability to sire good ones.
BROOKWATER FARM, Ann Arbor, Michigan
H. W. Mumford, Owner. **J. B. Andrews**, Lessor.

Duroc - Jerseys

We can spare a limited number of big, roomy, growthy bred gilts due to farrow in April, priced very reasonable. Can also spare a few fall pigs either sex. Write for prices.

LOEB FARMS

Charlevoix, Michigan

"The Home of Grand Champions"

Whitney Farms Durocs

We offer an excellent line of bred sows and gilts as well as two boars that are real sires. Priced to sell. Write for pedigrees.

WHITNEY FARMS, Whitney, Mich.

Woodlawn Farm Duroc Hogs meet present day requirements, length, size and quality. Young stock for sale at reasonable prices and fully guaranteed. Write your wants. **W. E. BARTLEY**, Alma, Mich.

I AM OFFERING BRED SOWS

fall yearling and spring gilts, bred for March and April farrow, that are tops. Mated to O. C. K. Col. 2nd and Orion Giant Col. Write for price list.

W. C. TAYLOR, Milan, Mich.

Duroc—Jerseys A few Pathfinder Gilts Bred to a good son of Foust's Top Col., E. D. Heydenberk, Wayland, Mich.

DUROC-JERSEYS 15 bred Gilts for sale. **CAREY U. EDMONDS**, Hastings, Mich.

Duroc fall boars sired by Master Col. Walt. Bred sows and gilts. Cholera immune. **JESSE BLISS & SON**, Henderson, Mich.

Is It Worth While?

A real boar pig sired by Woodford Sensation, Dams of Defender or Pathfinder breeding.

If so,

We have them of Sept. farrow, not only showing extreme quality, but greater size than you will expect to find. Follow M 29 to

Kope-Kon Farms, Coldwater, Mich.

Benjamin's BIG TYPE CHESTER WHITE'S
Early maturing, prolific, heavy weight, prize winner kind from bloodlines of Champions and Grand Champions, now making big money for thousands. I have started more breeders on road to success than any living man. Let me help you. Easy to start. Costs little. **B. S. Benjamin** R. F. D. 10, Portland, Mich.

CHESTER WHITES

Boars all sold. Bred sow sale March 9th. **FRED L. BODIMER**, Reese, Mich.

Chester Whites. Choice spring gilts bred to Giant, 2nd prize boar at State Fair. Also fall gilts. **LUCIAN HILL**, Tekonsha, Mich.

CHESTER WHITES Bred sows and gilts, summer boars and fall gilts C.O.D. **ALBERT DORR**, Clinton, Mich.

Chester Whites, We are offering some bred sows and gilts. Prices reasonable. **Weber Bros.** 10 Mile and Ridge Rds, Royal Oak, Mich.

BARNEY SELLS DUROCS.

MR. J. C. BARNEY, of Coldwater, the veteran judge who distributes the ribbons at so many of the live stock shows over the state, winds up his season's crop of Durocs at public sale. A barnfull of healthy bidders quickly absorbed the offering at the solicitation of Auctioneers Waffle, Fowler and Phillips. While prices did not rule high, the returns were satisfactory in view of the fact that only about one-third of the season's crop of pigs was left to dispose of, some sixty head having previously been sold at private treaty. Three tried sows of the popular type and breeding, bred to Wolverine Woodford Sensation, were the attractions of the sale. Mr. E. M. Hawes, a prominent Duroc breeder, of Coldwater, secured two of them on bids of \$67.50 and \$68, and the third went to John Faygart, of Bronson, at \$56. The twenty-six head brought a total of \$976.50, an average of \$37.50. The list of those selling above \$30 follows:

1. E. M. Hawes, Coldwater...\$67.50
2. John Faygart, Bronson.....56.00
3. E. M. Hawes.....68.00
4. Jas. Blauvelt, Coldwater....45.00
5. John Smith, Coldwater.....51.00
6. Ora Hopingarnier, Bronson..49.00
7. I. Noblet, Quincy.....41.00
8. W. G. Garvin, Coldwater...34.00
9. W. G. Garvin.....30.00
10. Orren Cole, Dowling.....35.00
11. George Rock, Battle Creek...35.00
12. Wm. Benhke, Coldwater....31.00
13. Jas. Baluvelt.....35.00
14. Jake Swartz, Sturgis.....41.00
15. Rex Dibble, Union City.....37.00
16. John Renshaw, Batavia.....34.00
17. Fay Moore, Quincy.....40.00
18. W. G. Garvin.....30.00
19. John Faygart.....38.00

SHORTHORN SHOW AWARDS.

A SHORTHORN show of the sale cattle was held February 2 in the judging pavilion at the Agricultural College. This show attracted a great deal of attention and the placing of the ribbons by Mr. F. W. Harding was watched with keen interest. The list of awards were as follows:

Cow with Calf by Side—First, Bedell & Wheatlake, Big Rapids, Mich., on Snowball 727315; 2nd, M. A. C., of East Lansing, Mich., on College Mysie 10th 947743; 3rd, Oscar Wilson, Mason, Mich., on Nora E. 766045.

Cow Calved Before September 1, 1919—First, Bedell & Wheatlake, on Snowflake 726912; 2nd, P. P. Pope, Mt. Pleasant, Mich., on Mayflower 2nd 631687; 3rd, M. A. C., on College Melody 2nd 721414.

Cow Calved Between September 1, 1919, and September 1, 1920—First, John Lessiter's Sons, Orion, Mich., on May Amaranth 943790; 2nd, F. S. Postal Estate, Evart, Mich., on Flora 11252696; 3rd, P. P. Pope, on Scottish Maid 4th 900835.

Heifer Calved Between September 1, 1920, and September 1, 1921—First, John Lessiter's Sons, on Eula 1010982; 2nd, S. E. Booth, Owosso, Mich., on Betty 1104940; 3rd, S. E. Booth, on Princess Pat 1035675.

Heifer Calved After September 1, 1921—First, McLachlan Bros., Evart, Mich., on Crystal's Queen 1128053; 2d, John Lessiter's Sons, on Thelma 1127260; 3rd, McLachlan Bros., on Fair Beauty 1128054.

Bull Calved Before January 1, 1922—First, McLachlan Bros., on Victor Torchbearer 1077745; 2nd, John Lessiter's Sons, on Dale Leader 1113954; 3rd, L. C. Kelly & Son, Plymouth, Mich., on Armada Sultan 1161596.

Bull Calved After January 1, 1922—First, John Lessiter's Sons, on Craiglea 1127256; 2nd, W. E. Cummings, on Roan Jupiter 3rd; 3rd, W. E. Cummings, on Roan Jupiter 2nd.

Champion Cow—John Lessiter's Sons, on May Amaranth 943790.

Champion Bull—John Lessiter's Sons, on Craiglea 1127256.

Summer forage crops should be taken into consideration this month. Set aside a suitable piece of ground for the forage and give the pigs a treat. The spring crop of pigs will fare much better on the rape forage and the feeder will gain more satisfaction from their growth and thriftier appearance.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Advice through this column is given free to our subscribers. Letters should state fully the history and symptoms of each case and give name and address of the writer. Initials only are published. When a reply by mail is requested the service becomes private practice and \$1 must be enclosed.

New Hoof.—Our 1,500-pound horse lost one hoof last fall; the new hoof seems to grow slow. What shall I apply? N. O. C., Middleville, Mich.—Apply one part coal tar and ten parts of vasoline to hoof daily. Doubtless the new horn will need a little trimming to keep it in shape. The foot should be kept clean.

Wounded Head.—A rusty nail punctured the head of my mare, midway between eye and ear. The hole is one and a half inches deep and the wound fails to heal. Will this injury terminate in poll-evil? C. C. S., Jackson, Mich.—No danger of poll-evil. Pack the cavity with one part iodoform and eight parts boric acid.

Eczema.—My twelve-year-old horse has eczema, affecting his legs. J. S., Metropolitan, Mich.—Apply one part lysol and thirty parts water twice a day. Do you keep the legs clean? Filthy legs usually itch.

Winter Itch.—Have two horses that are troubled with mange, affecting their legs. The legs are made worse by rubbing against the stall wall. Shall I clip off the long hair? W. C. S., Wyandotte, Mich.—During cold weather the long hair should be left on the legs. Apply one part creolin, fifty parts water to sores, twice daily. The balsam of Peru applied to sores, and a dry wool dressing and bandage has given me good results in the treatment of such cases. Take plenty of time while applying this medicine. Give horse one-half ounce of Fowler's solution in feed or in drinking water twice a day.

Eversion of Uterus.—My four-year-old cow has been troubled with eversion of womb since she calved, but has seemingly recovered. Shall I breed her again? Several of my cows have sore inflamed eyes. Another cow has been lame since November, 1922, caused by stepping on nail. R. G. C., Ewart, Mich.—Place cow in stall, with floor three or four inches lower in front than in rear end; this position of the body will greatly assist nature in effecting a cure. Dissolve half ounce of boric acid in one quart of clean water, apply to sore eyes three times daily. Pack hole in foot with equal parts of iodoform and boric acid daily.

Sore Back.—Ever since last summer my collie dog has kept his back sore by licking it. When left alone the sore dries and scab forms, but he seems to persist in biting it enough to make it raw. F. H., New Boston, Mich.—Occasionally paint sore with tincture of iodine. Apply boric acid daily. Wearing a muzzle might prevent his biting back.

Heifer Has Not Come in Heat.—I have heifer sixteen months old which has not been in heat. L. M. R., Pittsford, Mich.—Yohimbine hydrochloride is the best known remedy, but is expensive. Give thirty drops of fluid extract of nux vomica at a dose two or three times a day, flush the vagina twice daily, use warm water.

Suppression of Urine.—Have young cow due to freshen soon, which seems to have some trouble in passing her urine. J. K., Gladstone, Mich.—Give her half ounce of acetate of potash whenever you believe she needs it to stimulate her kidneys into action.

Cow Gives Curdled Milk.—Our six-year-old cow is due to freshen the last of March and for the past week she has been giving curdled milk. What is the cause? C. H., Leslie, Mich.—She suffers from bacterial infection of udder. Why don't you dry her? Occasionally milk her, if so, perhaps she will be all right when she freshens. Give her a teaspoon of nitrate of potash daily.

Milk Fever—Weakness.—Cow had milk fever, veterinary gave her oxygen treatment, got well enough to eat and drink, but one hind leg is badly swollen and discharging pus. I am going to place her in slings. Should I have done this earlier? H. M., West Branch, Mich.—It is considered good practice to assist cow in getting up, but if unable to stand without sling, let her down, and persist in treatment, then after a few hours she will get up without help. Give her thirty grains of potassium iodide, also thirty drops of fluid extract of nux vomica at dose two or three times daily. Use the sling.



Prepare YOUR HORSES for Spring Work

Time will mean money to you, Mr. Farmer, one of these days

—when spring comes on, when the sun begins to shine.

The acres you plow, or harrow, or sow, each day will depend entirely upon the good condition of your team.

Condition them now with a course of

DR. HESS STOCK TONIC

You can feel it on the lines

It helps them shed their winter's coat, whets their appetite, tones up their digestion, cleans out the bowels and kidneys, drives out the worms.

Feed your workers Dr. Hess Stock Tonic and you will soon discover that you have a team before you that can do an honest day's work, without a pant or a tremble of the muscle. They will be there for business—and willing.

Excellent for mares in foal—and colts of any age. GUARANTEED.

Tell your dealer how many horses or mules you have; he has a package to suit.

25 lb. Pail, \$2.25 100 lb. Drum, \$8.00

Except in the far West, South and Canada.

Honest goods—honest price—why pay more?

DR. HESS & CLARK Ashland, O.

Dr. Hess Dip and Disinfectant
Keeps the Dairy and Stables Healthful and Clean Smelling

Bred Sow Sale of Chester White Swine

MARCH 8th, 1923

Consisting of 37 bred gilts. Two tried sows and one spring yearling boar. Strictly big type with quality. Breeding and individuality of the very best to be had. Sale will be held at the Alexander Farm 6 miles north of Vassar in heated sale pavilion. Send for catalog.

ALEXANDER & BODIMER,

Vassar, Mich.

AUCTION

The undersigned will sell on the premises 3-4 mile north of Corunna

Wed. March 7

Commencing at 10:30 o'clock. Lunch at Noon. Free Auto will meet Trains and Interurban Cars. Twelve registered Shorthorn females, mostly with calf by side.

One Bull, 18 months old. Also Fifty fine wool breeding ewes, 1 to 5 yrs. old. A few tools.

This is a rare chance to get into the good Shorthorn herd. All are tuberculin tested.

TERMS—Nine months time on good approved bankable notes at 7 per cent interest.

C.M. BILHIMER, Proprietor

ANDY ADAMS, Litchfield, and NORM MORRISH, Flushing, Auctioneers.

HOGS

SPOTTED POLAND BRED SOW SALE

February 24, 1923

G. S. COFFMAN Coldwater Mich.

Chester White Bred sows, fall pigs and service boars. Big type with quality and the best of breeding. Also some young Shorthorn heifers. JOHN C. WILK, Alma, Michigan

O. I. C's and Chester Whites

Gilts sired by Mich. State Fair Gr. Champion 1921, and bred for March and April farrow to Mich. State Fair Jr. Champion 1922, the common sense type and price.

ANDY ADAMS, Litchfield, Mich.

O. I. C. 20 large growthy gilts farrow in Mar also fall boar pigs. CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C's—20 last spring gilts bred to farrow in Mar. and April, big growthy stock, recorded free. 1/4 mile west of Depot, City's phone. OTTO B. SCHULZE, Nashville, Mich.

O. I. C. GILTS bred for March and April farrow. H. W. MANN, Dansville, Mich.

O. I. C. Bred gilts and boars all sold. Am taking orders for fall and spring pigs. A. J. BARKER & SON, Belmont, Mich.

O. I. C's. Bred Sows all sold. Some young sows for free. One Extra Good 11 month old Boar. Fred W. Kennedy, Plymouth, Mich.

O. I. C's March boars, bred gilts, July and Aug. gilts. Young Brown Swiss Bulls. Mito H. Peterson, Elmhurst Farm, R-2 Ionia, Mich.

O. I. C's. Am offering a few fall boars and 3 gilts bred for May farrow. C. J. THOMPSON, Rockford, Mich.

Large Type Poland China BRED SOW SALE

FEBRUARY 22, 1923

Write for Catalogue A. A. FELDKAMP, Manchester, Mich.

Leonard's Big Type P. C. gilts sired by Leonard's Liberator and Orange Clansman and fall Pigs at bargain Prices. E. R. LEONARD, St. Louis, Mich.

Saginaw Valley Herd of O. I. C. & Chester White Swine. 40 Bred. Gilts, sired by O. I. C. Mich. Boy and Selection 1st, bred to Jumbo's Giant 1st, son of Grand Champion Boar at Mich. State Fair. Photos on request. John Gibson, Fosters, Mich. R. 2.

LARGE TYPE P. C.

As good as they grow. Fall pigs either sex. Bred sows for sale sired by the Wolverine, M. & W's Orange, B's Clansman, Alaska and Black Buster, Cholera immune. Sale February 21st.

N. F. BORNOR, Parma, Mich.

L. T. P. C.

Choice Gilts \$25 to \$40. Boars \$30. Fall Pigs \$15. HART AND CLINE, Address F. T. HART, St. Louis, Mich.

Large Type P. C. Largest in Mich.

A few fall pigs for sale. Sired by "The Wolverine" a grandson of "The Rainbow and Big Bob" the greatest yearling boar I ever owned has size combined with quality. Come and see the real kind.

W. E. LIVINGSTON, Parma, Mich.

Francisco Farm Poland Chinas

Spring gilts sired by a grandson of National Grand Champion Sow and bred to a grandson of National Grand Champion Boar. Now ready to ship.

P. P. POPE, Mt. Pleasant, Mich.

Boars at Half Price From Mich. Pioneer herd of Big Type Poland Chinas. We have been breeding them Big for 30 years. Our hogs represent the blood lines of Giant Buster, The Clansman, Liberator, The Yankee, Big Bob, etc. Write for what you want.

JNO. C. BUTLER, Portland, Mich.

Big Type P. C. some very choice boars double im Bmune, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

BIG TYPE POLANDS

spring boars all sold, fall pigs either sex at farmers' prices. Tuscola Clansman is our young herd sire, first prize pig at Mich. State Fair. Litter from him will improve your herd. Public sale Feb. 1. Write today for catalog. DORUS HOVER, Akron, Mich.

L.T.P.C. Gilts bred or open, two good boars and will again. They have always made good, and will again. Write for my plan of selling.

M. M. PATRICK, Gd. Ledge, Mich.

Walnut Alley Big Type P. C. gilts now ready to ship they are bred to the best boar I have seen this fall.

A. D. GREGORY, R. 3, Ionia, Mich.

L. T. Poland Chinas spring boars and reasonable prices, also fall pigs either sex of popular blood lines. Aberdeen-Angus bulls, Heifers and Cows that are show winners. Write or come.

E. A. CLARK, R. 3, St. Louis, Mich.

Maplehill Poland Chinas. Attractive spring gilts bred to a grandson of Liberator, Michigan.

Profitable, Practical Poland Chinas, bred gilts.—Blood-lines Disher's Giant, Big Bob; Yankee. JAS. G. TAYLOR, Belding, Mich.

Big Type Poland Chinas

G. A. BAUMGARDNER, R. 2, Middleville, Mich.

For Sale—Choice Poland China fall boar pigs also can spare a few bred sows and gilts from herd.

WESLEY HILE, Ionia, Mich.

Large Type Poland China Gilts sired by Mich. Liberator, & Big Checkers, Bred to model Giant and Mich. Liberator 2d. for March & April farrow. George F. Aldrich, R. 6 Ionia, Mich.

SPOTTED POLAND CHINAS

Bred sows and gilts sired by King Wonder 30035 bred to Perfection Builder also fall boars and gilts. If interested write for prices and photo of what you want.

W. T. JEAN, Worthington, Indiana

Lone Maple Farm Big Type Poland Chinas. Nothing for sale at present.

F. R. DAVIS & SON, Belding, Mich.

Large Strain P. C. a few choice gilts left. Bred for April farrow. You can't get the breed ing nor price. H. O. SWARTZ, Schoolcraft, Mich.

P. C. Choice gilts sired by a son World Champion Big Bob and 1075 Peter Pan. Bred to Model Clansman, also fall pigs. C. E. Garnant, Eaton Rapids, Mich.

Hampshires spring boars and bred gilts from order now or you may be too late. 10th year.

JOHN W. SNYDER, R. 4, St. Johns, Mich.

Hampshire Bred gilts \$20, \$25; bred sows \$30. \$50. Guarantee safe delivery; registered free.

C. F. LUCKHARD, Bach, Mich.

Registered Hampshires, Bred sows and gilts, fall inspection invited. Clarence L. Campbell, Parma, Mich.

SHEEP

800 BRED EWES FOR SALE

In lots of 50 or more, black faced, from 1 to 4 yrs old; no broken mouths, in good condition, bred to Shropshire and Oxford rams to lamb May first. Located 22 miles S.W. of Detroit on Detroit and Toledo electric and Dixie Highway. Telegraph address, Rockwood.

Almond B. Chapman, So. Rockwood, Mich.

Large, Well Covered, registered Shropshire ewes bred to rams of merit in lots to suit. Flock established 1890.

O. LEMEN & SONS, Dexter, Mich.

Reg. Delaine ewes and ewe lambs for sale.

CALHOON BROS., Bronson, Mich.

HORSES

FOR SALE Black Percheron Stallion, Lodi June 10, 1917. Wt. 2200. Extra good one. Sire and dam imported. Wm. Bird, St. Johns, Mich.

For Sale 2 Good Registered Belgian Stallions one 12 and one extra 3 year old ton type. This ad. will not appear again. Emery Olmstead, Coldwater, Mich. R-1

FOR SALE Black Percheron Stallion, foaled May 17, 1917. Sired by General 67486 Grand Champion American bred stallion at Chicago 1911. Dam sired by imported Turenne 27407.

R. G. PALMER, R. 4, Belding, Mich.

For Sale First Class Percheron Stallions also a car of Grade. Draft colts. Chas. Bray, Okemos, Mich.

TRY a Michigan Farmer Classified Liner—They cost little and bring big results.

LATEST MARKET REPORTS

GRAIN QUOTATIONS

Tuesday, February 20.

Wheat.

Detroit.—No. 2 red \$1.38; No. 2 mixed \$1.36; No. 2 white \$1.38.
Chicago.—No. 2 red \$1.37; No. 2 hard \$1.21@1.22; May \$1.20½.
Toledo.—Cash \$1.38½.

Corn.

Detroit.—Cash No. 2, 80½c; No. 3 yellow 78½c.
Chicago.—No. 2 yellow 74@74½c.

Oats.

Detroit.—Cash No. 2 white at 50c; No. 3, 48½c.
Chicago.—No. 2 white at 46@46½c; No. 3 white 44½@45½c.

Beans.

Detroit.—Immediate and prompt shipment \$8.
Chicago.—Choice hand-picked Michigan beans \$8.40@8.50; red kidneys at \$9.00.

Rye.

Detroit.—Cash No. 2, 90c.
Chicago.—None.
Toledo.—Cash 91c.

Seeds.

Detroit.—Prime red clover cash at \$13.20; April \$12.20; alsike at \$10.40; timothy \$3.30.
Toledo.—Prime red clover cash at \$13.35; alsike at \$10.60; timothy cash at \$3.30.

Hay.

Detroit.—No. 1 timothy \$16@16.50; standard \$15.50@16; light mixed at \$15.50@16; No. 2 timothy at \$14@15; No. 1 clover \$13@14; rye straw \$11.50@12; wheat and oat straw \$11@11.50 per ton in carlots.

Feeds.

Bran \$36.50@37; standard middlings \$35.50@36; fine do \$37@37.50; cracked corn \$36; coarse cornmeal \$34; chop \$30 per ton in 100-pound sacks.

Fruit.

Apples.—Jonathans \$5 a bbl; Kings \$5; Northern Spies \$4@6; Greenings \$5; Wageners \$4.

WHEAT

Wheat prices advanced slowly for over two weeks in spite of an apparent predominance of advance influences. Speculative buying was partly responsible for the upturn and the relinquishment of some of these holdings caused a sharp reaction last week after values had worked up close to the former high point of the season. In spite of the break, however, prices are but little lower than a week ago.

CORN

Corn is in a stronger position statistically than wheat or rye and the market shows it. Producers have sold an enormous quantity on the recent bulge and primary receipts have expanded about 30 per cent. Buying for shipment to eastern and southern consuming sections is rather slow, but export sales have become brisk with about 3,000,000 bushels disposed of for the week.

OATS

After lagging behind other grains the oat market came to life last week, largely because of speculative buying, but shipping demand at terminals also shows improvement. Primary receipts have declined and the demand at terminals is fairly active. The Argentine surplus for export is estimated at 40,000,000 bushels.

SEEDS

Seed markets appear to be working into a stronger position and have recovered much of the loss in recent weeks. At Toledo, receipts of red clover for the season to February 10th were 37,901 bags, compared with a five-year average of 23,957 bags. Receipts of alsike were 6,100 bags and timothy seed 15,280 bags, compared with five-year average of 7,222 bags and 37,924 bags respectively.

FEEDS

The tone of feed markets is firmer with advances of 50 cents to \$1 on cottonseed meal, and bran and middlings close to the highest point of the season. In spite of a fairly high rate of operation, flour mill offerings of bran for prompt shipment are light while

for March and April shipment the supply is large and selling at a discount.

POULTRY AND EGGS

Egg prices advanced sharply early last week. The beginning of Lent increased the demand from consumers and cold weather was a stimulating factor by curtailing receipts, but these expanded again toward the close and part of the advance in prices was lost. The cold weather also interfered with country collections and checked production which will be reflected in the receipts later on. It is unlikely that this advance will be long sustained, however.

Detroit.—Eggs, fresh candled and graded 36@37c. Live poultry, springers 27c; light springers at 24c; heavy hens 28c; light hens 24c; roosters 15c; geese 18@20c; ducks 22@28c.

Chicago.—Eggs, miscellaneous 33@34c; dirties 26@29c; checks 25@26c; fresh firsts 34@34½c ordinary firsts 30@32c. Live poultry, hens 25c; springers 27c; roosters 17c; ducks at 23c; geese 16c; turkeys 25c.

BUTTER

Severe weather which demoralized transportation in Wisconsin and Minnesota threw a scare into the butter market last week and advanced prices sharply. Chicago was most affected as a possible shortage of butter to

deliver on February contracts caused frantic buying by speculative interests. Eastern markets lacking the speculative activity did not advance so rapidly, leaving Chicago the highest market.

Chicago.—52c; New York 51c. In Detroit fresh creamery in tubs sells for 48½@49c.

POTATOES

Potato prices were generally 5@10c lower in the consuming markets last week. Cold weather reduced the movement from producing sections but the shipments were still up to normal for this time of year. Northern round whites are quoted at \$1@1.15 in most city markets.

BEANS

The bean market jumped suddenly last week to \$8.25 for the choice hand-picked whites f. o. b. Michigan points. Red kidneys are quoted at the same figure. While cold weather stimulated consumption the advance was not due so much to buying by wholesalers as to the activities of elevators and jobbers. Under the conditions the trend in the future is highly uncertain as either a further advance or a decline may occur.

GRAND RAPIDS

With supplies lighter than the de-

mand, the price of hothouse leaf lettuce advanced one cent per pound in Grand Rapids early this week, the range being 21@22c per pound. Radishes were unchanged at 50c a dozen bunches. The snow blockade has kept this market short of fresh eggs and prices have advanced to a range of 35@36c. With farmers and country merchants unable to reach the city late last week, local dealers had to depend upon carlot shipments of Iowa candle eggs out of Chicago. Poultry also was scarce and firm at 20@22c per pound, liveweight. Beans fully recovered

COMING LIVE STOCK SALES.

Aberdeen-Angus.

March 21.—Russell Bros., Merrill.
March 8.—Alexander & Bodimer, Vassar.

Holsteins.

Feb. 27.—Muscott & Graham, Ithaca.
Feb. 23.—E. O. Phelps, Tekonsha.
March 6.—H. W. Evans and D. W. Fisher, Eau Claire.
March 10.—Musolf Bros., South Lyon.

Shorthorns.

March 6.—Everett Lyon, Ann Arbor.
March 7.—C. M. Bilhimer, Corunna.

Duroc Jerseys.

Feb. 27.—Matt Matthisse, Byron Center.

O. I. C.'s and Chester Whites.

Feb. 27.—Emery H. Jewett, Mason.
March 6.—Everett Lyon, Ann Arbor.
March 8.—Alexander & Bodimer, Vassar.

Poland Chinas.

Feb. 24.—G. S. Coffman, Coldwater, Mich. (Postponed from Feb. 14).
Feb. 27.—J. E. Mygants, St. Johns.
Feb. 28.—Chas. Wetzel & Sons, Ithaca.
March 1.—Archie Ward, Breckenridge.
March 2.—Gratiot County Poland China Association, St. Louis, Mich. H. D. Wetzel, Secretary, Ithaca, Mich.
March 22.—Sonley Bros., St. Louis.
Spotted Poland Chinas.
March 2.—C. Watson, Breckenridge.

Live Stock Market Service

Wednesday, February 21.

DETROIT

Receipts 325. Market is steady to strong.
Best steers \$ 8.50@ 8.75
Handyweight butchers .. 7.75@ 8.50
Mixed steers and heifers 7.00@ 8.00
Handy light butchers.... 6.25@ 7.00
Light butchers 5.50@ 6.00
Best cows 5.25@ 6.00
Butcher cows 4.50@ 5.00
Common cows 3.00@ 3.50
Canners 2.50@ 3.00
Choice bulls 5.25@ 5.75
Bologna bulls 4.50@ 5.25
Stock bulls 3.75@ 4.25
Feeders 6.25@ 7.50
Stockers 4.75@ 6.00
Milkers and springers.... \$ 40@75.00

Veal Calves.

Receipts 580. Market steady.
Best \$16.00@16.50
Others 8.00@15.00

Sheep and Lambs.

Receipts 1,080. Market steady.
Best lambs \$14.75@15.00
Fair to good sheep..... 6.50@ 8.00
Light to common 9.75@12.75
Culls and common 2.00@ 4.00

Hogs.

Receipts 2,160. Market 10c higher.
Mixed hogs \$ 8.50
Pigs and light weights.. 8.75
Yorkers 8.90
Heavies 8.00
Stags 4.00@ 5.00

CHICAGO

Hogs.

Estimated receipts today are 23,000; holdover 7,543. Market is 10c higher. Bulk of sales \$7.80@8.40; tops \$8.40; heavy 250 lbs up \$7.95@8.15; medium 200 to 250 lbs \$8.05@8.35; light 150 to 200 lbs \$8.25@8.40; light lights 130 to 150 lbs \$8@8.35; heavy packing sows 250 lbs up \$7@7.40; packing sows 200 lbs up \$6.75@7.10; pigs 130 lbs down \$7.25@8.

Cattle.

Estimated receipts today are 9,000. Butcher steers and butcher she stock steady to strong; others about steady. Beef steers medium and heavyweight 1100 lbs up \$10@11.25; do medium and good \$8.10@10; do common \$6@8.10; light weight 1100 lbs down at \$9.25@11.25; do common and medium \$5.90@7.90; butcher cattle heifers at \$5.50@9.85; cows \$4.40@7.75; bulls bologna and beef \$4.50@6.75; canners and cutters cows and heifers \$3.15@4.35; do canner steers at \$3.75@4.75; veal calves light and handyweight at \$9@13.75; feeder steers at \$5.75@8; stocker steers at \$4.50@7.85; stocker cows and heifers \$3.25@5.50.

Sheep and Lambs.

Estimated receipts today are 16,000. Market is very slow and around 15c lower. Lambs 84 lbs down \$13@15.25; do culls and common \$9.50@13; spring lambs \$9.50@13.50; ewes \$5.75@8.50; ewes cull and common at \$3.50@6.25; yearling wethers \$11.25@15.40.

BUFFALO

Cattle.

Receipts 200 cars. Market is steady. Choice to prime shipping steers 1,400 lbs and up \$9.50@10; good to choice shipping steers \$9@9.25; heavy fat of medium quality \$8@8.50; medium to good \$7.50@8; light native yearlings fancy quality at \$9.50@10; medium to good \$8@8.50; best handy steers \$8.25@8.50; plain \$7@7.25; handy steers and heifers \$7@7.40; western heifers \$6.50@7; light Michigan butchering heifers \$6.75@7.25; best fat cows at \$6@6.25; medium to good at \$4.50@5; cutters \$3.25@4.25; canners of good weight \$2.25@2.50; common and old rims \$1.50; best heavy bulls \$5.50@6; heavy bologna bulls \$4.75@5.25; common bulls \$4@4.50; best feeders 700 to 800 lbs \$6.50@7.25; medium feeders \$6@6.50; stockers good at \$5.50@6; light common \$4@5; best milkers and springers \$6@8; common and medium \$3.50@5.
Calves, receipts 250. Market steady. Tops at \$4@17.

Hogs.

Receipts 2,400. Pigs steady; others 25c higher. Medium and heavy \$8.50@8.75; yorkers \$9.25; mixed at \$9@9.15; light yorkers \$9@9.25; pigs at \$8.75@9; roughs \$7.25; stags at \$4.50@5.50.

Sheep and Lambs.

Receipts 2,000. Market is steady. Top lambs at \$15.50; yearlings \$12@13.50; wethers \$8@9; ewes \$7@8.

Poland China Bred Sow Sale

CHAS. WETZEL & SONS, Ithaca, Mich.

Wednesday, Feb. 28, 1923

39 HEAD 34 BRED SOWS, 5 FALL BOARS

This offering consists of such breeding as the

Clansman, Giant Buster, Outcross, Highland Giant, Gerstdale Jones, Gladiator Lukens, Big Bob,

Double treated with Thorntonn Serum

WM. WAFFEL & J. B. ROWELL, Auctioneers

Trains will be met in forenoon

DINNER 11:30

SALE 12:30

GRATIOT CO. POLAND CHINA Breeders Association

will sell

35 BRED SOWS and 5 FALL GILTS

from the very best herds

Sale at

St. Louis Feed Barn

MARCH 2, 1923, at 1 p. m.

Such Breeding as

Clansman, Liberator, Giant Buster and Big Bob

WRITE FOR CATALOGUE

H. D. WETZEL, Sec.

ITHACA, MICHIGAN

Most Modern Metal Silo



CHAMPION COPPERIZED METAL SILO

To meet the big demand for metal silos, as a substitute for masonry silos, we offer the newest, most improved, most sensible and satisfactory and least expensive metal silo on the market.

The silo without a fault, with 15 years experience as silo manufacturers built into them, made of rust proof metal, has airtight, leak-proof joints, continuous doors, ladders, latches and ladders on doors, smooth inside walls, and other construction features not found in others.

Best and Cheapest

Cheapest in first cost, cheapest in upkeep, best in service, can't crack or crumble. Absolutely fireproof, not affected by ensilage acids, no spoiled ensilage from freezing, it's the 100% metal silo for less money than you would pay for the ordinary kind. Write for free literature, prices, terms, construction details. Address: **WESTERN SILO COMPANY, 309 Mitchell Bldg., Springfield, Ohio**

HUDSON BARN EQUIPMENT

A complete line which gives you a full range of designs—individually operated or lever operated stanchions; swinging or rigid sure stops; etc. Pick what you want and have your barn the way you want it. Don't wait to build, equip your old barn.

Hudson Barn Equipment is designed to satisfy every purse. It is backed by the most rigid guarantee.



HUDSON MFG. CO.

Dept. 3133 Minneapolis, Minn.

Give your Engine Power

Give it a chance. Engines that pile up heavy gas and oil bills mean scores of worn cylinders or sloppy pistons. Renewed parts and reground cylinders give more power—make less upkeep. New rings, bushings, bearings, etc. replaced by us from stock.

FARM ENGINES

Both tractor and stationary rebuilt and made good as new. Cracked water-jackets welded. Ship your old parts to us for real service. Write for estimate of costs, mentioning requirements. This Guarantee Tag on all our parts is your insurance of service and good workmanship. Quick Service—Delivery f. o. b. Jackson

Jackson Piston Service Co.

619 E. Main Street Jackson, Michigan

Howbert Registered Holstein DISPERSAL SALE

16 HEAD

TUESDAY, MARCH 6, 1923

Sale begins 12 O'clock Sharp

Herd fully accredited. Subject to 60 days retest, most of females milking, have A.R.O. records, sired by proven bulls out of daughters of proven bulls. Cows freshen from April to November. Herd Sire Wolverine King Peeler Bees Segis, 28 Sire, R.O. daughters, to be sold and 5 daughters. Consignment of 8 females from D. H. Fisher herd, under state supervision, 5 freshen from April to October. This is a good class of cattle offered in splendid condition, free from abortion. Farm located 12 miles from Benton Harbor on Interurban Line, 12 miles from Dowagiac on Mich. Central, that connects to Interurban, Evans Crossing, Interurban Stop.

For Information Address

H. T. EVANS, Eau Claire, Mich.

Oscar Burch, Auctioneer

W. H. Harper, Pedigree Man

White Leghorn CHICKS

Write Quick. Free food—Liberal Discount on early orders. World-famous 235-270, and 280-325 egg strain trappessed, pedigreed English-American S.C.W. Leghorns, Heavy Layers, Best Layers. Strong healthy chicks, 100% live delivery guaranteed. 25¢. Free catalog Free. **KERLIN'S GRAND VIEW POULTRY FARM, Box 47, Center Hall, Pa.**



PURDUE UNIV'STY CHIX

Purdue bred-to-lay strains are backed by hundreds of 200-egg records. Prices 15c and up. Utility stock 18c and up. 8 breeds; write for free circular. **Irvington Hatchery Co., 240 Downey Ave., Indianapolis, Ind.**

BURR OAK AND ACORNS.

IN other words, Matherson and his Poland Chinas. They mean the same thing. Elmer Matherson has a neat little farm home a few miles northwest of Burr Oak. He is hale and hearty, in the prime of life and as sturdy as that particular variety of oak for which his post office is named. If you do not think Mrs. Matherson makes a capable team mate you should happen around some day about dinner time, and you can take it from one who has had experience, you will go away satisfied.

They have no regular little acorns of their own, so not to be outdone by such a handicap they have turned their attention to Big Type Poland Chinas and these they produce in clusters. For a considerable number of years Mr. Matherson has produced and grown the most approved type of hog, after the most approved manner. He has a great battery of herd boars, that are a hog show in themselves, and the great stretch and growth of his spring gilts, that now weigh upwards of 300 pounds, in only fair flesh, is accounted for by a winning combination of good breeding and good feeding.

The ration which is his main reliance for winter feeding is made up largely of oats, alfalfa, corn and tankage. No wonder they grow big and raise big litters. In addition to numerous private sales, he holds a public auction each year. This year his sale date came into conflict with the "largest" weather of the year and has necessarily been postponed until March 5.

STOCKS OF POTATOES ON HAND.

THE quantity of potatoes in the thirty-five late potato states on January 1 of this year is estimated by the United States Bureau of Agricultural Economics to have been 125,296,000 bushels, or 29.7 per cent of the total production of those states. These figures include those for sale for local consumption as well as those available for shipment, but do not include the stocks necessary for family consumption on the farms where produced, nor those retained for seed. One year ago stocks amounted to 90,023,000 bushels, and two years ago, 107,991,000 bushels.

Of the total stocks on hand this year Michigan held 13,169,000 bushels, or 10.5 per cent, which represents 34.8 per cent of Michigan's crop. The holdings in other leading states in bushels and percentages of total crop are as follows: Maine, 8,922,000 bushels, or 41.5 per cent; New York, 12,252,000 bushels, or 32.8 per cent; Pennsylvania, 6,586,000 bushels, or 25.1 per cent; Wisconsin, 16,106,000 bushels, or 39.6 per cent; Minnesota, 17,912,000 bushels, or 41.1 per cent; North Dakota, 5,346,000, or 30.0 per cent; South Dakota, 1,313,000 bushels, or 16.5 per cent; Nebraska, 2,919,000 bushels, or 25.0 per cent; Colorado, 8,030,000 bushels, or 43.5 per cent, and Idaho, 6,682,000 bushels, or 42.0 per cent.

These holdings on farms are due, in considerable part, to a shortage of cars, rather than any disposition to withhold the crop from the market. This shortage was extremely acute in the middle and far western states. With the prevailing low prices and the great distance of many of those states from the large consuming markets, it is probable that considerable quantities will not be moved. In the central live stock and dairy states, many farmers are feeding them to live stock, so that shipments are likely to fall below expectations. On the other hand, all labor in cities is fully employed and able to buy its full require-

DOGS

Fox Hounds, Rabbit and Skunk dogs. All ages. Ocon Hound Pups. **W. E. LEOKY, Holmesville, Ohio**

More For Your Money



MICHIGAN FARMERS

Put Your Feet Into The Grief Defying ROUGE REX SHOES

For Wear and Comfort

The Style Expressing
MORE MILAGE SHOES
FOR DRESS and SERVICE

One trial will prove this stronger than all the ads we could write

The leading dealer in your town stocks these shoes

ONCE WORN ALWAYS USED and SHOE and FOOT TROUBLES STOP

HIRTH-KRAUSE CO.

Shoe Manufacturers and Tanners

GRAND RAPIDS, MICHIGAN

Write us direct if you can not find our dealer.

POSTPONED SALE

Extreme weather has caused the postponement of our

Big Type Poland China Sale from Feb. 16 to Mar. 5.

47 Great, Stretchy, Heavy in Pig, Alfalfa Fed Gilts. See ad. in Feb. 10 issue.

E. J. MATHEWSON,

BURR OAK, MICH.

Trains met at Nottawa and Sturgis.

BABY CHICKS



GUARANTEED CHICKS FROM SELECT PUREBRED FLOCKS. Kept on free range. Carefully feed and cared for to insure the best of health and vigor. **WHITE & BROWN LEGHORNS, ANCONAS, 50, \$7.50; 100, \$14; 500, \$65. BARRED ROCKS, 50, \$8.50; 100, \$16.50; 500, \$78. Write for prices on 1,000 or more EXTRA SELECT from Approved Flocks \$2 per 100 higher.** Postpaid to your door, full live count guaranteed. Bank Reference. Free catalog. We want your business not only for this year but for years to come and we will certainly endeavor to handle your orders so as to merit your continued patronage. **Colonial Poultry Farms, Box C, Zeeland, Michigan.**



BABY CHICKS—\$10 per 100 AND UP

From selected, heavy-laying, vigorous hens. White and Brown Leghorns, Anconas, 50, \$6.75; 100, \$13; 500, \$62.50. Barred Rocks, 50, \$8.50; 100, \$16; 500, \$75. Extra Select \$2 per 100 higher. Mixed Chicks 50, \$5.50; 100, \$10; 500, \$50. Well hatched in modern machines. Carefully and correctly packed and shipped. Postpaid, full live arrival guaranteed. Bank reference and this guarantee makes you perfectly safe in ordering direct from this ad. NOW. Get them when you want them. All orders have our careful personal attention. **WE WANT YOUR BUSINESS. Catalog Free.**

WINSTROM FARM & HATCHERIES, Box H-6, ZEELAND, MICHIGAN



Good Chicks—Fair Prices

Barron Type W. Leg. B. Rocks, S. C. Reds. Pedigreed Chicks from M. A. C. cockerel mating. Utility grade from pure-bred, heavy-laying, free range inspected flocks. Pullets laid at 4 mos., 20 days last year. Guaranteed delivery. Discount on Feb. orders. Instructive catalog. Bank Ref.

MICHIGAN HATCHERY & FARMS, Box C, Holland, Mich.

Real Estate Market

For Sale 100 Acre stock and grain farm 2 large barns, good house, good water, all woven wire fence, 15 acres timber, 1/2 mile from good road in St. Clair County **CHAS. SCHNEIDER, Road 1 Lenox, Michigan**

80 Acres Improved \$65 per acre \$1000 cash. 160 acres improved \$87.50 per acre \$1000 cash. **THE ALLEN COUNTY INVESTMENT CO., Iola, Kansas.**

We Have Cash Buyers for farms at real bar gain prices. Describe fully. **Central Land Bureau, New Franklin, Mo.**

Sell Your Farm by my quick and easy method. It brings cash buyers. Send for particulars. **Albert Shirley, 706 South Rose Street, Kalamazoo, Michigan**

CASH YOUR PROPERTY QUICKLY, location immaterial. Give best price. **Universal Sales Agency, Box 43, N. Topeka, Kans.**

Farms Wanted sell your farm quick for cash New method, small expense. **Weaver Sales Co., Congress Bldg., Dept. 6, Detroit**

If You Want To Sell Your Farm

Write, **JEROME PROBST, Ann Arbor, Mich.**

Want to hear from party having farm for sale Give particulars and lowest price. **JOHN J. BLACK, Copper St., Chippewa Falls, Wis**

I Want Farms in Mich. for cash buyers. Describe and state price. **R.A. McNow, 324 Wilkinson Bldg., Omaha, Neb.**

Listen 40 A. imp. farm \$1200. Good terms. Other farms. **McGrath, Mountain View, Mo.**

Farm Wanted Give description, cash price. **R.E. LEADERBRAND, Cimarron, Kans.**

MICHIGAN FARMER Classified Liners bring results. They cost little. Try one.

A black and white illustration of a wooden crate, tilted slightly to the right. The word "HEAVY" is printed in bold, capital letters on the front panel of the crate. The crate has a handle on top and is shown with some shading to indicate its three-dimensional form.

A small, rectangular battery with the word "MEDIUM" printed on its side. It has a single terminal on top.

1 DEALTON
VALENTINE

(continued)

Sandford	(G)	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	Arc.	A	A
Saxon	(Mod. 115C)	A	Arc.	A	Arc.	A	Arc.	A	Arc.	Arc.
	All Other Models	A	Arc.	A	Arc.	A	Arc.	A	Arc.	Arc.
Senneca	(Mod. R)	A	A	A	A	A	A	A	Arc.	Arc.
Signal	(Mod. R)	A	A	A	A	A	A	A	Arc.	Arc.
	All Other Models	A	Arc.	A	Arc.	A	Arc.	A	Arc.	Arc.
Stearns-Knight		A	Arc.	A	Arc.	A	Arc.	A	Arc.	Arc.
Status		A	A	A	A	A	A	A	A	A
Templar		A	A	A	A	A	A	A	A	A
White	(Mods. 15-45 & 70-85) (16 valve)	A	A	A	A	A	A	A	A	A
	(3 & 5 ton)	A	A	A	A	A	A	A	A	A
	All Other Models	A	Arc.	A	Arc.	A	Arc.	A	Arc.	Arc.
Willie Knight		B	A	B	A	B	A	B	A	A
Willie Knight		B	A	B	A	B	A	B	A	A



Makes Of Engines
(recommendations shown separately for convenience)

Buda	(Models OU, QU, TU)					A	Arc.	A	Arc.
"	(Models RU, WU)	A	Arc.	A	Arc.	A	Arc.	A	Arc.
"	All Other Models	A	A	A	A	A	A	A	A

[illegible][illegible]

Hercules.....	A	A	A	A	A	A	A	A	A
Herschell-Spillman (Models JU, S, V & VA).....							A	A	A

Other Models	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
Hinkley	A	A	A	A	A	A	A	A	A	A	A	A
Lycoming	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.

[illegible][illegible]

THE correct grades of Gargoyle Mobiloil for engine lubrication of both passenger and commercial cars are specified in the Chart below.

Where different grades are recommended for summer and winter use, the winter recommendation should be followed during the entire period when freezing temperatures may be experienced.

NAMES OF AUTOMOBILES AND MOTOR TRUCKS.	1922	1921	1920	1919	1918
	summer	summer	summer	summer	summer
winter	winter	winter	winter	winter	winter

Makes of Engines

(recommendations shown separately for convenience)													
Ansted	A	A	A	A						A	Are	A	Are
Buda	(Models OU, OU, TU)												

(Models RU, WU).....	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A	Arc.
All Other Models.....	A	A	A	A	A	A	A	A	A	A
Continental... (Model B5)....	A	A								

[illegible][illegible]

Sperschell-Spillman (Models JU, S, V & VA)	A	A	A	A	A	A	A	A	A
" All Other Models	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A

Linkley	A	A	A	A	A	A	A	A	A
Lycoming	A	Arc.	A	Arc.	A	Arc.	A	Arc.	A
Midwest	A	Arc.	A	A	A	A			
(Model 408)									
(Model 409)	A	Arc.							

[illegible][illegible][illegible]

Transmission and Differential:

For their correct lubrication, use Gargoyle Lubricants or "CC" or Mobilubricant as recommended by complete Chart available at all dealers.

DANIV

PART I

VACUUM OIL COMPANY