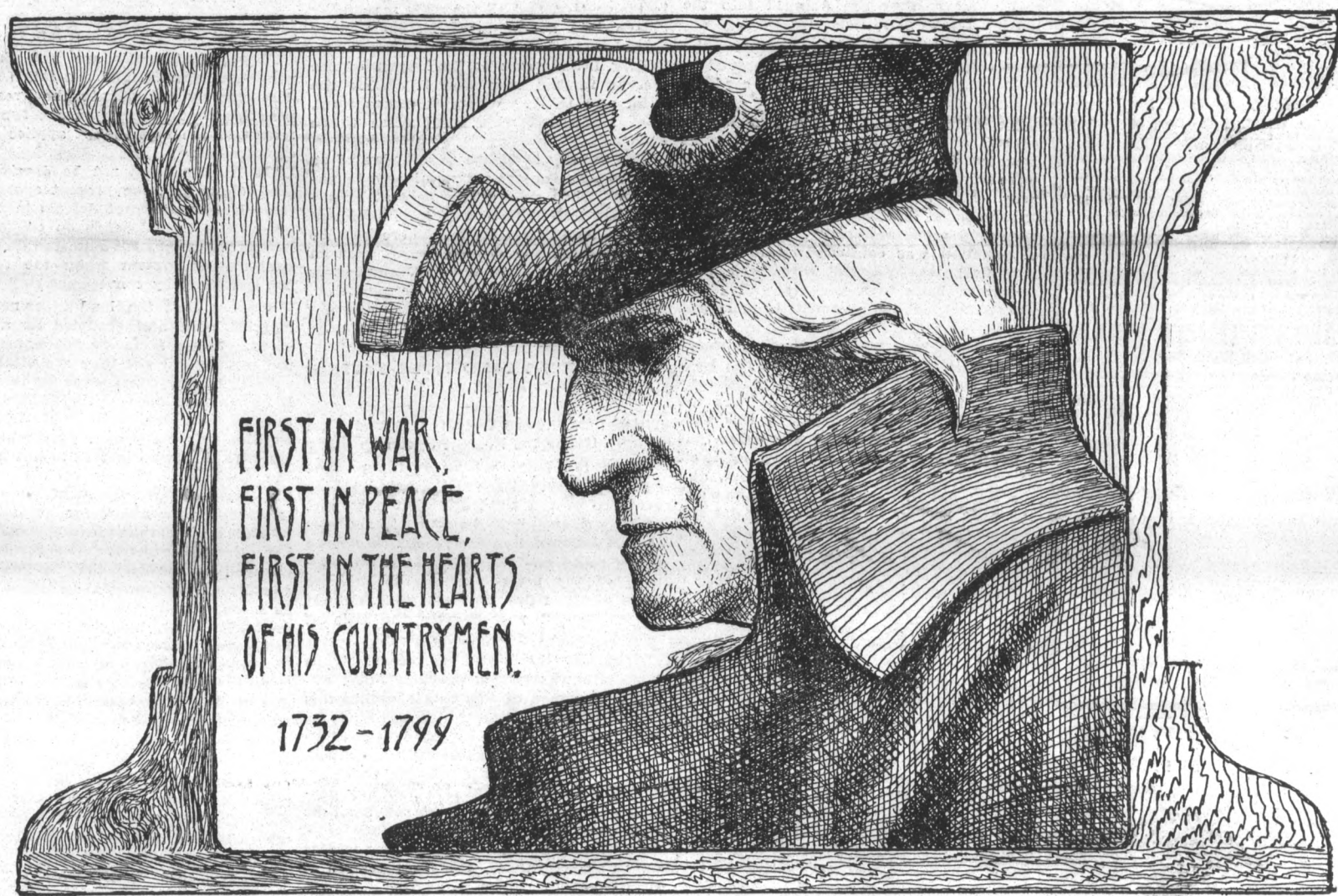


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Simple to treat
Booklet. Agts. Sporicide Chemical Co., N. Y.
wanted.

The "Curly Dwarf" Potato Disease.

MY experience with the potato dis-
ease that has lately come to be
known as "Curly Dwarf," may be
of interest to your readers, and especially
to the potato growers.

Eight years ago I commenced some po-
tato experiments in seed selection. Mr.
Tyler, who talked potatoes at the farm-
ers' institute that year, explained in de-
tail his method of seed selection by the
hill method. The whole hill that showed
superior qualities was saved, but was
mixed with other like hills in the crate or
basket. This method seemed good and I
saved 18 bushels of seed from the best
hills in half my field, when the thought
came to me that a better and quicker
way to improve my potatoes would be to
save and plant each hill separately, the
purpose being to discover and develop a
superior strain of heavy, uniform yielders.
When selecting a superior hill in the fall
one cannot know whether it possesses
inherent superiority, or whether it was
produced by local influences, such as ex-
treme fertilization of the spot where it
grew, and when planted under less favor-
able conditions its plebeian ancestry is
plainly seen. By planting the tubers from
each hill in a row by themselves its qual-
ities may be easily judged. If all the
hills planted from the tubers taken from
one hill show strong, vigorous tops, and
when dug each of these hills yields a
goodly number of good potatoes, of prop-
er shape, size and color, they are good
enough to keep, and the experimenter has
found what he was seeking. On the other
hand, if the top growth is irregular, and
the tubers irregular in size, shape
and number, they are dumped into the
market bin and forgotten.

Of the 63 hills selected and planted, the
next spring, only six or seven proved to
be desirable, and were saved for seed for
the next year. The best hill of each of
these rows, as well as the best hill of
several of the others that showed some
promise and some hills from the field
were saved for the breeding plot the next
year. Row 22 was particularly good and
it reproduced itself for a number of years
with very great uniformity. This method
of selection was continued until my en-
tire field was planted with seed that
pedigreed back to a very few hills, and
showed a great improvement in yield and
quality of stock.

The third year when digging my breed-
ing plot, I found, in a row that ran back
to the original "Hill No. 22," a hill con-
taining five small potatoes. It was the
first poor hill I had found in this line,
and was so marked and out of order that
I saved the small hill in a bag by itself
to see what it would do next year, and
the best hill in the row in a bag to plant
the next spring. At this time I did not
dream that the small hill was diseased.
I explained the matter to many farmers
and sought to find a reason why this
runt, or scrub hill of potatoes should have
developed, with an honorable ancestry
back of it of three or four generations,
but was unable to get any light on the
subject until two months ago, when I
learned through Farmers' Bulletin No.
544, that it is a disease called "Curly
Dwarf," and that it is a very dangerous
disease.

The next spring after saving the small
hill, I planted a row of 15 hills from it in
the breeding plot and a like row from the
good hill selected from the same row.
The row planted from the large seed
came up strong and vigorous and I dug
from it a bushel and nearly half a peck.
The 15 hills from the small seed came up
sickly and weak and dwarfish and yield-
ed not quite half a peck. I planted the
small seed two other years with the same
results as above stated. Only a very few
of the tubers from the 45 hills grown the
three successive years could be placed in
the market class. In shape and color the
tubers are almost ideal, and nothing to
indicate that they carry the disease that
produces them, which they do. They are
just the size that many growers select
for seed to be planted whole.

Herein lies the great danger to the po-
tato industry. The doctrine of "small
seed" has been preached from one end of
Michigan to the other during the past
four or five years. The Hon. Jason Wood-
man, as state speaker on potatoes for
two years at farmers' institutes, was very
positive in his "small seed" doctrine, and
that part of his lecture was given wide
circulation by the state press. The M.
A. C. is also teaching the use of "small"
potatoes for seed. Coming as this doc-
trine does, from the highest authority in

the state, it is to be expected that the
growers have very generally accepted it
as the last and best word on the subject,
and are using "small seed." It was easy
for the average farmer to accept this
doctrine for to the vast majority a "small
potato" means one too small to market—
a "cull," if you please—and if the state
"big guns" say "small seed," why, it
must be the thing. Now, it should be
plain to everyone that the use of small
seed means the selection of a larger por-
tion of this disease, and the hastening
of its spread.

I am satisfied that it now has a broad
and firm foothold in the state. On the
tenth of January I addressed a farmers'
meeting at Blanchard in Isabella county,
and 12 farmers recognized the disease
from my description. At the farmers' in-
stitute at Edmore, January 17, 30 farm-
ers had noted curly dwarf plants in their
fields. In neither case did they know it
to be a disease. I have talked with grow-
ers in other parts of this county, eastern
Kent, and other parts of the state and it
is present in all these places. It is re-
ported that this disease has ruined the
Greely, Colorado, potato district, during
the past three or four years.

When at East Lansing on January 15
the professors did not know the disease
is in Michigan. They said I had brought
the first report of its presence. Since
learning how general it seems to be, I
have communicated with the chairman
of the State Board of Agriculture, and
with the College. It seems that if the
disease is one-tenth as bad as it is re-
ported, very radical action should be had
in the matter, and all the state machinery
gotten into action to check its further
spread.

Very little seems to be known of the
disease further than that it dwarfs the
stalk and tuber. Where it comes from,
how, when and why, don't seem to be
known.

The remedy is "large seed," planted on
new ground, or ground not lately in po-
tatoes. Then go over the field at bloom-
ing time and remove any hills, root and
branch, and burn them. There can be
no mistaking the disease, when seen in
the field. The plant is small, and leaves
and growing ends, curled or puckered.
The color is usually a good dark green.
Montcalm Co. C. W. CRUM.

THE TORRENS LAND TITLE SYSTEM. III.

Titles that Prevail Over the Record Title Under the Present System.

From the fact that under the present
system the record is not the title but only
evidence of the title, and that only part
of the evidence is to be found in the re-
cord, it follows that the record cannot be
safely relied on in buying. It is the pur-
pose of the present article to indicate
some of the titles that are good without
recording and prevail over the title of
record under the present system.

Originally there was no record. Then
a statute was passed providing that ev-
ery conveyance of real estate within this
state hereafter made, which shall not be
recorded as provided by this law shall be
void as against any subsequent purchaser
in good faith and for a valuable consid-
eration, of the same real estate or any por-
tion thereof, whose conveyance shall be
first duly recorded.

It will be noticed that this law relates
only to conveyances, that is, transfers of
title from one person to another by deed.
As to all other methods of transfer, the
law remains as it was before, the title
is good without recording. When
the United States grants land to anyone
and he fails to record his patent, the title
thus given him is good without any re-
cord; and if by any accident, as has some-
times happened the government later
sells the land to another who pays for it,
relying on the fact that the record is
clear of any title to anyone else, he gets
no title; for the government had no title
to give, having previously sold to another.
It is true that this is much less likely to
happen than with private persons, and
the government will at once make due
restitution on discovery of the error. But
the result remains practically unchanged;
the purchaser has been deceived by the
record, has purchased in reliance on it,
and got no title.

Another transfer that does not have to
be recorded is a dedication without deed.
By the old common law all dedications
were without deed. Now our statute pro-

vides for dedication by deed, but does not
prevent dedication by the old method.
A dedication is a gift of the land to the
public for some public purpose, such as
school grounds, market, cemetery, park,
public square, or the like. One might
find the title of record perfect in A, and
purchase from him or his heirs in abso-
lute reliance on that record, only to find
that he had bought a public park and got
no title. This was because A had made
a common law dedication of the land to
the public without deed, before the pur-
chase from him in reliance on the record.

Another transfer not provided for in
this statute is a will. If a man dies leav-
ing a will title passes to the donee in the
will without recording, and there is no
limit of time within which it must be
probated. There are instances in which
lands have been bought from the heirs of
the deceased, passed through many hands,
all relying on the record, and finally the
will has turned up and been probated 60
years after the death of the person who
made it. The result is that the donee
under the will takes the land from those
who had purchased from or under the
heirs. No purchase of abstract, or ex-
amination of the record by a land title
expert, affords any protection against any
of these dangers. These evils inhere in
the system, which is a record of the evi-
dences of title, not itself title.

Another transfer that may be made
without recording under the present sys-
tem is a partition. If two persons own
land in common or as joint tenants and
desire to divide, the only prudent way
for them to make division is by deed. But
a deed is not indispensable; and if they
make partition without any deed, a pur-
chaser acting in reliance on the record,
which indicates that they are still joint
tenants or tenants in common, would get
only what his grantor had left to convey.

These illustrations are not the only
possible instances, and are taken at ran-
dom, merely to indicate the great dan-
gers inherent in our present system by
reason of the fact that it applies only to
conveyances.

The reader must not be deceived into
the notion that the present system pro-
tects him from secret defects in titles so
far as the title depends on conveyances.
Let us for a moment note the dangers in
our present system when the transfers
have all been by conveyance.

Suppose that the land is owned by a
married man and occupied as a home-
stead. These facts do not appear from
the record, and yet they are vital to the
validity of any conveyance by the owner.
If he makes a deed of the property with-
out his wife signing it, or if it is signed
by him or some person purporting to be
his wife, but who in fact is not his wife,
the deed is absolutely void, and is not
made good by the death of the wife af-
terwards or the abandonment of the pos-
session by them and establishment of a
homestead elsewhere. The result is not
changed by the fact that in the deed of
conveyance the owner describes himself
as a single man. In these cases the re-
cord looks clear, but the deed was abso-
lutely void, and recording it and acting
in innocent reliance on the record makes
it no better. The vice in the situation is
due to the fact that the record is not
title, but only evidence of it.

The champion of the abstract company
will answer these objections to the pre-
sent system, and other similar ones that
might be made, by saying that in most
cases the record answers all purposes, and
where it does not the defect is soon cured
by the statutes of limitations of ac-
tions, whereby title ripens by adverse
possession in a few years, though not
good in the origin. But why should we
retain a limping system which puts us un-
der tribute to abstract companies and
renders real security impossible if we can
escape these evils by a better system.

But the answer that the defective title
of record is cured by ten or fifteen years
of adverse possession is not true. Title
by adverse possession is subject to too
many exceptions. Title cannot in that
manner be acquired against infants, mar-
ried women, persons insane, confined in
any prison, or residing beyond the sea.
Even though all the parties are of legal
capacity, free, and reside in Michigan, ad-
verse possession during the time of a life
tenant will not give title against the re-
mainder man or reversioner; and this is
so whether the person holding adversely
claims under the life tenant or against
him. Moreover, no possessor of the sur-
face would ever bar mineral rights, in-
cluding the right to enter and dig for ore.
Washtenaw Co. JOHN R. ROOD.

THE PASSING OF A TYPE.

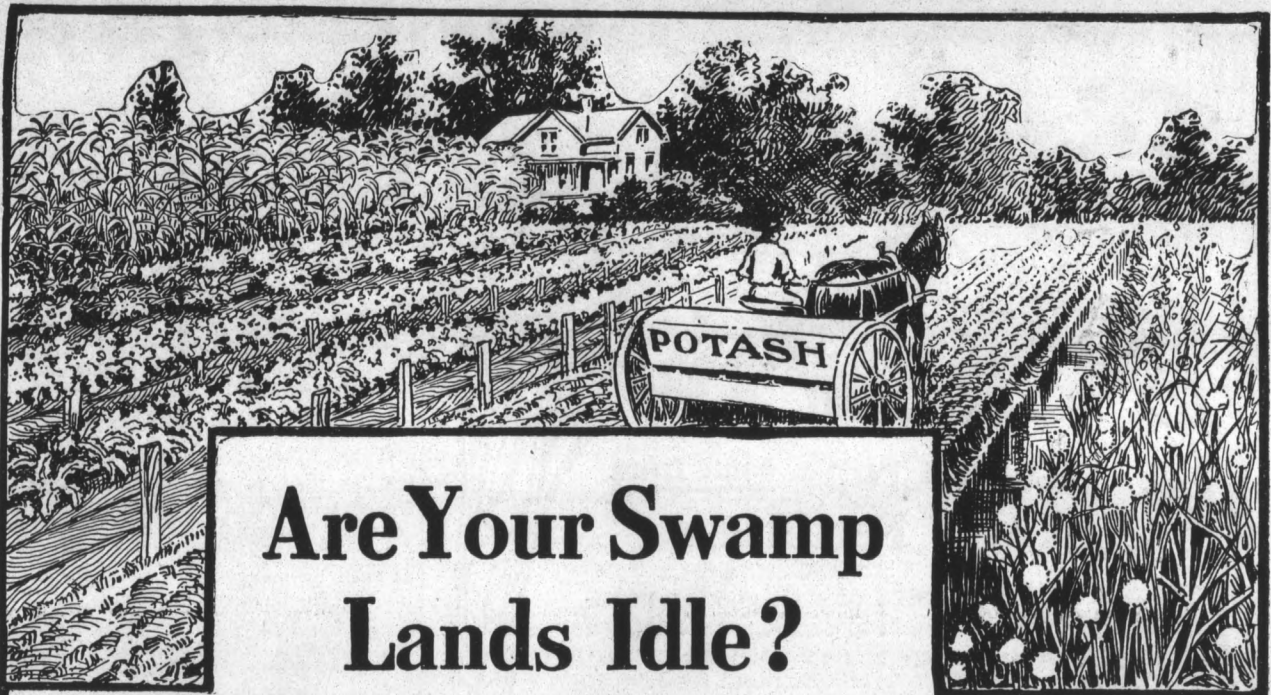
Twenty years ago there could be found in every rural community throughout this section, from one to three men of a type that is rapidly passing. Indeed, the type has already passed, for the most part, from our rural life. The few individuals of the class who still remain, like the log cabin and the rail fence, are reminders of a once prevailing and common feature of country life that will never again flourish as commonplace. This type to which I refer, consisted of men who owned a home and a plot of ground, varying in extent, from one to ten or a dozen acres, and who were known as the "Day Hands" of the neighborhood. In addition to working his little plot of ground, the man of this class could be counted on by neighboring farmers in the busy seasons when help was most needed. In haying and harvesting, in corn cutting time, and indeed, at almost any season, the "Day Hand" stood ready to lend his skill and strength for a day or a dozen days, at the current wage. In winter this man went into the woods and cut wood by the cord in partnership with another "Day Hand," or perhaps he helped his more prosperous neighbor of the larger farm, cut his year's supply of wood, receiving pay by the day as in summer. These were the days when farm labor was a constant quantity and when the procuring of help was the least of the farmer's worries.

In a score of years mighty changes take place in rural communities as elsewhere; and in particular is this true of the score of years that have just gone. During this time a revolution has taken place in rural life. The rural telephone, rural free delivery, improved machinery and new methods of farming—all have come, and with them other changes less marked and less thought about, but none the less vital. The movement cityward has come, and swept the "Day Hand" from the rural community.

In considering the passing of this type, two important questions present themselves: First, the effect on the community. Second, the effect on the individual. In regard to the first of these questions, the effect has been far-reaching and important, and has complicated in a marked degree the plans and work of the farmer. Scarcity of day help, scarcity of help of any kind, has made the labor problem one of the most difficult with which the farmer of today has to contend. The man with a few acres of ground who stood ever ready to work for his neighbors, has disappeared, and the farmer must fill his place as best he can, by the use of up-to-date labor-saving devices.

But it is when we turn to a consideration of the second question, the effect on the individual, that a factor fraught with grave consequences to the race, becomes apparent. In his little country home, the "Day Hand" was comparatively comfortable and independent. As a rule, his home was his own. He had at least a large garden and more often his land produced much of the staple products consumed by the family. If he received only a dollar a day for his labor, it went a long way and the family was fairly comfortable. The children were reared in the midst of fields and woods, drinking in the health and self-reliance and sterling qualities which life in the country can best give to boys and girls. With his passing to the towns and cities, the "Day Hand" lost much of his independence. He became a machine man, toiling in the factory, with less time that he could call his own, and with less assurance of permanent employment and prosperity. His children missed the immeasurable advantages of growing up in the country, and in their city environment, were less robust, less free, and less self-reliant. Once city born and city bred, the younger generation has been slow to turn back to the farm. The sons of the one-time "Day Hand" are for the most part, factory workers, drawing good pay, perhaps, but for all that, less independent and less self-reliant than their country-bred ancestors.

There are some, perhaps, who will deem this picture over-drawn. But in large outline it is none the less true. A type has surely passed from our rural communities, and to our short-sighted vision the type has not benefited by the change. It is true that initiative and self reliance may be found in plenty, among the children of a city. But granting this, it is still true that the ideal place to bring up a child is in the country, in intimate association with nature and her wondrous ways. The trend cityward has obliterated



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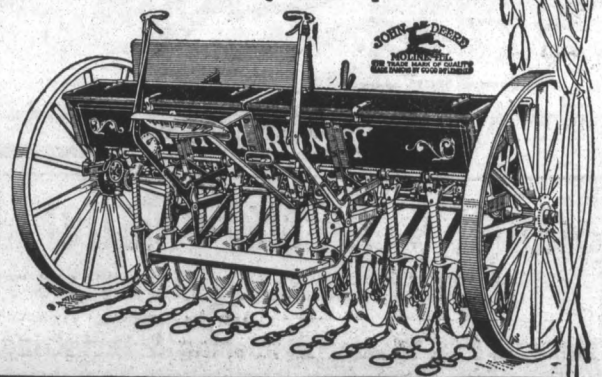
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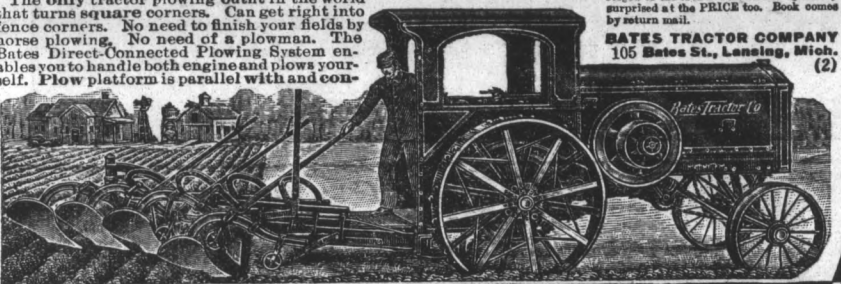
nected with the engine platform. No getting off to handle plows. No heavy lifting. Controlling levers in easy reach. Only one adjustment required.

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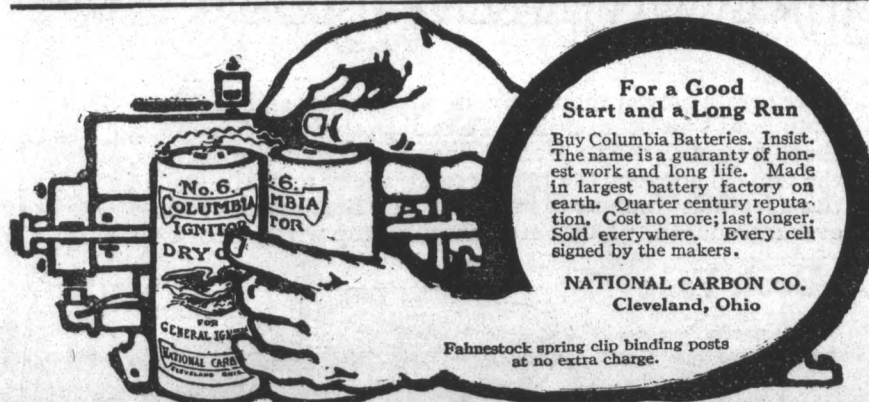
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a rural type, and it is useless to offer up lamentation for the loss of the "good old days." The stream of new life that pours from the country into the cities, is all that saves the cities from swift decay. Too often the new life is in its turn polluted. Could the tide be turned again to the clear skies and green fields of the country, I believe that even the question of race suicide would be solved. The passing of the "Day Hand" from the rural community may be a factor in the great onward march of the world, but considered in itself and at short range, the change does not appear to have been advantageous.

Hillsdale Co.

J. A. KAISER.

LIME AS A FERTILIZER.

Few men understand the proper relation of lime to the fertilizer question. Some regard it as a fertilizer and some do not. Generally speaking, lime is not a fertilizing material and is not regarded as such by many of our experiment stations. To fertilize, according to Webster, is, "To supply with nourishment for plants." Plant nutrition depends chiefly upon the elements, nitrogen, phosphorus and potassium (potash) i. e., these three elements are the ones the plant must have for growth.

Lime, as is generally known, is used for the purposes of sweetening the soil for legumes and improving the tilth of the soil by flocculation of the particles, thus also improving aeration. At the same time nitrogen is added to the soil through the increased growth of leguminous plants or flora.

However, lime has a direct and an indirect fertilizing or manurial action. It has been found that lime is necessary to the plant. Certain soils, although plentifully supplied with essential elements of plant food but lacking in lime (calcium), do not produce a normal plant. This goes to prove the fact that lime is necessary to plant growth.

Indirect Fertilizing Action.

The indirect fertilizing action of lime is of more importance than of any other manurial effect that might be mentioned. It has been stated that lime does not increase the amount of plant food in a soil. This statement, although not true in the strict sense of the word, is true in an indirect way. It does not, however, take into consideration the fact that lime may and does increase the availability of fertilizing elements in the soil.

The phosphorus in a soil, deficient in lime, is often locked up in unavailable complex forms, such as calcium and iron phosphates. Such classes of compounds are extremely slow in giving up plant food to the action of the plant roots. When lime is added to the soil, the phosphorus unites chemically with it, forming a soluble compound that is easily available to the plant. Potash (potassium) like phosphorus, exists in many soils in the form of unavailable chemical complexes and compounds. Lime unites with this element in much the same way in which it unites with phosphorus. In fact the action is quite as clearly typical here as in the former case.

Injurious Effects.

An over supply of lime is just as injurious to a soil, unless some manurial constituent is also applied, as an under supply. This condition is rarely seen except in districts naturally rich in lime. The increased crop production caused indirectly by the abundance of lime has a tendency to deplete the liberated plant food. In time, if the soil is allowed to revert to unproductiveness, it becomes a difficult matter to bring it up again to high fertility without great expense.

However, such action scarcely need be feared, for few farmers who go to the expense of applying lime, would allow the soil to suffer for want of direct plant food as well.

Indiana.

L. E. NEUFER.

FARM NOTES.

Sowing Rape in Fall Sown Grain.

I have a 12-acre field of rye which I want to seed to clover in the spring. I also want to pasture it in the spring to prevent a large growth of straw. Now would it be all right to sow rape in with the clover? Would it be beneficial to the clover or not? Would pasturing the rye prevent the rape from getting started? How early can the rape be sown, and would I be liable to get a good rape pasture for the hogs? The soil is a gravelly clay loam and rolling.

Eaton Co.

J. H. H.

Rape would not, in the writer's opinion, make a growth when sown under these conditions which would be very valuable for pasture. Rape does very well when

sown with oats on well fitted land, but the writer's experience in sowing rape on ground that was simply harrowed up in the spring, has not been very satisfactory. In any event, the pasturing after harvest would not be beneficial to the clover seeding, and its profit would be doubtful. It would be better to sow rye in a separate field, especially for hog pasture, if practical. It would, however, do no harm to put in a little rape seed as an experiment when sowing with clover.

Preparing a Field for Alfalfa.

I have ten acres of medium heavy loam on which we have failed to get a catch of clover for several years, and which gives an acid reaction with litmus. This last fall I sowed about two bushels of rye per acre as a cover crop and will plow under next spring for green manure, planting red kidney beans in June. My wish is to get this in shape for alfalfa in 1915, and I think the beans will be helpful in adding a little nitrogen and in getting the ground free from weeds. Will probably top-dress lightest spots with stable manure or else apply it before plowing under the rye, but will not have enough for the entire field. Would you advise a commercial fertilizer for the beans in addition to the green manure? I have two plans in view regarding the alfalfa seeding and am undecided which to follow. I can get the beans off in time to sow another cover crop of rye or something similar and plow it under in June, 1915, and sow the alfalfa in July without a nurse crop. Or would it be better to let the ground lie bare next winter and sow the alfalfa with oats in April as some are doing? The "alfalfa game" is a new one in Barry county, and I want to give this piece as good a chance as possible. Would it be better to sow the lime next fall or to wait until the following spring?

Barry Co.

D. S.

It would be better to make a liberal application of ground limestone when fitting this soil for beans than to wait until fall or the spring following to apply it, as some time is required to get maximum results in the sweetening of the soil where this form of lime is used. The beans would be benefited by a small application of complete commercial fertilizer; this, however, should either be sown broadcast or else distributed in the row with the beans and one drill mark each side of the bean row, for the reason that bean seed is easily injured by a fertilizer containing considerable potash. With regard to the time of sowing the alfalfa, and whether with oats or alone, the argument in this case would seem to be in favor of sowing it alone in midsummer on a well-prepared seed bed. By sowing rye next fall and again plowing this down for green manure the available fertility in the soil will be retained and some vegetable matter would be added. The rye should be plowed under, however, while the soil contains sufficient moisture so that it can be again well packed and a good seed bed prepared. With this kind of preparation, and with inoculation at the time of sowing, there should be every reason to anticipate a successful seeding of alfalfa. If this land now grew clover well or had been previously seeded to alfalfa, it could probably be just as successfully seeded in oats, but under the existing conditions, it would in the writer's opinion, be better to give the alfalfa every chance from the start, instead of compelling it to compete with the oat crop for plant food and moisture.

Growing Potatoes from Seed Balls.

How do you grow potatoes from potato balls? I gathered some last fall and have them dried. My father is a subscriber for your paper.

Ingham Co.

J. M. P.

The seed balls or fruit of the potato vine are filled with a soft pulp which contains numerous small seeds. After the seed balls have fully matured, the seed should be washed from this pulp, which can be easily crushed, and dried. They should then be sown in a small box as one would grow other plants, and transplanted outside at such time as they have made a suitable growth. The tubers produced the first year will generally be small, and the character of the varieties thus produced cannot be determined until after two or three successive plantings. Sweet Clover as a Soil Builder and Forage Crop.

Does sweet clover rank second to alfalfa as a soil builder and for feeding purposes? Will sweet clover inoculate soil for alfalfa? Will sweet clover grow best on low, medium or high land?

Kent Co.

J. D. H.

Experience with sweet clover in Michigan has not been extensive enough to form a very accurate estimate of its value as a forage crop, although many who have used it speak very highly of its value for this purpose. As a soil builder it ranks high because of the large amount of humus which it will supply if plowed under, and also because it is a good nitrogen gatherer. The same species of bacteria find a home on its roots as on al-

alfalfa, hence if the bacteria is present in the soil, it might properly be said that sweet clover will aid in its multiplication and distribution so as to better inoculate the soil for the alfalfa crop. It is necessary, however, to have the soil in a proper condition to promote the multiplication of this bacteria, in order to get these results. This is well illustrated by the phenomena which can often be observed along country roads where gravel containing limestone pebbles has been applied to the road. The writer has seen cases where sweet clover grew in profusion just as far as the gravel had been applied, with almost none growing beyond the point where the gravel had been used, although soil conditions were practically the same. The only explanation which can be offered is that the dust from the road has conveyed sufficient lime to the soil at the roadside to sweeten it and make it a more favorable medium for the sweet clover and alfalfa bacteria. Sweet clover is more tolerant to unfavorable soil conditions than alfalfa, however, and will grow on less well drained land and also on land not in suitable mechanical condition for best results with alfalfa, but makes its best growth on good rich, well limed ground.

Varieties of Sweet Clover.

I want to sow some sweet clover in the spring on land that is sandy and run. I am not acquainted with the nature of the plant. Would like to ask which of the two, the yellow or white blossom, would be the best for feeding and fertilizing purposes? I see the selling price of yellow is half of that of the white variety. Would it pay to sow the yellow blossom on account of the seed being cheaper?

Emmet Co.

A. G.

The relative value of yellow and white sweet clover is probably quite accurately reflected in the difference noted in the price of the seed. There are two varieties of the yellow sweet clover, one a biennial like the white sweet clover. It has a more spreading habit of growth, for which reason it is more apt to become a weed, since the trailing stems will always some of them be left to mature seed and thus perpetuate the stand. There is also a smaller variety of yellow sweet clover which is an annual plant of little value for agricultural purposes. Sweet clover, like other legumes, is partial to an alkaline soil, and if poor sandy land is too deficient in lime, it would pay to add this soil corrective as a preparation for the crop.

When to Plow Sweet Clover Under as a Preparation for Alfalfa.

Sweet clover is a biennial, and does not send up a seed stalk until the second year. The maximum benefit would be derived from its use as a preparation for alfalfa by leaving it until the spring following that in which it was sown before plowing down; this would make it available as a pasture the first season if desirable.

Amount of Sweet Clover per Acre.

How much sweet clover seed would you advise sowing per acre and when would it be up high enough to plow under for alfalfa?

Newaygo Co.

SUBSCRIBER.

From 20 to 30 pounds of sweet clover seed are advised by the best authorities, for the reason that much of the seed will not germinate the first season. One-half this amount of seed would be sufficient if it could all be depended upon to germinate at once. The reason for this slow germination is that the seed has a hard coating on the outside, which the moisture does not readily penetrate. Experiments have been made by soaking the seed in sulphuric acid for half an hour, which will eat away part of this outer coating, after which the seed is thoroughly washed in a stream or where an abundance of water is available. This treatment, however, is still in the experimental stage, and too much dependence should not be placed upon it.

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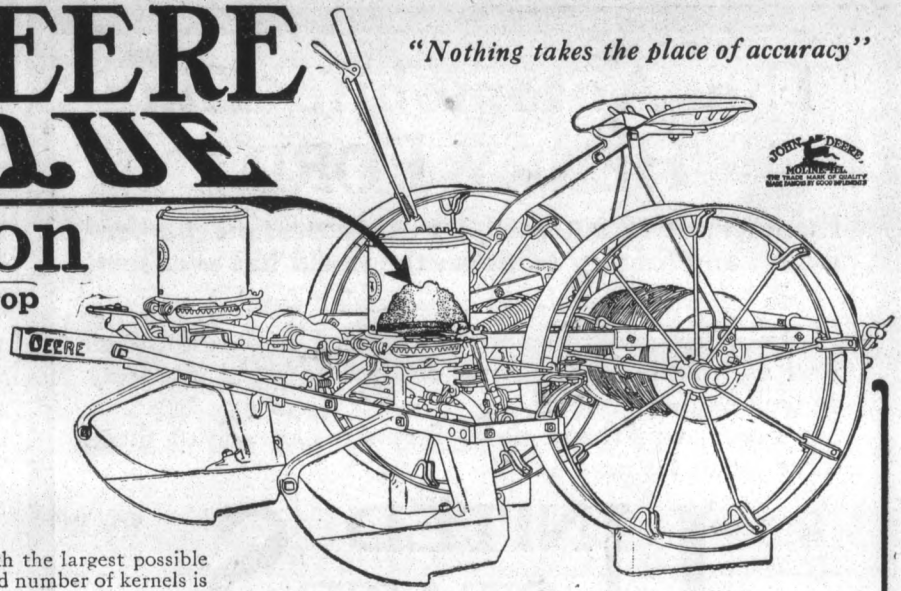
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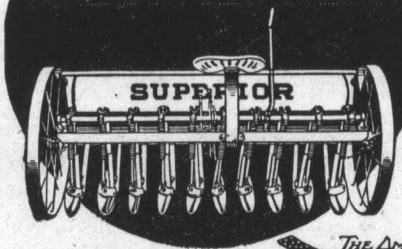


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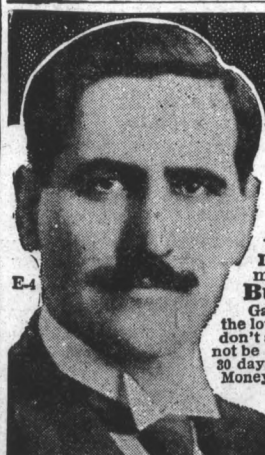
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Dairy.

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Dairy Meeting

NATURE'S contribution of ideal weather brought a banner crowd of Michigan people to the thirtieth annual meeting of the State Dairymen's Association at Grand Rapids last week. Without getting near the limit of veracity, it can be said that the session was a decided success from most any angle viewed, except that of the knocker. With the dairy farmers gathered the creamerymen and the ice cream manufacturers, and the program was arranged to meet the interest of these different classes.

Because of this cosmopolitan program, it is not possible to put one's finger upon a single theme and state that the efforts of the session were centered about that question, but from the standpoint of the dairy farmer it might be said that the trend of the subjects and the discussions was to the effect of producing milk and cream of higher quality. Not only competition but recent laws and the demands of boards of health are making it suicidal to produce dairy products of low quality and naturally the farmer, as well as the manufacturer, is anxious to get all the light available to prepare him to meet in an economical manner, these new demands.

A New Situation.

Certainly this gathering gave the farmer some added courage to go forward in his tremendous task of raising the standard of dairy products, for he observed that not only was the state coming to his assistance from a number of different angles, but behind all there was a strong public sentiment supporting the movement. It was formerly thought by the rank and file that the farmer was the one responsible for poor milk and cream and butter. If any fault was found the fault-finder reached way back to the man who owned the cows producing the faulty product. But now he is learning that the fault may be due to the acts of others besides the farmer. The dealer and the consumer himself are frequently found to blame for these irregularities. These people are beginning to own up to their responsibility. They now acknowledge that they can make poor milk or cream or butter out of products that were perfectly good when they left the farm.

Well, this confession, the spirit of which seemed to be in the air at the convention, is turning the trick. When the other parties to the deal are willing to join hands in bringing about a good thing the farmer is usually not found wanting. He is ready to produce a product that costs more when the dealer and the consumer feel that they are ready to pay the additional expenses of more sanitary production. And we believe that the people who handle the products of the dairy farm and the people who consume those products are more willing to give a larger price for a good product than they were five years ago.

Some Real Excitement.

At least this seemed to be the sentiment at the convention. For not a little excitement developed when the little creameries and the large centralizers were trying to convince each other that the former were paying too much for butter-fat and the latter were not paying what they should. But the argument was somewhat fruitless because the participants did not debate from a common ground. The fact that the local creamery can get the cream in a much better condition enables them to make better butter for which they can secure a higher price and hence can see their way clear to pay more for cream in spite of the economics of large production.

Not alone did this gathering convince the dairy farmer that there is greater co-operation from the state and the public to assist him in the task of producing better dairy products, but he learned that the inventive genius of the land is also doing a part in furnishing ideal equipment to create better sanitary and economical conditions. The latest type of dairy machinery was exhibited, and the agents seemed well pleased at the interest farmers are taking in up-to-date equipment and the orders that were booked.

The program was carried out almost to the letter. There was much of it that was intended for the creamery men and the ice cream manufacturers. We shall run in these columns detailed reports of the addresses having information of a helpful nature to the dairy farmer.

Results of Contest.

The butter and cheese contests were keen, the large number of exceptionally high-quality exhibits showing the general interest taken by the butter and cheese-makers. Edward Winters, of Mt. Clemens, won first in the whole milk butter class with a score of 96, while John Vugten, of New Erie, took second with a score of 95½ and E. J. Schwanbeck, of Utica, third place with his percentage at 95. In the hand separator class of butter J. L. Bosworth, of Litchfield, was awarded first place with a score of 94; W. C. Hopkins, of Alto, second with a score of 93½, and Clare & Baker, of Caledonia, third with a score of 92. In the dairy division Mrs. T. L. Cornell, of Cedar Springs, and W. H. Oliver, of Grand Rapids, tied for first with the score at 91. The awards for the best exhibits of cheese went to Gar H. Glasser, of Perry, Max G. Rogner, of Gera, and Roy Wilkinson, of Elm Hall, their respective scores being 96, 95 and 94. It might be stated in this connection that out of 88 exhibits not a one scored below 90.

The New Officers.

On Thursday the association elected the following officers for the coming year: F. H. Vanderboom, of Marquette, president; R. F. Frary, of Lapeer, vice-president; G. H. Brownell, of Detroit, secretary and treasurer. The directors for the coming year are Chas. R. Webb, of Chesaning; Martin Seidel, of Saginaw; C. E. Van Slyke, of Durand; F. L. Eldridge, Breckenridge, and M. W. Wentworth, of Battle Creek.

The officers who had in charge the thirtieth annual convention are to be congratulated upon the success of the event. There can be only one regret in connection with the meeting and that is that a larger percentage of farmers were not present to scatter the gospel of better dairying to every section of Michigan. However, through the columns of this journal we shall distribute the messages to its thousands of readers.

SALT NOT NECESSARY TO KEEP SILAGE.

In filling a silo would it be wise to put a little salt every one or two inches to keep the silage from molding?

Newaygo Co. A. K.
When the corn plant is put into the silo at the right stage of maturity, which is at the time when the earliest ears in the field are glazed and dented, it doesn't need salt or anything else to keep the silage. The corn will pack down and exclude the air, which prevents the silage from fermenting excessively. Of course, it would do no particular harm to put salt in at this time if you could get the right amount. Cows ought to have salt every day. If the silage is thoroughly salted you wouldn't have to feed salt when you fed the silage, but the trouble would be to get the right amount of salt, and I would prefer not to put any salt on the ensilage but to give them about two ounces per day each when feeding. I think this would be a better way. A good place to use salt is after the silage has settled pretty well and tramped down, when it should be covered with a layer of salt. You want to have it about an inch deep so that none of the silage shows, and if you do this there will be practically no waste at all in the stored silage.

QUESTIONS ON TESTING MILK.

Please advise me how to get and send samples of milk and cream for testing.

Jackson Co. B. S.
Where one does not have a sampler the best way to get a reliable test of milk or cream is to pour the quantity to be tested from one pail or can, into another and then back again for three or four times which will thoroughly mix the butter-fat with the other parts of the milk. Then immediately take a sample large enough to fill a four-ounce wide-mouthed bottle, fill the bottle, cork tightly and enclose in a mailing case. The sample thus prepared should be sent by parcel post to the Michigan Farmer Laboratories, 674 Woodward avenue, Detroit, Mich., where it will be tested and the sender notified of the amount of butter-fat contained in the sample. A suitable bottle and mailing case may be had for 10 cents by requesting same of the Michigan Farmer, Detroit, Mich.

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

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The New Galloway Sanitary Cream Separator

is made so good in my factory that I will send it anywhere in the United States without an expert to any inexperienced user for a ninety day free trial to test against any make or kind that even sells for twice as much and will let the user be judge, because it's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made today and I have seen them all. Write me and I will tell you how to make money in the dairy business when the pastures are dried up in summer. I did it on my own farm and know. Get my proposition now. It's so good that no dairymen who owns two or a hundred cows can afford to be without it. All I ask you to do is to first get my proposition before you decide to purchase any cream separator of any make, kind or at any price. Just drop me a postal. Address

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183-B Galloway Sta. Waterloo, Iowa

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20,000 miles, look over every factory in the United States and all of the foreign countries—you won't find its superior at any price. Made in our own factory from finest materials on best automatic machinery, by skilled workmen, in tremendous quantities, all parts alike, interchangeable, and standard and sold to you for less money than dealers and jobbers can buy machines not as good in carload lots for spot cash.

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COWS FAIL TO BREED.

I have two cows that came in in September and October. I have taken them to bull nearly every three weeks since then but they are not with calf. I am feeding corn fodder morning and night, and clover hay at noon; for grain I feed about 3 qts. of dairy feed twice daily. Do you think this grain is the cause of my trouble? If so please suggest some other dairy feed, or grain of any kind. I would gladly buy any kind if I could get my cows with calf by doing so.

Oceana Co. H. H. H.

This is a problem that every dairyman is up against once in a while. It is difficult to tell why, but it is so. Of course, there might be many causes and we not be able to tell any of them. There is something about this function of reproduction that everybody don't understand and probably never will understand. It is possible that the sire you are using has been subject to excessive use. Perhaps your cows or the sire are infected with contagious abortion before and sometimes they fail to breed after having had it. Perhaps the neck of the womb is closed up so that there can be no conception. The local veterinarian could determine this. Then there are a good many other things that might be the trouble, that no one can tell by this brief description, and I don't know as I could tell, probably could not, even if the cows were my own and I knew all of the conditions. At least very often we get a cow that won't conceive again and after a time we have to dispose of her for beef. There are remedies to be found for what are called barren cows. You see the advertisements a great many times. Personally I never had very much faith in anything of this sort, and I confess that I never gave any of them a good fair trial. I do not believe that the feed you are feeding is what produces this condition because we have the same conditions many other times with an entirely different feed. It is an easy matter for you to change the feed and see if that would make any difference, but I doubt if you would find that it would relieve this condition.

MINT STRAW FOR COWS.

Having to buy all my grain for my cow, which would you advise me to buy, and in what proportion, and how much to feed, from a financial standpoint? For roughage I have mint straw, which about takes the place of clover hay, as to keeping bowels loose, shredded fodder and mixed hay.

Branch Co. F. A. W.

I have never had anything to do with mint straw in feeding dairy cows, but I have heard good practical men say that cows did well upon it. I would feed the mixed hay once a day, all the cows will eat up clean, and then feed the mint hay or mint straw once a day and corn fodder once a day, or if you only wanted to feed this roughage twice a day then I would feed the mixed hay every day, once a day and alternate, one day feeding a feed of mint straw and one day feeding a feed of shredded corn fodder.

Since this straw is fairly rich in protein you don't need an excessive amount of protein in your grain. I would suggest that you feed corn and oats ground and either cottonseed meal or linseed meal, say two pounds of cottonseed meal to each cow per day, then enough of the corn and oats ground together so that the cow will get a pound of grain for every three or four pounds of milk produced, or three-fourths to a pound of grain per day for every pound of butter-fat produced in a week. Of course, other grains could be procured in the place of corn and oats. I don't think, however, you will get anything very much cheaper or very much better. You could use corn meal and wheat bran mixed equal parts by weight, or you could cut out the corn and feed ground barley, cut out the corn and feed dried beet pulp, but I don't believe you would get anything much better or cheaper than corn and oats and cottonseed meal.

CORN, OATS, AND CULL BEANS FOR COWS.

From the following feeds what do you consider cheapest and best ration for grade Holstein cows for milk for condensation: Cottonseed meal, \$34 per ton; oil meal, \$34 per ton; corn, \$26 per ton; oats \$21 per ton; beans, cull, \$18 per ton. Some claim beans are not a good feed for dairy cows but when mixed with other feeds my cows seem to relish them. What is your opinion? I have plenty of medium eared silage, clover hay (good), and straw.

Huron Co. N. C.

If your cows will eat bean meal readily, I would mix corn, oats and cull beans together, equal parts, for the grain ration. I don't think you will need any other protein food as long as you have

plenty of clover hay to feed in the roughage. Feed what silage the cows will eat up clean twice a day, and if you have plenty of clover hay I would feed them two feeds of clover hay a day, and give them a light feed of straw. Or you can feed them one feed of straw a day and one feed of clover hay. Of course, I would prefer to feed the clover hay if you have plenty of it. Then feed a pound of grain to every four pounds of milk which your cows produce in a day, or you can feed a pound of grain per day for every pound of butter-fat produced in a week. If your cows, as I say, will eat the bean meal and seem to relish it, I don't think you can get any better, or more economical ration.

RATION FOR A YOUNG BULL.

What do you consider the best ration for a ten-months-old bull calf?
St. Clair Co. E. D. DeG.

There is no reason why a vigorous young bull should have any particular ration different from other cattle. He should have all the silage and clover hay he wants to eat, and then a little grain. Of course, you wouldn't feed a bull as much grain as you would a dairy cow because he does not need it. A bull ten months old is growing rapidly and needs a good per cent of protein. If he had all the clover hay he wanted I think he would get along with ground oats and corn meal with perhaps a little oil meal.

ATTENDING THE FRESH COW.

For the first few days after freshening say for two weeks, a cow should be considered an invalid, and she should be treated as such. This is very important, for if mistakes are made then they are liable to affect the profits during the whole period of lactation.

Care should be taken that she does not get chilled. It very often happens that circulation is below normal at the time of calving, and one should watch very carefully. No draft should be allowed to strike a cow. If one notices that the circulation is not up to normal then a blanket should be placed on the cow and left there until the blood flows normal again. Sometimes, of course, this is not necessary, but you never know when it is going to be. It is well to watch such things.

Then again, feeding should be watched more carefully than late. Much harm is done by trying to get the cow onto a good ration of grain too soon. Before the cow freshens she has been having a light grain ration, because it was not necessary to feed heavily. Now as soon as she freshens it is not good judgment to commence feeding liberally at first. Care should be taken that the grain ration be just the same as it has been, and perhaps less for a day or two. Then gradually increase the quantity. She ought not to be on a full grain ration until two weeks or more after she has freshened. Of course, cows will sometimes stand a sudden increase of feed without any apparent injury, and then again they are injured seriously, and the only thing to do is to be safe. So gradually increase the grain until you have her on the ration necessary for her to produce at the most profit. You need not be as careful with the roughage, because a cow will seldom if ever eat enough corn silage or clover hay or, in fact, any roughage, to be injurious to her, but the concentrated part should be increased gradually, and if you do it so you will have no cause for regret afterwards.

RAISE THE HEIFER CALVES.

Some of our reformers who are unduly influenced by talk of consumers in the city seem to cherish a notion that it would be a good thing to make a law preventing farmers from killing calves under two years old so that we would be compelled to produce more beef. Now, of course, this is all nonsense. It would be absolutely unconstitutional.

But the dairyman can't afford to kill his heifer calves. The way prices are running for dairy cows at the present time it will only be a few years before a heifer calf, when it is grown into a cow, will be worth \$100. Many grade cows this fall are selling for \$100 each. The demand for milk and cream and butter is so great and prices are so high that people can afford to pay \$100 for a good grade cow. This being so, a dairy farmer can't afford to sacrifice his dairy calves. They are worth more to raise, even at the present price of veal.

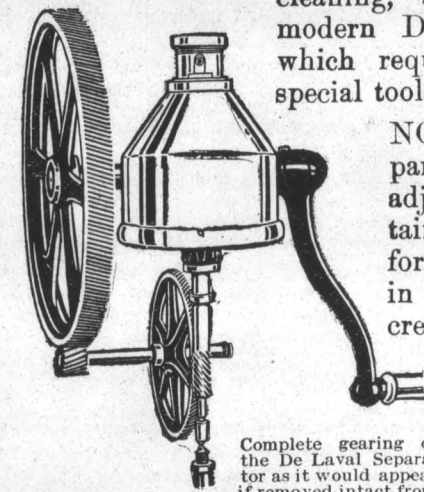
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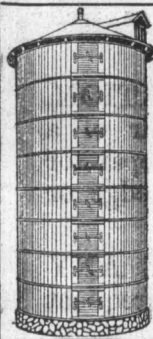


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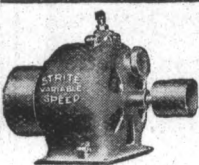
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DAIRYING ON SIXTY ACRES.

Am farming about 60 acres on which there are about 20 acres of low land that is used for pasture. This, however, does not furnish enough for my cows and young stock so I hire pasture for the latter. I have a 12x30 silo, keep eight cows and five head of young stock. I have to buy some grain and some roughage. What would be best for me to purchase? Have a gas engine and a power cutting box. Would it pay to run the straw and stalks through the cutter? Can raise good stock beets on this land. Would it pay to raise beets for milch cows? What part of the 40 acres of low land would you put into the different crops? I have about 14 acres into hay now. Do you think I could profitably keep more cows? Shiawassee Co. F. S. O.

If one wants to keep as many cows as possible on his farm it is advisable to have a short rotation with at least two crops furnishing food for the dairy cow in the rotation. I know of nothing better in Michigan than corn, wheat and clover. The clover sod is plowed down for corn. Then the corn is all put in the silo. The ground is cultivated up and sown to wheat and seeded again to clover. This reduces the work of plowing and cultivating on the farm to a minimum. You have got two crops or two-thirds of your land producing exclusively crops for the dairy cow. Both of them are roughage, and to balance a ration of corn silage and clover hay you will have to buy grain. The grain should be richer in protein than clover hay, so there is nothing better to buy than cottonseed meal, or oil meal, gluten feed, wheat bran, or something of that sort.

Now, besides the feed we need some crop to furnish straw for bedding. It is almost as necessary to have straw for bedding as it is to have feed for the dairy cow. You can't keep a dairy cow clean unless you have a sufficient amount of bedding. Without it you can't absorb the liquid manure in the stable and you can't keep up the fertility of your farm unless you take care of this manure.

You could substitute peas and oats in the place of wheat. Here you would have the straw for bedding and the peas and oats make a splendid ration. You would not have to buy cottonseed meal or gluten feed to feed as long as your peas and oats lasted. Peas and oats are not quite as good to get a catch of clover as the wheat, and the foliage is little dense, but usually one can be sure of a catch of clover even with peas and oats. With a four-year rotation you could put in wheat after the peas and oats, making the rotation as follows: Corn, peas and oats, wheat, and clover. You should keep the clover one year and then plow it down for corn. On the clover sod is the place to put the stable manure so as to grow magnificent crops of corn.

The cornstalks will not be eaten up very clean unless they are shredded or cut up, consequently I believe it would pay you to run your stalks through the feed cutter. However, I don't think it will pay to run the straw through as the cows will eat all they ought to without cutting.

As long as you have corn silage to furnish the succulent food in the ration I do not think it would be advisable to attempt to grow beets. You might better put all your efforts to growing corn or clover for the dairy cows, because the succulency of corn silage will take the place of the succulency of the roots.

Now the number of cows you can keep on 40 acres will depend almost entirely upon your management. A good many can be kept after you get your farm built up and your rotation established with proper management. In fact, no one knows the limit.

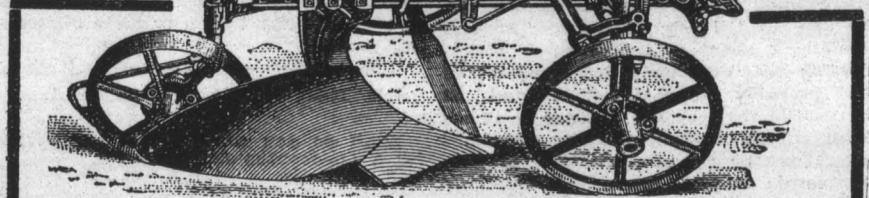
HOW TO GET COW PASTURE FOR THE SUMMER.

I have about five acres of sandy land that had beans on last year, and would like to sow something on it this spring for pasture, so I could turn my cows on it about the first of August. What would you advise? Mecosta Co. H. W. R.

If you are simply figuring on having something to feed to supplement the pastures in August when they get short and dry, plant this field to corn. Part of it to an early corn and part to a late variety. Corn, if you plant it in the spring, will mature sufficiently in August so that it makes excellent feed. There is no plant that you can get that will give you more feed to the acre. If you wanted the pasture early in the season then I would sow the field to peas and oats and rape, sow about two bushels and put a pint or a quart of rape seed to the acre. Seed this in June at least, and probably the last of May and begin pasturing it about the first of August.

Equipped with "Nip" bottom. Can also be fitted with the famous Cockshutt "Judy," "Kid" or "Kangaroo" bottoms.

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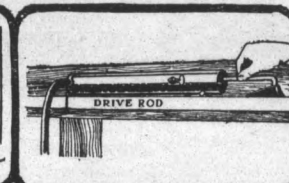
These are two points where Cockshutt's excel. Ours is a plant with an experimental staff working every day in the year to improve and perfect the design of our goods. They go far afield for first hand experience. Rest assured the type and design is correct. The "Beaver" is not an experiment in any way—it has proven its ability on thousands of progressive farms. Illustration shows it equipped with knife colter. We also supply Rolling Colter or Jointer when they are wanted.

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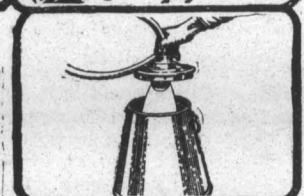
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Live Stock.

PREPARING FOR SPRING PIGS.

Considering the possibilities for profits in rearing pigs and fitting them for market at prices that have prevailed for several years, it seems as though pig raisers would bestow their best efforts, not only on the brood sows during the winter, but would make all the provisions necessary to save practically all the pigs at farrowing time. But such is not the case, and heavy losses are met with each year.

It has been my privilege to be among pig raisers a good deal during the winter and observe the treatment given the brood sows. In many cases where the sows are fed almost wholly on rich, concentrated feeds, they are not given an opportunity for a sufficient amount of exercise to enable them to keep control of their own bodies. The sows, though well fed, should be nimble and active. A reasonable amount of exercise ought to be allowed them each and every day during the winter. I may be considered a crank on the subject of exercise for brood sows in the winter, but bitter experience and meeting heavy losses in the past from neglect along that line, is my excuse for emphasizing this important matter.

An important fact should be kept in mind: The sow wields a powerful influence on the vital energy of the pigs at the time of conception, because from her the internal structure of the pigs are determined to a very great extent. Through the circulation of blood to the foetus nourishment and life itself is dependent on her during the whole period of gestation. If her whole circulatory system is active and healthy, the foetus will partake of the same characteristic. If sluggish, she can not impart life and constitutional vigor, and the pigs are very likely to die before, or soon after, birth.

An active circulation of blood has a potential influence on the foetus, determining its character, during the early part of the period of gestation. At what time, if any, it is safe to cease regular exercise during the period of gestation I am unable to say. It is certainly safe, for the benefit of both sow and pigs, to have the sow take exercise continuously and regularly during the whole period.

Some Feeds Have a Bad Effect.

Our forefathers talked very glibly about good and bad luck with their sows. We now know that some feeds have an influence on both mother and pigs and bring about bad results. Feeds that lack the necessary nutrients needed to maintain the sow in good condition should not be depended upon. A small quantity of roots each day in connection with other feeds, are beneficial, but should not constitute the major portion of the ration.

Corn alone, is too heating and tends to produce adipose membrane, and not enough blood, bone and muscle. Use it as only a minor part of the ration. In my own experience I have found rye meal a dangerous feed for brood sows during the period of gestation. It is a difficult matter to get it entirely free from rye smut, ergot, which will be very likely to bring about bad conditions, and severe losses. A variety of grain feeds rich in protein, and any of the clovers are safe, if given in proper quantities and in a proper manner, therefore it is best to rely on them. The sow should have some sloppy feed twice per day in moderately cold weather and once per day in severely cold weather, to meet the needs of her system. Give some laxative feed just before the pigs are expected, to prevent constipation.

Fixing the Pens.

All careful and prudent breeders keep a record of the dates when the sows are bred. A man who neglects to keep a record of the dates, is too indifferent to his own best interests to succeed.

Knowing the exact date when the pigs are expected one can prepare the pen where the sow is to farrow and be ready to meet the conditions which are likely

to prevail. If it is early in the season and there is danger from cold, and there always is danger during March and the early part of April, prepare for it. See that there is no chance for cold air to come up through cracks in the floor. Bank around the outside of the pen with straw manure well packed down. Not only batten the cracks in the side of the pens, but put some false ribs or studding up on the inside, nail some boards on as lining, and pack in between the outside and lining, fine straw or hay so as to make it air tight. Put a false tight covering over the nest just a little above the sow's back when she is standing up. Make a movable partition as high as the false covering, to place around the nest the night you expect the pigs to arrive. Use fine straw in the nest and only as much as will be needed to make a good nest and keep the little pigs off of the floor.

A sow inclosed in such a pen on a cold night can be left alone the same as in May or June. Her own breath will warm the pen and keep it warm. She beats the warm water jugs or heated grain sacks for warmth, for she is a generator of heat, and is right there all of the time with an unchangeable temperature.

If the sows are not occupying the farrowing pens right along, it is a good plan to put the sow in the pen where she is to farrow ten days or two weeks before the pigs are expected, to allow her to become accustomed to the place and feel at home. Some sows put in the farrowing pen on the eve of the arrival of the pigs are restless and uneasy. Avoid anything that will tend to disturb or annoy the sow, near to, or at the time of farrowing. It is well to look in and see if all is going along well and do not interfere to help her unless it is absolutely necessary.

By observing the points we have mentioned, regular exercise, giving the right kinds of feed, fixing the pen so as to avoid any cold draughts of air from the floor or sides, and avoiding cold air coming down from above to chill the little pigs, and letting the sow become accustomed to the farrowing pen before time to farrow, success in saving the pigs may be expected.

Wayne Co.

N. A. CLAPP.

FEEDING SHEEP AND LAMBS FOR PROFIT.

Address by Prof. J. M. Evvard, of Iowa, at the recent meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association.

(Continued from last week.)

To compare the relative efficiency of corn silage and the standard leguminous hays for the wintering of pregnant ewes we carried on in the winter of 1911-12 quite an extensive experiment. The objects of the experiment were to determine the relative influences in producing strong, thrifty, well-boned lambs of good size. Forty-eight ewes were equally divided as to breeding, thrift, condition, shearing ability and weight, into four lots as follows:

Lot 1—Clover hay and shelled corn.
Lot 2—Alfalfa hay and shelled corn.
Lot 3—Clover hay, corn silage and shelled corn.

Lot 4—Corn silage and shelled corn.
These ewes were all bred to the same ram, the breeding season beginning September 24 and ending November 18. The ewes were run onto blue grass during the fall, a fairly liberal allowance of corn and cottonseed meal being allowed. They were divided into lots on November 15 and fed different rations.

It is pretty well conceded that 90 per cent of the dry matter of a fetal lamb is formed in the last half of the gestation period of five months. The influence of the respective feeds, therefore, were on the different rations practically the last four months of this period on the average.

The character of the lambs produced by these various rations may be designated as shown in this table:

Lot No.	Vigor.				Condition.			
	Av. No. Lambs.	Av. Wt. Lambs.	Strong Per Cent.	Medium Per Cent.	Weak Per Cent.	Dead Per Cent.	Prime to Medium.	Medium to Inferior.
1	1.67	6.58	66	30	5	5	65	35
2	1.75	7.91	86	5	5	5	76	24
3	1.67	7.44	80	20	None	None	73	27
4	1.33	8.36	81	19	None	None	82	18

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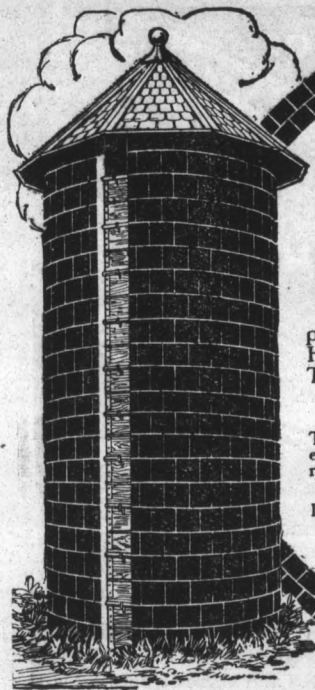
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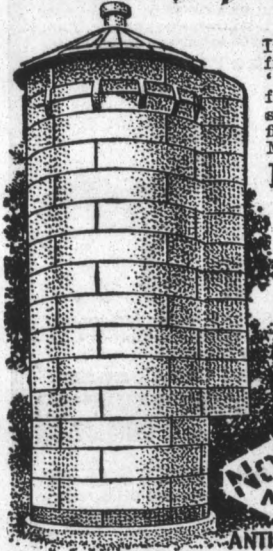
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It will keep the silage in sweet, wholesome condition from one year to another. Testimonials prove that "ZYRO" Silos eliminate waste and preserve ensilage perfectly. Reason for this is their absolutely air-tight construction. NO-CO-RO METAL is non-porous, and perfectly fitting doors seal "ZYRO" Silos almost hermetically. Many other exclusive features combine to make them

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Easy to erect—only the most common tools are needed. Sectional sheets are easily handled by one man. Special flange construction—both vertical and horizontal—greatly strengthens side walls, which are made of extra heavy gauge metal. No holes penetrate walls anywhere! Ventilator on roof provides pure air and light for inside of silo. "ZYRO" Silos are absolutely storm-proof. Heat, cold, fire or water do not affect them. All their superior points are described in our

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Tells all about NO-CO-RO METAL and proves its lasting qualities. Describes construction of "ZYRO" Silos step by step and pictures all their unique features. Many photographic illustrations show how "ZYRO" Silos do efficient duty on many fine farms. Write for your free copy of this instructive book today.

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Founders of the pure-galvanized-iron Silo Industry



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Get ready to build a silo for 1914. We have a special EARLY BUYERS' Proposition which will be of interest. A new book by Benjamin Good, "The Watch Tower of Prosperity," our new catalog and other literature will be mailed free upon request. Write for them today. Address nearest office.

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If you own cows or stock, you can get this great book free, if you'll simply write for it, mentioning whether or not you now have a silo. "Why Silage Pays" is full of good ideas for making more money from your stock. Tells, for example, the best way and right time to cut various kinds of silage. Also tells you about the Silzard Ensilage Cutter. Rapid—big capacity—economical—simple—almost turn back—fills highest silos—safe.

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Has no equal in quality of material used in its construction or in matter of safety and convenience in feeding. Built of best wood staves obtainable. Strong, easy to climb ladder and a perfect anchorage system.

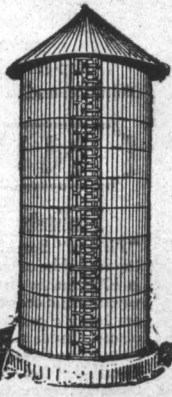
Doors Open and Close on Hinges

Absolutely air tight and without friction. Prevents freezing in winter and drying out in summer. Makes better quality silage.

Our free book contains all the facts about this great silo, also explains our offer on Lansing Silos and Silberzahn Silage Cutters. Address nearest office, Dept. 15

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Ensilage can't spoil in the B. V. T. through cracks or leaky joints, because there are none! Study the end view of the B. V. T. Block.

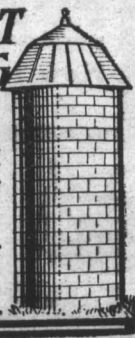
The double inside and outside walls give a perfect nest for cement, absolutely seal the vertical joints and prevent air leaks. Its four walls and triple air chamber gives solid construction, that is sun-proof, air-proof, frost-proof, time-proof, and fire-proof.

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Made of the finest Brazil glazed, vitrified fire-clay, as permanent as the everlasting hills. Any mason can erect it. Once up, it will stand for centuries without painting, patching, repairing or other attention.

We have just issued an interesting book of silo facts. It is FREE. Send for Booklet G.

BRAZIL HOLLOW BRICK AND TILE COMPANY, BRAZIL, INDIANA.



Condition was marked on each lamb at birth, using the following scheme with fattest, first, prime, choice, good, medium, fair, common, inferior. None of the lots had an inferior lamb. The clover lot was the only lot to have a common lamb, which amounted to five per cent of total born.

The ewes were so fed as to make their gains practically identical. In the 115 to 120 days the average gains on these rations daily were: Lot 1, .231; lot 2, .253; lot 3, .225; lot 4, .237 lbs. Thus the factor of gain was uniform. These ewes were what would be considered well fed, much better fed than the average farm ewe.

That corn and corn silage should produce such strong, well conditioned large lambs at birth is somewhat surprising.

Last year the Animal Husbandry Section of the Iowa Experiment Station conducted a comprehensive feeding trial with four lots of breeding ewes in order to work out the best corn belt rations for wintering them.

The object of this experiment was to determine as accurately as possible, whether or not silage was responsible for undersized and weak lambs at birth. The rations fed were as follows:

Lot 1. Clover hay according to appetite, plus a grain mixture of corn four parts, oats two parts, bran one part. The lambs from this lot averaged 8.192 lbs.; 100 per cent of these were strong in vitality.

Lot 2. Clover hay according to appetite and clover hay, or corn silage rather, allowing twice as much silage as hay, plus a grain mixture of corn one part, oats two parts, bran one part. The average weight of lambs in this lot was 8.636 lbs.; 100 per cent of these were strong.

Lot 3. Corn silage according to appetite, plus a grain mixture of oats, one part, bran one part. The lambs in this lot averaged 8.023 lbs.; 100 per cent of these were strong.

Lot 4. Corn silage according to appetite, plus cottonseed meal, cottonseed meal fed at the rate of one pound to every 30 pounds of corn silage. The average weight of each lamb in this lot was 7.282; 82 per cent of these lambs were strong and 18 per cent were weak. It is well to remark in passing that the 18 per cent of weak lambs was due in the judgment of the experimenters, to the advanced age of the ewes which produced them, rather than to the evil effects of the ration.

It is quite evident that within reasonable limits, the lambs which we wish to secure should be quite large at birth, strong in vitality and should possess good underpinning. The rations above used varied in their effects upon the production of such lambs. The economy of the various rations was in favor of those lots which received the largest amount of corn silage. A statement of the economy of keep in the various lots is interesting.

In figuring the daily maintenance cost per ewe during the period, her gain was credited at five cents per pound and all feed was charged at market prices. Good breeding ewes are worth five cents per pound, if they are not the logical thing is not to keep them for breeding purposes. This credit, then, is quite fair and inasmuch as it affects all lots equally is not to be questioned insofar as the experimental results are concerned. On the above basis the daily maintenance cost per ewe in the various lots was as follows:

Lot 1, 1.37c; lot 2, 1.02c; lot 3, 0.78c; lot 4, 0.68c.

The feeds in figuring the above maintenance cost are valued as follows:
Shelled corn, 40c per bu; oats, 30c per bu; bran, \$1.25 per cwt; clover hay, \$10 per ton; corn silage, \$2.50 per ton; cottonseed meal, \$30 per ton.

Remember this as taught in lot 4, that corn silage given as an exclusive roughage, even though supplemented with the necessary amount of protein, is still not as successful as where a leguminous hay is allowed. The average birth weight of the lambs of lot 4 was less than any of the lots. Their weight could have been increased quite a lot by the use of clover hay and perhaps a little oats to the ration. It is interesting to relate that these lambs in lot 4 showed in both their front and hind shin bones less circumference than any of the other lots.

Lot 2, which received clover hay, corn silage and a grain mixture of corn one part, oats two parts and bran one part, had the largest bones of any lot. The average gain per ewe was about the same in all the lots during the winter period. The range of gain per ewe in the 120 days of the experiment was from 10 to 15 pounds. Ordinarily we figure that the

ewe should gain during the winter period enough to counterbalance the loss due to lambing, plus the weight of the fleece produced. On the average, this will mean that in the pregnancy period of 147 days, the ewe should gain about 25 to 30 lbs. This, of course, is taking it for granted that the ewe was in good condition at the time of breeding, if in thin condition at the time, her gain had best run higher during the winter months, in accordance with the circumstances.

The saving of practically a half cent a day upon the winter keep of ewes is quite an item. If a man has a flock of 100 ewes this would mean a saving of fifty cents per day, which saving from November 1 to April 1 will total the very neat sum of \$75. Likewise it will boost the good name of silage as a money saving feed.

Let it be understood, however, that I do not at the present time advise the feeding of corn silage as an exclusive roughage, neither is it to be advised that corn silage be fed along with a grain ration of corn only. In the light of our present investigation this would be quite disastrous. By all means a shepherd should best secure some alfalfa or clover to feed in conjunction with the silage. He should also be careful not to allow the ewes to eat more than two or three pounds of silage to each pound of hay. Silage is highly palatable and the ewes will leave the hay to partake of it. The thing to do, then, is to limit the silage fed to the above proportions. Along with this ration of silage and alfalfa or clover, enough grain should be fed to keep the ewes growing nicely. The grain required will be very little under these conditions and will not exceed more than one-third of a pound per day. Equal parts of corn and oats will answer for this grain. A little bran is not out of place. If the farmer does not have the oats or bran, linseed oil meal and shelled corn mixed with a proportion of seven to one will give good results.

The above experiment is being carried through this winter with modifications and with the hope in view of throwing more light upon the adaptability of corn silage in the ration of the pregnant ewe.

AN EXPERIENCE WITH HOG CHOLERA.

In 1874 I had a fine lot of hogs and pigs, and I thought it would be a fine thing, as it was very dry and hot, to let them run to a spring brook which crossed my farm. So I built a lane to the brook and they wallowed in the mud and water.

In less than two weeks they all died. I soon bought a brood sow and took six shoats to fat on shares which I did not let to the brook at all, but they were in the barnyard where the hogs that died had been, and took the disease. The sow died and three of the shoats, and my neighbor that I took the shoats of took the other three home and killed them to save their lives.

The next year I was appointed manager of our county farm. We always kept there a lot of hogs, and I had made up my mind that hogs did not have to wallow in mud to live and be healthy, so I kept them in a dry field and they were all healthy.

The next year one of the superintendents suggested that we let them run to the water, and the hogs commenced to die with the cholera. I have since kept my hogs dry with plenty of shade and I have not had any cholera.

Two fellows started a hog ranch on a place close to Grand Rapids. They put on 100 hogs and drew garbage to feed them. There was a brook running through the place. I asked them if they were going to let them run to the brook. They said yes. I told them my experience and that their hogs would get cholera and die. They said the hogs have got to have water. They had it and they lost over 100 hogs the next year.

Kent Co.

A. H. GUILD.

Buyers of farm horses in the Chicago stock yards are more particular in their selections than formerly, and little geldings weighing from 1200 to 1250 pounds are least wanted, these being sold fully \$40 to \$50 per head below good mares of the same class. Common geldings are purchased as low now and then as \$125, while the best farm mares are sold usually around \$225. Country consignors should endeavor to buy horses that are sound, for blemished animals are hard to sell, even at a big discount in prices. Surprisingly few horses have been sold at high prices in recent weeks, and good wagoners have sold as low as \$200, while livery horses sold as low as \$175 a pair.

Overland \$950

Completely equipped
f. o. b. Toledo,

Costs You 30% Less—

THE man who buys without comparing or analyzing only succeeds in grossly fooling himself. The better you acquaint yourself with values the more intelligently and economically you can buy.

If, in one car, you can get a longer wheelbase for less money than *that* car offers a greater value.

If, in one car, you get a more powerful motor for less money than *that* car offers you still greater value.

If, in one car, you get larger tires for less money than again in *that* car you get an additional value.

And so on throughout the entire car. If the fundamentals are larger, better and more powerful and the purchase price is less, which does it seem reasonable to buy?

The closer you make such an investigation the better the Overland shows up—and the harder it is on our competitors. Why is it you seldom see any of our competitors advertising their specifications? Are they afraid or ashamed?

Be that as it may, here are the facts:

The \$950 Overland has a motor that is as large and as powerful as in most \$1200 cars. *Compare and see.*

The \$950 Overland has a wheelbase as

long as on most \$1200 cars. *Compare and see.*

The \$950 Overland is roomier, has greater leg stretch and more actual comfort than most \$1200 cars. *Compare and see.*

The \$950 Overland has tires as large as on most \$1200 cars. *Compare and see.*

The \$950 Overland has electric lights throughout, the same as \$3000 to \$5000 cars. *Compare and see.*

The \$950 Overland has just as complete and just as expensive equipment as most \$1500 cars. *Compare and see.*

The \$950 Overland is just as superbly and richly finished as any \$1500 car. *Compare and see.*

The \$950 Overland is manufactured just as carefully as any car. *Compare and see.*

And such greater value for less money is possible on account of our enormous and therefore economical production methods, because we are the largest manufacturers in the world of this type of car.

Why hesitate? There are more Overlands being sold today than any other competing car made. And this is because we continue to give more standard car for less actual money.

The purchase of an Overland will save you a clear 30%.

Get in touch with the nearest Overland dealer. Handsome catalogue on request.

(Please address Dept. 86)

The Willys-Overland Company, - Toledo, Ohio

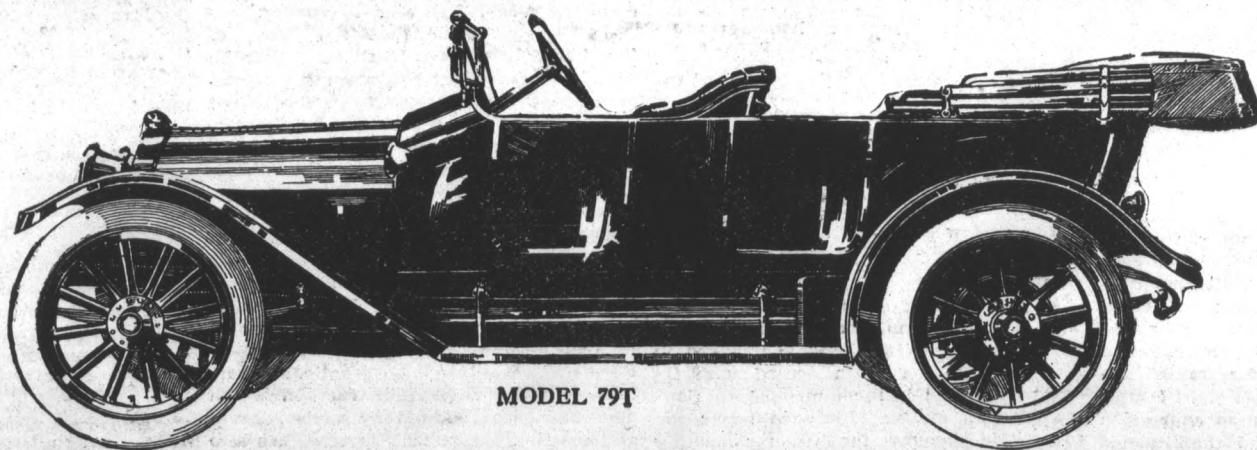
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DETROIT, FEB. 21, 1914.

WASHINGTON.

The face of Washington in profile in our cover design, suggests the deep anxiety that for seven years or more of the Revolutionary War was the constant and trying portion of the great Commander in Chief. Those were indeed "the days that tried men's souls;" but the men and the women of the Revolution were made of rugged material. With enemies behind him as well as at his front; subject repeatedly to malignant criticism by cabals formed against him in Congress and even among his officers; mercilessly slandered by a truculent press; fighting with inadequate forces, for whom he had the greatest difficulty in obtaining clothing and food and supplies and pay enough to hold his little ragged army together; no wonder the great commander became an austere man with whitened locks and deeply furrowed face.

The artist relates the following recollection of his maternal grandfather's interesting account of having seen Washington when President:

"About the year 1795, the grandfather, then a boy of fourteen, went from his home in Connecticut to New York for a few days of sight-seeing. One day upon the street, he heard the people calling to one another, 'Here comes the President,' and then there were shouts of 'Huzzah, Long live the President,' 'Long live Washington,' etc." (Our word "Hurrah" seems to have appeared at a later date).

"A smart equipage, a coach with four horses, appeared, preceded and followed by four cavalymen with sabers at 'carry.' The coach drew up to the sidewalk near a building entered by an outside stairway. The driver and a postillion riding the forward night horse, retained their seats and a servant in livery got down from a high seat at the back of the coach and opened the door next to the walk. President Washington emerged, dressed in a black velvet suit of the costume of that time, with knee breeches, black silk stockings and low shoes with silver buckles, an abundance of immaculate lace showed at his throat and wrist; the very slender dress sword in its black scabbard, had an ivory handle with bold mountings and an insignia of gold braid adorned his fri-cornered hat. Very erect, and followed at a respectful distance by his secretary, the President walked deliberately to the stairway and up to the landing, fronting the open door, without appearing conscious of the presence of the crowd of a couple of hundred people or more, or of their words of warm acclaim. Just at the threshold of the doorway, he wheeled about with the precision of a trained soldier, brought his hand to his right temple with a military salute with no expression of emotion in his face, and then turned and disappeared in the open doorway. His secretary then mounted the stairs to the landing and followed."

The month of February is honored indeed as the birth month of Washington and Lincoln. Their places in history and their fame are equally secure. Judged by their achievements and their exalted personal character, the pages of all history

can hardly present their peers. Their memory and the example of their patriotism, will continue forever a precious heritage to the American people and to the world.

Well, indeed, does Washington deserve to be termed "The Father of His Country," and the generations of his countrymen who were contemporary or near to his period could well say of him:

"First in war: first in peace:
First in the hearts of his countrymen."

CURRENT COMMENT.

The United States Agricultural Credit.

Commission to investigate and study in European countries co-operative land-mortgage banks, co-operative rural credit unions, and similar organizations and institutions devoting their attention to promotion of agriculture and betterment of rural conditions has made its report to Congress, with suggestions as to needed legislation, and the same has been printed in full in Senate document No. 380. It will be remembered by the reader that by the provisions of the act making appropriations for the Department of Agriculture for the present fiscal year, the President was authorized to appoint a commission composed of not more than seven members to co-operate with the American Commission assembled under the auspices of the Southern Commercial Congress for the purpose of such study and investigation as is above noted. In pursuance of this authority, President Wilson named as this committee, Senator Duncan U. Fletcher, of Florida; Senator Thomas P. Gore, of Oklahoma; Congressman Ralph W. Moss, of Indiana; Col. Harvie Jordan, planter, of Georgia; Dr. John Lee Coulter, agricultural expert of the Census Bureau; Dr. Kenyon L. Butterfield, President of the Massachusetts Agricultural College, and Dr. Clarence L. Owens, managing director of the Southern Commercial Congress. This commission, accompanied by a small clerical force, made the trip to Europe with the American Commission last summer and since their return have been engaged, in co-operation with the American Commission, in classifying the information secured and in reaching the conclusions based upon its consideration which are presented in this report, which embodies the commission's conclusions and recommendations on the subject of long term credit.

Space will not permit anything like a complete review of this report in a single comment. Briefly stated, the conclusion is reached by the commission that the use of the power of the whole people, which we are rapidly learning to use for the purpose of accomplishing more cheaply or more efficiently duties which have hitherto been performed by the individual, should be extended or applied to the solution of the American farmer's problem, in the betterment of facilities for the financing of his business in an adequate manner. On this point the report says:

Agriculture has been the one great national industry which has been without organization and has been absolutely helpless before the wonderful growth of our nation. Therefore, the financing of our farms has become a national problem. The savings of the nation must flow out to the farms in order to put agriculture on a proper basis as compared with other organized industries. This can only be done by wise and patriotic legislation. Farm securities must be honored by nation, by state, and by individual. Fortunately everybody will profit by such co-operation. The investor—from the smallest creditor to the largest capitalist—can purchase a security which has been thoroughly investigated by a bank under strict government inspection, and which in addition is guaranteed by the capital of the bank. He has secured a bond which is practically as safe as a security can be. The owner of the property has been equally accommodated, since he can readily secure a loan on his property up to 50 per cent of its value. The general public will be greatly benefited, because the cost of living will always be predicated upon the great law of supply of foodstuffs produced from the earth, and the volume consumed by the people who inhabit the earth.

As a means of accomplishing this desired result, a form of bill has been drafted by the commission and is included in its report, which is in accord with its conclusions and is recommended to Congress as an outline of needed legislation to provide adequate facilities for meeting the needs of farmers for long term credit through the creation of land mortgage banks. The method recommended by the commission contemplates the creation of a class of securities known as land mortgage bonds and give them the favorable position as an investment security which is always accorded to federal and state bonds, being, like them, based on the

public wealth and issued to strengthen and perpetuate the nation.

Space will not permit the printing of the proposed bill in connection with this comment. Briefly reviewed it provides for the organization of both independent and co-operative banks to be operated on a competitive basis and as supplementary to the present banking system. It is proposed to have these banks operate under federal charter but to limit their operations to a single state on account of the lack of uniformity of state laws regarding conveyances, registration, foreclosure, taxation, exemption, etc. The varying interest rate in different states is also mentioned as a reason for this recommendation. Government aid in the financing of such institutions is not recommended, on the ground that the commission believes it not only unnecessary but unwise. The commission takes the ground that the farmers of the country do not desire any special privileges, and that the idea of special privileges is antagonistic to the spirit of our institutions. As proof that direct government aid is not needed the report contends that the security afforded by our farms, the value of which is estimated to be over \$40,000,000,000 and yielding an annual product of a gross value approaching \$10,000,000,000, is ample for the creation of a liquid security which will be readily accepted by investors and which will enable the farmer to use his asset of land as readily as the merchant uses his stock of goods. As a means to the end that the farmers of the country may have the benefit of the lowest possible interest rates the commission recommends that the land-bank bonds provided for in the proposed bill, as well as the mortgages which are the basis for their issue, shall be exempt from taxation. Upon the assumption that such a tax must ultimately fall on the borrower in the form of a higher interest rate, the proposed bill not only provides for the above exemptions from taxation, but the exemption of the capital stock of the land mortgage banks as well. In this respect the bill follows the federal reserve act on the theory that the same privilege should be given to agricultural banks as to commercial banks.

With the submission of this report, the formulation of legislation to be considered by Congress is now in the hands of the committees of the two houses. These committees now have before them many bills relating to this important problem, some of which will be discussed in these columns as the legislative program becomes more definite.

The U. S. Senate has passed the bill introduced by Senator Kenyon, of Iowa, appropriating \$500,000 for demonstration work in the eradication of hog cholera, under the direction of the Department of Agriculture. This bill is now pending in the House. Immediate and favorable action on the bill would be hastened by personal letters from interested Michigan Farmer readers addressed to their congressmen. It is time that a concerted effort in this direction was made by both the states and federal government. Michigan has been working to this end for several years. Now is the time for Michigan hog breeders and feeders to act in an effort to secure the co-operation of the national government in this work by urging their representatives in Congress to actively support this bill.

For some years there has been a growing feeling that the value of the State Round-up Institute might be greatly increased by so changing its character that the lectures given would not be in any sense a repetition of those given at the local farmers' institutes, or county round-up institutes held in different sections of the state. Various plans have from time to time been suggested, including the securing of a large corps of speakers of national reputation to discuss the more important problems in which the farmers of Michigan would have an immediate interest. Another scheme which in reality would make the Round-up Farmers' Institute a practical short course in agricultural instruction, which plan has been followed by various other states with considerable success, has also been proposed.

The plan adopted for this year's Round-up in Michigan, as set forth in the general announcement of the meeting which appeared in our last issue, includes something of both ideas. Space will not permit a complete review of the program, but it is sufficient to say that the institute will be divided into various sections

each day during the week, thus affording the farmers and farmers' wives and daughters who attend an opportunity of selecting such subjects as they may desire to hear discussed by members of the agricultural college faculty and outside speakers, as well as the advantage of general sessions at which subjects of interest to all will be taken up. This innovation should be a welcome one to every farmer who has felt the need of special investigation along any particular line of agriculture, as well as to the farm women who will have wider opportunities than ever before to benefit from this general meeting. Every Michigan Farmer reader who can arrange to do so, should avail himself of this educational opportunity which is afforded through the Round-up Institute or "Farmers' Week," as it is now called, which will be held at the Michigan Agricultural College during the week of March 2-7.

HAPPENINGS OF THE WEEK.

National.

The State Mutual Cyclone Co., Lapeer, Mich., was organized about 16 years ago with Ex.-Governor Jno. T. Rich president. It has made only 5 assessments for the 16 years, an average of about 60 cents per one thousand each year. The year 1913 cyclone losses were the heaviest in the history of the state, the aforesaid company paid out about \$270,000 for losses to 6,750 members. This is a good record for the company and under the Attorney General's opinion each member in a mutual company must pay their share of losses. It is not likely that there will be another year for some time when cyclone losses will equal the losses of 1913.

Virtually all of New York state, several of the New England states, portions of New Jersey and Pennsylvania, and lower eastern Canada felt an earthquake tremor on the morning of February 9. The disturbance lasted from 15 to 30 seconds, and affected what are known by geologists as the Devonian and Salurian sections of eastern United States.

The United States Board of Health reports grave danger of typhoid from drinking water taken from those portions of the Great Lakes lying in the path of steamship traffic. The danger also confronts cities receiving water supplies from the same source. These authorities declare that the promiscuous discharge of sewage from vessels is the chief cause of this danger.

A government inquiry is being made into the cause of the collision of the Nantucket and the Monroe off the Virginia coast on January 30, when 41 lives were lost. Testimony shows that the captain of the Monroe and some members of his crew released lifeboats and entered the crafts to escape, without first looking after the passengers.

Storms have done considerable damage to traffic in the northern states in the past week. On Saturday New York and New England suffered severely from a heavy fall of snow and a wind storm that blew 84 miles an hour. On Sunday, northern Mississippi sections were also visited by heavy storms, and railroad traffic has been greatly delayed. The extreme cold of the past week has caused considerable suffering in these same states.

The Federal Commission of Industrial Relations begins an investigation this week of public and private employment agencies, looking toward a federal plan for providing work for the unemployed. The investigation will cover territory reaching from Boston to Kansas City. A report of the findings is asked for within six weeks.

Representatives of the National Drainage Congress and the Red Cross Society are urging that some action be taken to prevent damage from floods. A hearing will be held at Washington, February 26, looking toward this end.

The war department has recommended the construction of a 23-foot waterway, 400 feet wide, in Niagara river on the west side of Tonawanda Island, which will make the Tonawandas ports to which the largest vessels may navigate.

Announcement was recently made that the Aero Club of America has planned a race around the world in which all types of motor driven air craft may enter. The race is to start and finish at San Francisco, and will be held under the auspices of the Panama-Pacific Exposition.

An effort will be made to have Congress pass a law to permit 250,000 horse power of electric current to be imported into the United States from the Canadian Niagara.

Foreign.

Premier Asquith of Great Britain, declares that the British government does not feel able to participate in the Panama-Pacific Exposition in San Francisco in 1915.

An advisory committee has been named by the Columbian congress to wait upon the United States for an indemnity which they expect in return for taking the Isthmus of Panama so soon after it was separated from Colombia.

The British House of Lords last week adopted an amendment in reply to an address by the King demanding a general election on the question of home rule for Ireland. The vote stood 143-55.

A large sum of money has been provided for the purchase of over 200 aeroplanes and the hiring of 75 expert pilots and the erecting of military sheds at ports of call in all sections of France. By this equipment it is hoped to establish a complete system of military air ports through that country.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

The Passing of the Redskin—By Earle W. Gage.

IN Oklahoma, 1,937,000 acres of Indian lands are to be sold. Surely this attests to the fact that the Indian trail is fast becoming the track of the mighty locomotive. This vast tract of land is more than 9,000 acres greater than the area comprised in the two states of Rhode Island and Delaware. One-half of the known coal deposits of Oklahoma are within its boundaries, while 1,292,000 acres are segregated timber lands, and approximately 200,000 acres are unallotted. More than 3,000,000,000 feet of timber stands on the lands, which is available for the market. The estimate of coal deposits is 8,000,000,000 tons. Senator Robert LaFollette, as early as 1908, declared that the coal at the mouth of the mines would be worth \$2 per ton, which would bring the Choctaws more than \$250,000,000. Therefore, the Choctaw must move on, that modern industry and advancement be fed with the materials it desires.

Only 300,000 Indians, true redskins, are among our nearly one hundred million souls. Think on those days when they so outnumbered the whites! Just one to every 235 of our population. This includes the natives of Alaska. These original Americans are divided into more than

every student and reader of Indian fact and fiction.

Old Shah-hab-skong brought all his warriors to defend Fort Ripley in 1862. The Secretary of the Interior and the governor and legislature of Minnesota promised these Indians that for this act of bravery they should have the special care of the government and never be removed. A number of years later a special agent was sent from headquarters, Washington, to ask the Ojibways to cede their lands and to remove to a country north of Leech Lake. The agent asked a friend for aid. He said:

"I know that country. I have camped on it. It is the most worthless strip of land in Minnesota. The Indians are not fools. Don't attempt this folly. You will surely come to grief."

He called the Indians in council and said: "My red brothers, your Great Father has heard how you have been wronged. He said: 'I will send them an honest man.' He looked in the North, the South, the East and the West. When he saw me he said: 'This is an honest man whom I shall send to my red children.' Brothers, look at me. The winds of fifty-five years have blown over my head and silvered it with gray, and in all that time I have never done wrong to any man. As your friend, I ask you to sign this treaty."

Old Shah-bah-skong sprang to his feet and said: "My friends, look at me. The winds of more than fifty winters have blown over my head and silvered it with gray, but they have not blown my brains away."

With this the council ended. The Indians are naturally brilliant, and when the governmental schools have touched their minds and hearts, we find that they hold good to many a task, persistently living their duty to its end, shaming many of their white brothers who are forced to meet them in combat on the field of sport. Their nerve is as famous as their treachery.

The Cherokee tribes are having riches poured into their pockets as few other tribes. In fact, for many years they have been most fortunate along this line of financial aid. They have received several million dollars from the United States government in the last few years for the settlement of claims which they hold. And there will soon be another number of government checks made to their favor, the total amounting to more than \$3,000,000. This allotment comes under the head of the Equilization payment, being made for the benefit of the children that have been born subsequent to the per capita allotment of the tribal lands.

The earlier place of habitation of the Cherokee was in Virginia, Tennessee, North Carolina and Georgia. Here they were engaged in warring against the whites for many years, and suffered numerous reverses. In the year 1822, Bowles, or The Bowl, Nicotek and Fields, Cherokee chiefs, made a tour through Mexico for the purpose of securing a grant of land for colonization purposes, but the grant was not made, merely a promise. And so today we find that the portion that was Mexico in the long ago is Texas now, and that the United States government desires this land for white settlers, who they know will make the soil pay well for the space that it occupies upon the map. This, the redskins have failed to do. They are not anxious to labor to any degree, and don't care who knows the fact. The money that the checks call for will suit them far better.

Those who have made a visit to White Earth Indian Reservation, which is situated some two hundred miles northwest of St. Paul, Minnesota, have seen there great things which the present-day Indian is doing. This tract consists of

thirty-two townships. The breeds of Ojibway and Chippewa are here found in great numbers. These are the redskins who gave to Longfellow his Hiawatha. The tract is one of great beauty, consisting of rolling prairies and timber belts, lakes and rivers, while away are the low-lying hills of beautiful Minnesota, which we have read of in the old red-covered history, when the state that now bears the name was almost a boundless providence of lands of all natures. The twelve hundred square miles is literally crowded with loveliness of the highest rank.

The Chippewas received this tract on the fourteenth of June, 1867. Several years ago a large tract of timber was sold by the government, and from this fund, aggregating several millions, each year a certain amount is drawn, being used for the White Earth celebration. And the redskins surely do have a great time of rejoicing. Every redskin within reach of the grounds is sure to be on hand for the fourteenth of June. Hundreds are found, in their primitive way, camping out on the night of the thirteenth, for the affair is a great event to them, and they must be there a night in advance to believe that they have done the justice that is due the day. We can see them a long way off, in wagons, on things that David Harum would say looked like a horse because it isn't shaped like any other animal. Some, too poor to afford either of these manners of transportation, will limp or walk for two or three days, catching a ride for a short or long distance. And when the shades of the night of the thirteenth draw nigh, long trails of tepees and lodges are lined up, showing that the Indian of this country is on hand, even if he does oblige himself the job of working hard for a few days previous. Soon the camp smoke is rolling toward the heavens, and the green easterner will surely think he has driven upon an old-time Indian band, and may run his nag for several miles in hopes that he may not become part of a dramatic scene in earlier Indian history.

The Indians are earlier risers when there is anything out of the ordinary going on. The way they act at the eastern county fairs has no vim or vigor as compared with the scenes that here await the eye. They don their war clothes, and have a real old-time war dance. The drums are rolling out their wierd sounds, and the thundering sounds of hundreds of footsteps take the white man back to days that are not familiar to his eye. Hundreds of mounted braves fall into the lines, and out comes the olden war cry, making the very scalps of his white hearers rise and fall as they recall the earlier stories of American history. The feathers and the bead work that they wear adds to the scene, and withal, we find ourselves looking upon a more perfect picture of the Indian of the earlier days than any painter has yet placed upon the canvas.

The ceremony between Chippewa and Sioux is an event of the day. Starting at a long way from each other's ranks, they drive their steeds with great speed toward the long line of the enemy. The chants of the redskins would cool the blood of the average white. They are taking a recount of their victories and accomplishments over each other. The sight in full detail could never be placed on paper in worded form, nor on canvas with paint. It is wonderful. The chants rise and fall, and again rise, again to fall. They are chanting "Miserere," that ancient chant which whites have used in memory of passing races. Then, abruptly the chants stop altogether, and the plains are as quiet as if no redskins were within a thousand miles. A Chippewa brave, a stout buck, slowly advances to-

ward the Sioux line and, filling a beautiful pipe of sacred red stone, strikes a match, lights the pipe, takes a whiff of the smoke into his mouth and gravely tenders the pipe to the waiting Sioux. Every Indian taking part in both lines smokes the pipe of peace, shakes hands, and the ceremony is at an end. Peace has claimed the hearts of the redskins.

THE KEYSTONE OF THE POSTAL SYSTEM.

BY PATRICK B. PRESCOTT, JR.

Beyond conveying to us the point of mailing, few of us realize the importance of the postmark on our letters or the wonder of the little machine that makes it. Think of a machine cancelling letters at the rate of fifty thousand an hour, about fourteen per second! In large offices, like New York and Chicago, where the output in busy seasons is from one to three million letters daily, suppose these had to be postmarked by hand! It is needless to say that without the cancelling machine the present postal system would be an impossibility.

Large offices are fitted with tables that each have two troughs—one for long let-



One of the Old Chiefs.

ninety separate and distinct languages, and are widely scattered throughout our states and territories, yet they dwell in almost exclusive tribal or language communities. In New York state are Senecas, Tuscaroras, Tonawandas, Onondagas and others, each tribe occupying specially reserved lands, from which the other tribes and all other people are generally excluded.

One of the deep-seated traits of the Indian is his great love to come and go at will. He does not want to have white people tell him what he is to do, and at what time. He is the originator of American independence. The Indian has a keen appreciation of humor and is like a child in his mirthfulness. No orator can see the weak points in his adversary's armor or silence a foolish speaker more quickly. His "Ugh!" at being told the impossible and horrible, is well known to



Squaw's Method of Handling Papoose.

ters, one for short. Beneath these troughs is a running belt which leads to the cancelling machine. Well, eight men face the mail into these troughs and the cancelling machine keeps up with the work of the eight easily and, after cancelling the letters, stacks them neatly into a trough all ready for distribution. Now, one man could face as much mail as five men could postmark by hand; thus the cancelling machine does the work of forty men, and, it need not be said, more neatly and more accurately.

The importance of the postmark is more than is imagined at a glance. We all know of the data within the circle—city, year, month, date and hour—but what about the little incomprehensible figures between the bars of the postmark? First, in places where there is more than one machine, there is always a number between the bars. It is the

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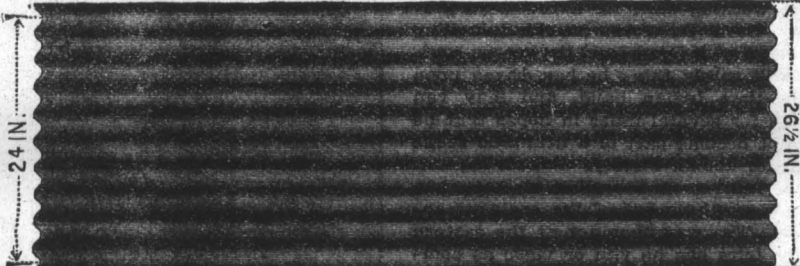
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number of the machine. Near the bottom bar there is always a letter—usually D or C. The necessity? All mail deposited at the post office window—drop mail, it is called—is run on D. All mail collected from street letter box—collection mail—is run on C. Irregularities are run on other letters, but D and C are the most common.

As the clerk who runs a machine always makes a copy of the postmark on a facing slip, signs his name, and deposits it with the superintendent for safe keeping, it is a simple matter to know which clerk handled certain mail.

Thus, in case of complaint, the post office officials always request the envelope. From this they can tell the exact date and time of postmarking, whether deposited in letter box or at post office window, and who cancelled it. If mailed at post office window, they can tell the time of mailing to within fifteen minutes, for drop mail is cancelled every fifteen minutes. If mailed in street letter box they can tell approximately the time of mailing.

With the hand stamp the same accuracy is true. The number in the barred corner that cancels the stamp means all.

TELLTALE RAGS.

BY M. PELTON WHITE.

Donald and Rollin Preston owned a dog by the name of Rags. At the time of this story Donald was nine years old, Rollin seven and a half while Rags was only a year and three months. But Mr. Preston often told the children that Rags, in spite of his youth, behaved far better than both of them put together.

You see, when the dog was taught to do a thing he never forgot. But Donald and Rollin, I'm sorry to say, quite often forgot to do as they were told.

The Preston house was some distance from the street and it was Rag's business to meet the paper boy each morning at the corner, bring the paper back to the house and leave it on the mat on the front porch. When Mr. Preston opened the door the paper was always there.

Now it was Donald's business to fill the woodbox with wood each night, and Rollin's business to split the kindlings and bring them into the house. But it sometimes happened that after Mr. Preston had gotten his morning's paper and went to the kitchen to start the fire that he found the woodbox empty and no kindlings in the kindling basket.

Rags was taught to sit quietly on a chair and wait until the family had finished their meal before he was given anything to eat. Even when the Prestons sat at the table much longer than usual the dog never became impatient and yapped or whined. But when there was company and Donald and Rollin had to eat at second table they complained and were not very good-natured. Then, too, when there was a ball game on, or it was kite-flying time or top-spinning time the boys frequently forgot their manners and bolted their food, a misdemeanor of which Rags was never guilty.

However, if the boys had a few faults they also had many good traits, one of which was that they never teased their dog or allowed anyone else to tease him. You may be sure Rags returned their affection. In spite of his short legs and small body, no boy could wish for a better champion. If he could help it his nose was never far away from the boys' heels. He was as quick as a cat and his teeth were as sharp as needles. There were troubles a plenty for anyone who attempted to molest his young masters.

Once the neighborhood bully was going to punch Donald, but the first thing the bully knew Rags had him by the baggy part of the trousers, and when the bully went home, which was as soon and as fast as his legs would carry him, the bully's mother had to get a new piece of cloth from the piece-bag and sew a big piece of cloth on the bully's trousers.

When Rags was well grown Mrs. Preston said he must sleep in the woodshed. At first the dog didn't like his new sleeping quarters and fussed when he was sent to bed. But after a little time he seemed to enjoy them very much. At nine o'clock, when Donald and Rollin started for bed, the dog would trot to the kitchen door and whine to be let out. Of course Mrs. Preston thought he went to the woodshed, but if she had followed him she would have found out differently. The boys' bedroom was on the ground floor at the back of the house—a fact which Rags knew very well. He would scamper around the house to the bedroom window and stand on his hind legs. Then Donald leaned out of the window as far as he

THE OLD PIONEER.

BY IRA M. COURSON.

How strange are the tales of my grandpa's young manhood,
Whenever his memory bids them draw near;

No orchards, no meadows, no, naught but the wildwood

Surrounded the hut of the old pioneer.
The flocks of the wild birds,
The wolf and the panther,

The fox and the hedgehog, the bear and the deer

Surrounded the cabin,
The little log cabin,
The shake-covered cabin

Of the old pioneer.

My grandfather tells how he conquered the forest

And cleared the rich acres which to him are so dear;

And planted the orchards, and sowed the green meadows,

Surrounding the hut of the old pioneer.
Oh, the long hours he labored,
From daylight till darkness,

Compelled a return to his loved ones so dear—

Back to the cabin,
The little log cabin,
The shake-covered cabin

Of the old pioneer.

That cabin is gone and a building more spacious

Has taken the place of the cabin so queer;

But few are the thoughts that to him are so precious

As the thoughts of the cabin of the old pioneer.

The years have been kind
And he's living in comfort,

Surrounded by those who his old heart would cheer;

But soon he must follow
His little log cabin
The shake-covered cabin

Of the old pioneer.

What blessings from them it is ours to inherit!

What problems to solve and what duties appear!

Then let us be worthy, the great trust to merit,

As children and heirs of the old pioneer.
So let us be active,
Engaged in completing

The unfinished work of the old pioneer
Begun in the cabin,
The little log cabin,
The shake-covered cabin

Of the old pioneer.

could, caught the dog by the collar and pulled him into the room. Very often

Mrs. Preston wondered how the quilts on the boys' bed could get so soiled, but she never for a moment dreamed that Rags curled himself up each night, in quilts and blankets, too, regardless of muddy paws. The boys thought it a great joke

and each laughed slyly out of one side of his mouth. But there came a time when neither thought it a joke at all and each boy laughed out of the other side, of his mouth, as the old saying goes.

One evening there was a big parade down town and Donald and Rollin wanted to go. Mr. Preston had business to attend to and couldn't take them.

"It's no use teasing," their father told them, "you know I never allow you to run the streets by yourselves at night."

Shortly after supper Mr. Preston left home and Donald and Rollin went to the woodshed to split the wood and bring in the kindling. They were both cross because they couldn't go to the parade, for, like some other boys you've heard of, they thought they knew better what was good for them than did their parents.

"It's too mean for anything," whined Rollin, and two angry tears splashed on the kindlings he was cutting.

"Dry up, you baby," snapped Donald. "Come over here behind the woodpile and I'll tell you what we'll do." He talked to his brother in such a low tone of voice that even Rags, who was hunting an imaginary ground squirrel a few feet away, couldn't have heard what he was saying.

That night the two boys went to bed early—at least, that's what they told their mother they were going to do. However, they didn't undress at all. When it was quite dark they slipped out of the window and went to the parade.

At nine o'clock Rags stretched himself and walked over to the door as usual. Mrs. Preston let him out and he trotted around the house and stood on his hind legs beneath the boys' open bedroom window. Poor Rags! No one came to pull him in. After a few seconds he whined a little, just to let his masters know he was ready to come in. Still no friendly hand took hold of his collar. He began to bark, softly at first, then louder and louder. Mrs. Preston heard the barking and hurried to the door to see what was the matter.

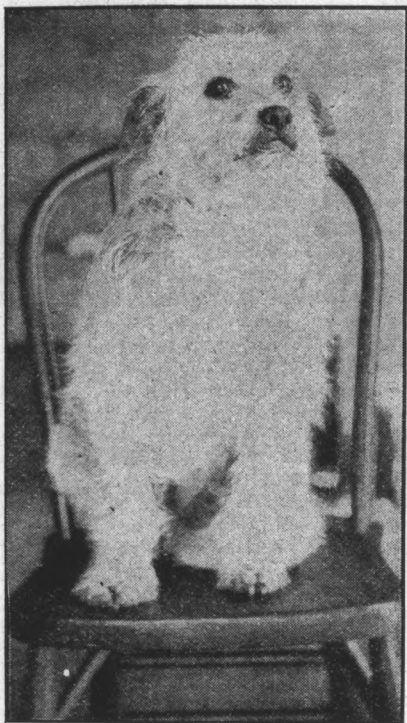
"Come here, Rags," she called but no Rags came, so she went around the house to see what was the trouble. When she found the dog acting so queerly, and saw the open window, she hastened to the boys' room. Of course she didn't find either Donald or Rollin and she was very much worried.

Just then Mr. Preston came home and she told him all about it. Having been a boy once himself, Mr. Preston guessed right away what had happened.

Rags soon found himself shut in the woodshed where he slept ever after, although Mr. Preston did say it was too bad to punish a dog for doing what he had been taught to do.

An hour later the boys opened the gate very quietly and stole around the house. They took off their shoes so as not to make any noise. Then Donald got down on his hands and knees and Rollin crawled on his back, for he was too short to climb into the window from the ground.

All of a sudden a hand that looked dreadfully big and spooky in the moon-



Telltale Rags.

light reached out and pulled Rollin over the sill, then it came out again and caught hold of the collar of Donald's coat and lifted its owner inside the window.

The boys never ran away again, but for a long time they called their dog "Telltale Rags."

WELCOME SCHOOL.

BY FAYE N. MERRIMAN.

"I do not know if I am going to like it or not," said Betty doubtfully as she and Bertie stood looking out over the flat Kansas prairie; "It looks like Lonesome Land to me."

"Does look lonesome," assented Bertie. "I miss the ocean and the mountains, don't you?"

"And the trees—why, there isn't a tree in sight except along the river over there in the west. How desolate it is!"

"Never mind, we have the horses," answered Bertie, "and we can ride as far

don't you remember how Aunt Maud made us go to school in our vacation just across the road?"

Betty laughed. "Aunt Maud did not think much of our private schooling," she said. "And then we had lots of fun at the country school, even if we did not learn anything much."

"I know we did—but just the same I am glad there is no school around here. Want to race to that little mound yonder?"

Betty nodded a gay assent and the ponies galloped off. Soon they had traveled several miles from the sight of their uncle's farm.

"I guess we had better go back," said Betty uneasily, "everything is getting so dark, I am afraid it is going to rain."

"I am afraid so, too. Which way is the farm house?"

"That way, I think," said Betty hesitatingly, pointing toward the south.

"Let's turn back at once, then; I am afraid there is a thunder storm coming."

Betty turned white. "I know we should be killed," she said, her lip trembling. "Uncle always said we must seek shelter quickly when it looks like a storm. The storms here are so terrible. Let's hurry."

But after traveling a half an hour in the direction they thought the right one, they could see no sight of their uncle's home. A warning rumble indicated that the storm was about to commence.

"There is a low something over there," said Bertie pointing. "It looks like a straw stack. Perhaps we could find some kind of a shelter there."

"Why, it's a house!" exclaimed Betty as they drew near.

"Why it is," answered Bertie, "but it seems to be deserted. Let's go inside quickly."

"It is made out of earth," cried Betty in surprise. "I am afraid it will melt if it rains."

"I guess it will stand another rain," laughed Bertie. "See how old it is—the window panes are all gone."

"Then let's lead the horses right in," cried Betty. "They need the shelter as much as we do. Hurry!" And she shivered as a flash of vivid lightning flashed across the darkened sky. Inside they huddled in a corner near the door while the storm raged and the rain came down in torrents. Bertie caught his sister's hand. "I am so glad we found this old house," he whispered. "It saved us from a good wetting if nothing worse. Why, I believe that the clouds are being blown away."

"How the wind blows," shuddered Betty. "I believe that a frame house would have been blown down."

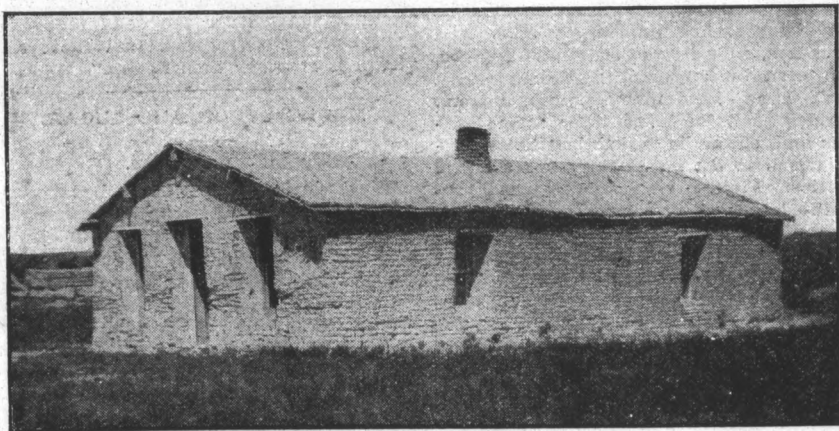
"The worst is over now," comforted her brother with a sigh of relief. "The rain has quit falling and it is lighter."

Betty stood up and looked around the inside of their shelter for the first time. Then she gasped.

"Why, Bertie—it's a schoolhouse!" she exclaimed.

"A schoolhouse!"

"Yes, see the desks at the other end,



Welcome School.

and as long as we like. Shall we take a ride now?"

"Yes, let's do," agreed Betty, and Bertie ran to saddle the two gentle ponies which the children rode.

"I think we will get used to the prairies after a while," said Bertie as they rode out into the fenced country.

"It seems kind of friendly now, doesn't it?" Betty answered. "How pretty the flowers are! That stretch of yellow mustard looks like a patch of sunlight."

"I think we will like it," returned Bertie, "anyway there's one good thing—there isn't a schoolhouse in sight."

"Why, Bertie Brown, you surely don't dislike school as badly as that!"

Bertie grinned. "School is all right in its time and place," he conceded, "but

and the table on the little platform and oh, Bertie, there is even an old map hanging on the wall."

"And inkwells with dried ink in the desks," exclaimed Bertie. "Let's take one home as a souvenir. It seems funny that we wandered into an old schoolhouse."

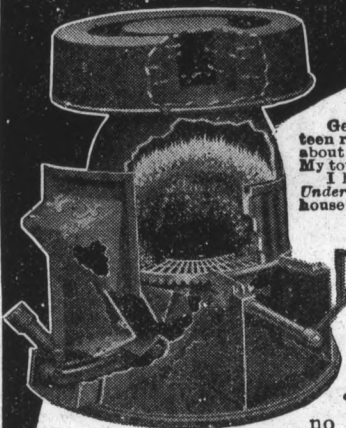
"After your saying that there was not one in sight," answered Betty. "Why, what's that?"

"It sounded like a call." They rushed to the door.

"It's uncle," shouted Betty, and they gave an answering call.

"I've been out searching for you ever since the storm broke," Uncle Will explained as he came up. "It's a good thing you were not out in it. How did you

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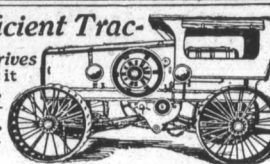
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happen to find the old Welcome School? I don't believe anyone has been near it before in five or six years. It is about the only sod house left in this country."

"Welcome School," repeated Bertie.

"That's a pretty appropriate name for it, I guess. Tell us all about it, Uncle Will."

But Uncle Will shook his head. "There is nothing much about it to tell except that the children of the neighborhood used to go to school here until their families all moved away and left the old sod school-house deserted," he said. "And as for a welcome, you will find a bigger one awaiting you at home than any old shack like this could give."

But Betty and Bertie did not quite agree with him.

LITTLE FARM FABLES.

BY AUNT QUILLIA.

Ann Gets in a Word.

The evening chores were done and Danny was sitting by the open fire.

"Do you know what I like?" he suddenly exclaimed, squaring his broad little shoulders and bracing himself more firmly in his chair.

They all did. As no one replied, however, he went on with just what they expected to hear.

"I like," continued he, "to see a boy with a will of his own, or a girl either, for that matter," with a contemptuous look at Ann.

Some trifling person had once told Danny that he was a jolly little trump, even if he was a bit set in his way, and ever since then he had gloried in his shame, so to speak—for shame it was sometimes.

"Just excuse me," he persisted, clenching his fat fist and rapping the reading table, "just excuse me from a fellow who doesn't know his own mind. Now there is Tad Mason who, if he says it is a good time to go to skating, and another boy says it is too cold or the ice too thin, gives right up and crawls away like a whipped puppy. Can't depend on him for a ball game, either. If someone else thinks it is too hot, why he guesses it is and goes off to the library. Same thing there. If he asks for a certain book and another fellow snorts out 'no good,' why he turns red in the face and sneaks home without any. O despise such weak-willativeness!" (Danny's vocabulary was some times home-made). "I'd rather be a mule than a mollycoddle. Give me resolution, firmness, decision, obstinacy, if you like—anything but a wobbly will. Everybody knows that once I have formed an opinion I stick to it, life or death. They say it would take an ox-team to haul me out of it. That's what I call character." And here (Danny's chest swelled with conscious pride.

"Look at old man Potter, for instance. Always chasing up something he has tried, no matter whether it is agricultural, or political, or religious, though maybe I ought to cut the last out for I believe he has always stuck to his own church. Anyway, within my own recollection he has bought five kinds of drills and spreaders, four hay rakes, three engines, two corn huskers and shredders and I don't know how many potato diggers. Besides that, he takes three farm journals and, old as he is, has had three winter terms at the M. A. C. Same thing in politics. First, a republican, then a prohibitionist, then a progressive republican, then a Bryan democrat, and now they say he has gone back to prohibitionism."

"Now when I get to be a man I mean to be a genuine standpatter in everything. I want people to say, 'There comes old Set-in-his-way, but, gentlemen, you can depend on him.'"

While Danny was trying to catch his breath, Ann managed to get in, "Well, you have drawn a first-rate picture of an old fossil and stick-in-the-mud, I should say. Such men as you aspire to be have always been dead weights on the wheels of progress. The best speaker at the Chautauqua last summer closed his lecture with this remark: 'The man who is set in his way is not apt to hatch out any new ideas.'"

Proud Father—"I tell you, sir, that boy of mine will be a wonder!"

Friend (wearily)—"What wonderful thing has he done now?"

Proud Father—"Why, the other day he ate all the preserves in the pantry. I overheard him say, as he smeared the cat's face with the stuff: 'I'm sorry, Tom, to do this, but I can't have the old folks suspect me.'"

WASHINGTON'S BIRTHDAY.

BY RUTH RAYMOND.

First in war, a hero bold,
First in peace, his battles told;
First in hearts, the crown he won.
All men love our Washington.

FROM GRANDFATHER'S DIARY.

BY G. A. RANDALL.

I simply cannot resist the temptation to jot down a few more of those old-time farm transactions made 70 or more years ago in our own state. They constitute a gauge and index, showing faithfully the progression of people and times since that date. And while I thumb the time-stained pages of these old diaries, some of them bound in quaint calf-skin and written in with both lead pencil and "goose quill" pen, I seem to see in fancy the old log house, with its row of stately and aged black walnut trees bending under their weight of luscious nuts, and grandfather—an old man then—leaning on his cane in the wide doorway. All this and more—but I was very young then and have forgotten. But to the chronicles:

Jan., 1849, S. Treadwell, Dr.—To one pair "sled runners, made and ironed," \$1. It seems the same man had another set made the next season, as indicated by a later entry, thus: Dec., 1850, S. Treadwell, Dr.—To one pair sled runners, 75c. May, 1852, John Powell, Dr.—To "one iron bnad," 12 1/2c; "to putting it on," 10c. Afterward the old gentleman must have changed his mind, for over the 10c, written in ink, are two big ciphers.

Those fond of trapping should note the following: March, 1851, S. Newland, Cr.—By one mink (fur), 35c; one 'coon (fur), 57c. Dr. to one box caps (percussion for his gun), 8c. Today prime mink are worth up to \$8 for a single fur and other furs (domestic) in proportion. Here is another fur entry. Nov. 4, 1851, S. Newland, Dr.—To one sheep pelt, 25c; one deer skin, 75c; 30 rats and one mink, \$2.40.

Items showing the value placed upon labor at that time are interesting: Dec. 8, 1847, Russell Barrington, Cr.—By "3/4 day butchering, with son," 37 1/2c; July 11, 1847, to 1/2 day plowing—Franklin (an uncle), ox team and plow (all three, mind you), 37 1/2c!

July 3, 1848, S. Treadwell, Cr.—To one "cradle scythe," \$1.50; to making one "man's coat," \$2; to cradling wheat one day, 62 1/2c. Surely those old timers must have been experts at many trades, for here's a case of merchant, tailor and farmer all in one.

Life also had its tragedies then as now. For example: Jan. 12, 1848, Robert Barrington, Dr.—To one coffin, \$1. In those days the modern casket for burial was unknown and receptacles for the dead were known as coffins. Of these grandfather fashioned many, they being chiefly made from hand-planed and finished black walnut timber. In many cases they were made of basswood, whitewood, etc., those made from basswood or other cheaper woods being furnished at 50c to 75c each, depending upon size, etc. Imagine buying a receptacle for the dead today for 50c to \$1. These are actual facts and "truth is stranger than fiction."

MAPLE SYRUP AND SUGAR.

BY E. J. CRANE.

"Buckwheat-cakes time" has come. That means maple-syrup time, too, to many of us, for where is there a combination that excels buckwheat cakes and maple syrup? Some call February and March maple-syrup season, and their reason is good, but, whenever buckwheat cakes are in season that is maple-syrup season to me. Americans are more fortunate than the folks across the ocean. Few foreigners have ever tasted maple syrup or sugar, or have even seen it. This is because their production is purely an American industry, Canada being the only country outside of the United States in which maple products are made.

The earliest explorers in the United States found the Indians tapping maple trees and making maple syrup and sugar. The white people who came over soon learned to make these maple products. They improved on the crude methods of the Indians but, beyond the tapping and boiling methods, the general process has remained the same. For many years the early settlers of the northern states used no other sugar than maple. In those days many trees were killed by the crude method of tapping, and the product obtained with the iron kettle, birch-bark tank, and wooden spiles was dark and ill tasting. Maple syrup and sugar were not consid-

ered delicacies in those days as they are now.

There are many imitations and flavored products on the market. If all the maple trees in the country were to be cut down there would still be plenty of "maple syrup," so called, obtainable. The pure food law is pretty strict on this, however.

Sugar maple and a variety of it, the black maple, hold first place as producers. The red maple, the silver maple and the Oregon maple are of less importance, with box elder least productive of all. Perhaps best of all is the black maple. The red maple has the widest range. The Oregon maple is the only western producer. As a tree for the production of sugar in paying quantities the range is limited to New England, New York, Pennsylvania, the southern Appalachians, the lake states and Canada near the lakes.

In the United States there is produced about 4,000,000 gallons of maple syrup and about 14,000,000 pounds of sugar every year. The leading states in syrup production are New York, Michigan, Ohio, Vermont, Pennsylvania, Indiana, Wisconsin and New Hampshire, while Vermont, New York, Pennsylvania, New Hampshire, Michigan, Maryland, Ohio, Massachusetts and West Virginia produce the most sugar.

Practically the only difference between maple sugar and ordinary sugar such as we use every day, is the flavor which the maple sugar gets from the tree. There are sugars, such as fruit sugar and milk sugar, that differ considerably from ordinary sugar, being different in composition and properties, but maple sugar is the same as common sugar, plus a little glucose, and plus that fine maple flavor.

THE WANDERLUST CLUB.

BY M. B. R.

Boys and birds are very good sprinters, And some go far to spend their winters; But a bunch of words once packed their bags

And sallied forth on their nifty legs; They called their club the Wanderlust As from their feet they kicked the dust And crossed o'er Mason and Dixon's line, Toward the land of pindars and pine, Cotton and cooters and turpentine.

Once there, they met, most every day, Native chappies along the way;

"Guess" and "reckon" were friends at once, Tho' each thought t'other a lingual dunce;

"A bite" and "a snack" sat down together And ate their lunch in the sunny weather;

Then "bucket" and "pail" gave each a drink As they came up from the fountain's brink;

Bright "afternoon" and "evening" met A long, long time ere the sun had set;

Said "afternoon," with a quizzical smile, As they trotted along the glowing dial,

"You're out of date, in my estimation, And speak in terms of the dawning creation;"

"Slam around" and "clear around" All corners turned with whoop and bound;

"Pied" and "spotted" spoke of the cattle, And both stood firm in the wordy battle;

"Johnny-cake" and corn-meal "pone" Went to sup and ate their own,

But "real good" and "mighty nice" Enjoyed together yams and rice;

"A good piece off" and a "right smart ways" Agreed on a house they say through the haze;

Short man "how d'y" and long "how-de-do" Touched their hats with manners true;

"A heap" and "a lot" meant the very same thing, So each stopped laughing and took back his fling;

"Block" and "square" went over to town And had it out on the lexicon;

The jolly good fellows then went to the fair And spoke of the quilts in the same way there;

"Done got through" and "finished now" Chaffed each other but had no row;

"Help" met "holp" and ventured faintly, "You seem old-timy and speak so quaintly;"

"Your load is heavy," said "carry" to "tote,"

"I'll shoulder your possum, your pigs, and your goat,"

"Cooter" and "turtle," with shells on their backs, Crawled o'er the mud and made queer tracks;

"Certainly" and "It sure is" Declared saloons immoral viz;

"Jes' to'able" and "not very well" Complained of heads and downward fell;

"Misery" yelled out to "pain" "My rheumatiz has come again;"

But "I'm all in" and "powerful weak" So prostrate were they couldn't speak;

Then bland "come back," and brisk "call again,"

Shook hands at the door as the clock struck ten;

"Overland walking" said bye to "hike," And the club set out on the homeward pike.

Now boys and girls, how many can spot The words that are Yankee and those that are not?

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This Fine Hardwood Rocker and This \$5 List of Grocery Products

Just to get you acquainted with the high quality of Crofts & Reed Grocery Products and especially our Money Saving Factory-to-Home Plan of buying, we will send you the entire list of Products below and this Beautiful Hardwood Rocker both for only \$5. We don't ask you to send the money in advance. Simply fill out and mail the coupon. We will ship both Rocker and Products—then you are to use the goods just as if paid for. Use the Rocker—have your friends try it. Test the Products for quality, quantity and freshness. Take plenty of time—you have full 30 days to find out if this is a bargain or not. You haven't a cent invested—you take no risk whatever. We take goods back—pay all freight charges—make no charge for goods used in the test.

Both
for \$5
Only

NO MONEY DOWN

Here are the Products You Get For \$5 With Chair Included

Retail Price	Retail Price
1 pkg. B Oats, 1 1/2 lbs. 15	1 pkg. Macaroni, 1 lb. 15
1 Bottle Vanilla Ex., 2 oz. 25	1 pkg. Corn Starch, 1 lb. 10
1 Can Cream Tar. B.Pdr. 25	1 pkg. Salt, 5 lbs. 10
2 Cans Pork and Beans, large size 30	1 pkg. Bak. Soda, 1 lb. 10
1 pkg. Unsweetened Chocolate, 1/2 lb. 35	1 pkg. Black Pepper, Ground, 1/2 lb. 10
1 lb. Ceylon Tea 60	3 bars Kero. L'dy Soap. 15
1 pkg. Rice, 2 lbs. 25	2 pkgs. Washing Powder 20
1 pkg. Coconut, 1/2 lb. 20	2 pkgs. Scouring Powder 20
1 Jar Peanut Btr., 1/2 lb. 20	1 pkg. Gloss Starch, 3 lbs. 25
1 Jar Orange Marmalade, 1/2 lb. 20	1 Bx Fragrant Bouquet Toilet Soap (8 bars) 25
1 pkg. Carmel Pudding. 15	10 bns. Fam. L'dy Soap. 50
	\$5.00



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The rocker is much nicer than I expected. My neighbors say the chair alone would cost me \$5 at stores. The products also are very good indeed.
Mrs. E. J. Bailey,
Alton, Ill.

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Write your name and address plainly in the coupon below—give two references, your pastor and banker, or a business man—mail it to us. We will ship the \$5.00 worth of Products and Rocker immediately. When you get them, if for any reason they are not satisfactory after you have tested them 30 days or before the 30 days are up, you can return them at our expense. You are not obliged to keep them. We leave everything to you.

Description of Rocker

This rocker is made of selected hardwood, is screw fastened in the most approved manner, which any furniture man will tell you is the most satisfactory way of putting a chair of this kind together. Back is artistically shaped, has seven turned spindles joining the top and bottom panel. Front and back posts also are turned. Arms are shaped, strongly fastened to back and seat. The finish of this rocker is equal to that of a chair selling for \$5.00 to \$10.00. It is finished in the very best American Quartered Oak and the polish is superb. You would pay as much or more at a furniture store as our price of \$5.00 for a rocker as good as this one, and you would get no products with it. It is 38 inches high, 24 inches wide and 15 inches from the floor.



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is a beautifully shaped and finished portable table lamp that makes and burns its own gas. Furnishes bright and cheerful, yet mellow and eye-resting light at only 1-10 the cost of kerosene lighting. Will give you 300 candle power (the equal of 20 oil lamps) at only 1-8c. per hour.

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If your shoes have been treated with Dri-Foot you can let snow melt on them. They are moisture-proof.

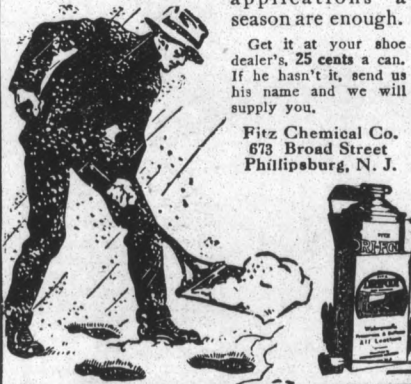
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Woman and Her Needs At Home and Elsewhere

Add This to the Course of Study.

AMERICAN schools are just now in a state of transition, with magazines and famous educators lambasting the old and praising the new. Many things which we thought highly necessary for the educated person even ten years ago, are now being consigned to limbo, and the course of study being made over to fit our young hopefuls for practical everyday living. Instead of stuffing the juvenile heads with a mass of unrelated facts, which they promptly forget the day after examination, our boys and girls are being taught to do things, to experiment, and to apply the subjects in their books to everyday matters.

It's a big step in the right direction. And while they are about it I, for one, hope they will go a step farther and teach the girls the one great thing they should know, and are never taught, how to take care of a baby. If the race is to go on, the great work of our daughters is to be mothering. And isn't it a lamentable thing that through our false modesty we leave the girls entirely untaught on the one thing they should know, and turn them loose to take up their life work almost as ignorant of what they should do as the baby itself?

When I consider my own hopeless ignorance when my first baby arrived I marvel to think that the poor thing survived. In fact, he scarcely did, thanks to my inexperience and the ignorance of the family doctor, who knew no more about how a baby should be fed than I did myself. And in passing I can not forego to pay my respects to the large class of doctors who know absolutely nothing about infantile feeding, and yet when they get a case of mal-nutrition are not manly enough to confess their ignorance and advise the parents to take the baby to someone who does know. Rather than admit that they do not know everything, many doctors experiment with this, that and the other food until the poor little victim is either killed outright or has its stomach ruined for life.

Be that as it may, there are hundreds of mothers like myself who know how to extract cube root, gabble a little in German or French, drum a little on the piano, write a club paper on art, make chocolate fudge and embroider shirt-

waists, but who do not have the faintest idea how to wash, dress and feed a baby. And whose fault is it? Certainly not the fault of the girl, but of those who have been entrusted with her education and have failed to train her in this one all-important point.

There is altogether too much sham modesty in life. What is more natural than marrying and having children? It is the great law of nature. Why, then, should girls stammer and blush and get hysterical when it is mentioned to them that some day they may be the mother of children? Why, indeed, but because their mothers and teachers take the attitude that bringing children into the world is something to be ashamed of. Can we expect anything but race suicide from girls who have been so carefully trained that all mention of motherhood is carefully excluded from their curriculum?

It seems, however, that it is too much to hope that a course in baby tending may be included in the education of our own daughters, but perhaps our granddaughters may be so blessed. A well-known child specialist has written a book which he wants introduced in the schools, one or two chapters of which deal with the feeding and care of babies. Out of a large number of educators to whom he submitted the proof sheets many were quite positive that these chapters must be cut out before the book could be used in public schools. Some of the teachers declared that they could not discuss the subject of digestion without causing a commotion among some of their super-refined girl pupils. To what a pass has our ignorance carried us if this be true.

Why not be sane about the matter and give our girls the knowledge they should have? If mothers would only tell the truth to their children about the great facts of nature from the time they begin to ask questions the whole problem would be solved. In the first days they would accept unquestioningly and innocently everything they were told. Instead we put them off with evasions or downright lies, until morbid curiosity lays claim to them and they will not treat seriously the things we try to teach them. Let us be sensible and honest and give the girls a chance.

DEBORAH.

FORCING BULBS FOR EASTER.

BY CHARLOTTE BIRD.

During the Easter season there is nothing about the house much more delightful than a plentiful supply of bulbs in full rich bloom. And the delicate perfume of these flowers is so pervasive as almost to fill the house.

If the housewife grows her own bulbs, the cost is very reasonable. In the fall she can secure an unlimited supply of the best bulbs for a comparatively small price. But she must use some time and care and judgment if she is to bring her aim to fruition.

The woman who has planned early enough for her supply of Easter blooms has procured the bulbs, let us say, in October and has planted them in pots. With the earth she has incorporated all the necessary fertilization so that in the spring no more will be needed. If she has a dry, warm cellar, she has set her potted bulbs away in it to await the proper moment to be brought to the light. If she has no such cellar, she has probably plunged the pots into a garden bed to await the time.

In either case some weeks before Easter the potted bulbs should be brought to the light. For some time now the bulbs have been developing their root growth and from now on all their growth will be diverted to the development of their leaves and bloom. For such bulbs as the tulip, daffodil and narcissus, four weeks should be allowed for them to come into bloom. For the hyacinth and allium allow three weeks. For the crocus one week is sufficient. This year about March

12 will be the right time to bring the first bulbs to the light.

If the potted bulbs have been plunged into a flower bed and allowed to remain outside, they must be dug out very carefully. In fact, in this climate, where the ground freezes so hard, this method of wintering bulbs can hardly be considered the most convenient. Freezing does the bulbs no harm, even if they are frozen in a hard ball of earth. Place where they will be only moderately warm and let them remain till they have thawed out. Clean the pots carefully and bring to the light. Treat the same as when the bulbs have come from the cellar.

For the earliest blooming, bring as many pots to the light as are desired. Soak the pots thoroughly and place in a north window or somewhere where they will not get the direct light of the sun. From now on the bulbs are to be watered freely. They should never be allowed to remain in a higher temperature than 65 degrees, and 60 is probably better. This is about the temperature of the outside cool, moist air of early spring which it is desirable for one to try to imitate. Successfully carried out, this method will secure the finest blooms at the time desired.

To save space the bulbs may be started in boxes and, as desired, later shifted into pots. Several bulbs may be planted in one pot. A six-inch pot will accommodate six good-sized bulbs while a larger number of small bulbs may go into the same space. This not only saves space but it insures a finer mass of bloom. For low growing bulbs, pans are better than pots, or better still is a shallow pot. But

for the tall stalks the usual pots are preferable.

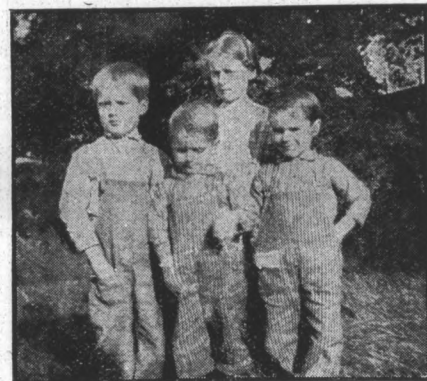
For the development of the Chinese lily allow two weeks, if the bulb is well ripened; otherwise, four weeks will be necessary. The culture of the Chinese lily is different and yet of the simplest character. The bulbs may be planted in pots the same as other bulbs. But quite as good a way is merely to place in a dish, prop up with stones and then keep water well up around the bottom of the bulbs where the root fibers are.

When the stalks of the potted bulbs are about half grown and before the spikes begin to bend under their own weight, it is better to tie them to a support. After they have once become bent, they cannot be straightened again without injury to them. Green sticks for this purpose can be had from florists or seedsmen and these look so much better than the uncolored ones. Some bulbs are so tender and delicate that they cannot withstand changes of temperature. It is better for the amateur to buy the bulbs in bloom of the florists than to try to raise them. But the tulip, crocus, allium, freesia, hyacinth, narcissus and Chinese lily can be grown just as successfully in the ordinary home as in the best conducted greenhouses. And by many who take the trouble this is being done every year. If the practice should become general, it would add much to the cheer of any home.

When the bulbs have finished blooming, if they are tender like the freesia or Chinese lily, they should be thrown away as worthless. But, if they are hardy, they should be placed in a garden bed where they may grow. In the course of a year or two they will recover sufficiently to bloom again.

THE BEST SORT OF FARM PRODUCTS.

What Michigan farms can do in the way of producing sturdy youngsters is shown in the healthy faces of the four children in the accompanying cut. They

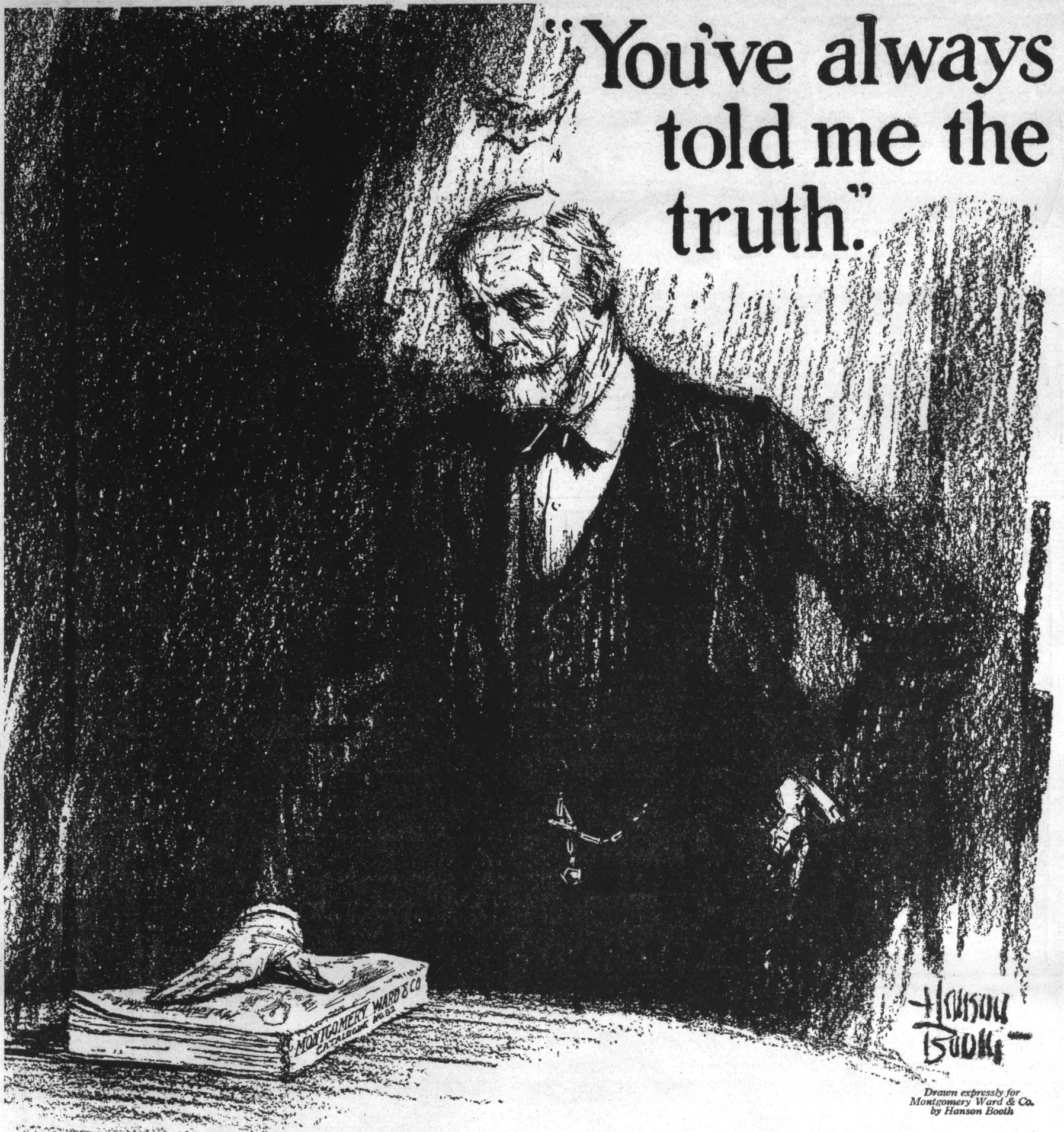


are Irma, John, Wilson and Ned, children of Mr. and Mrs. Grant McCormick, of Ingham county.

"The four families who were the great-grandparents of these little folks were all of the sturdy pioneer stock who helped to subdue the wilds of Michigan and build up her schools and churches. So far as the records go there has never been in either family a criminal, an idiot, a born cripple, or an insane person, and so far as the present generation knows, no divorces."

With such an ancestry, what can be impossible to these children? It is of such as these that Michigan should boast, rather than of her output of automobiles, potatoes or sugar beets.

A convenient rack for holding small covers and pie dishes may be made in this way: Take two strips of wood one and one-half inches wide and 14 inches long for ends; one strip one and one-half inches wide and three feet long, or as long as you wish, for bottom; one strip one inch wide and one-half inch thick and as long as the bottom. Nail bottom to ends as for a box, and fasten the inch-wide strip across front, four inches from the bottom. Hang on wall near the range, and put several screw hooks in front of bottom for holders, stove irons, etc.—Mrs. A. D. P.



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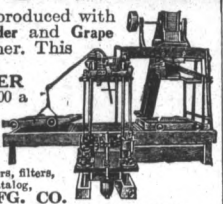
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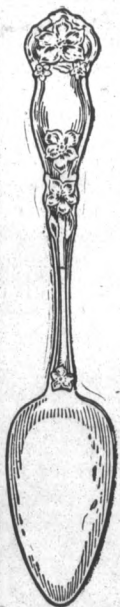
Twelve "Sunkist" wrappers and 12c bring you the beautiful "Sunkist" orange spoon pictured in this advertisement. There are 26 other splendid premiums you can get for "Sunkist" orange and lemon wrappers. "Red Ball" wrappers also accepted. Write for complete list of premiums.

40-Page Recipe Book FREE

Tells how you can serve these luscious, tasty fruits in 110 different ways. We mail it free.

Be sure to ask your dealer for genuine "Sunkist" oranges. Enjoy fresh fruit now, when you'll relish it most.

California Fruit Growers Exchange, 145 N. Clark St., Chicago



(212)

THE FAMILY MENDING.

BY ELLA E. ROCKWOOD.

One of the ear-marks of the good housekeeper is her mending. This task is apt to be neglected in the pressure of other duties and an accumulation of garments which need repairs is quite disheartening. In no part of the domestic machinery is system more desirable. My advice to the young wife just getting her household in running order would be to keep up the mending and avoid the discouraging pile that certainly will be a bugbear if allowed to go unattended each week.

My regard for the domestic arts department of our schools and colleges has been high ever since I became acquainted with it. Those beautifully set patches and artistic darns took a firm hold at first glance. "Isn't that more sensible?" I asked, "than to neglect such an important part of a young woman's education, and try to atone for it by stuffing her head with French and German, forgotten as soon as she leaves the school room?"

That one must darn and mend with brains is very true. It does not always pay to waste one's time setting diminutive stitches in cheap hosiery. The busy housewife whose means will permit should buy new, or take less pains with the work which may be serviceably repaired at the expense of less energy. The cheap cotton socks may continue their usefulness in other than the original form, but a really good garment demands careful attention.

In case of a tear in silk or worsted goods threads drawn from the material itself are far superior to anything else for mending it. On plaid goods the repairing will scarcely be noticed if the worn part is removed entirely, cutting the edges by the thread, and matching the pattern exactly. Finish with a thorough pressing. Gum tissue is sometimes useful but is inclined to leave a thicker appearance, and stiffens some goods unduly. For heavy material it is all right.

A beautiful lace collar was thrown aside as ruined until shown to an expert mender who took it in hand. By placing underneath some fine net, darning the torn parts to this foundation, it was restored to its pristine usefulness, much to the gratification of its owner. Figured goods do not offer the obstacles that plain colors do in repair work. The pattern hides the outline and renders it less conspicuous. Ragged edges may sometimes be drawn together over a foundation piece of the same goods by carefully matching the figure and skilfully darning with threads of the material, better than by cutting around the hole.

After the ironing each week, even in a family where there are children, it is not an insurmountable task to mend the articles requiring such care before putting them away. And it is such a comfort to all concerned to find this done when they are taken out of their places to be worn. Like everything else, it becomes a habit, either to be careful or careless in this respect, and we all know how easy it is to follow along that line.

"What," someone may exclaim, "habit in darning?" Exactly that. But like other habits it must be persisted in, otherwise it is mighty easy to form an opposite one.

Cleaning clothes goes hand in hand with mending. In these days of cleaning establishments much of this very properly may go out of the house to be done, thus saving the time for other things. Cleaning and pressing has become an art in these days. But there are always spots to be removed which it is needless to take to a professional. Popular as gasoline is, it is not always satisfactory as a grease remover because of its liability to leave a ring or streak around the original spot. If salt is sprinkled over the place after wetting it with the fluid, rubbing well with a clean cloth or soft brush, no disfiguring ring will remain. A piece of clean white blotting paper should be placed under the garment for the purpose of absorption. Salt and gasoline must be applied repeatedly.

RECIPES.

Corn Batter Bread.

Mix one teaspoonful of soda in one pint of sour cream, a beaten egg, a little salt, four tablespoonfuls of flour, and enough corn meal to make a soft batter. Lastly, add one tablespoonful of sugar. Bake quickly in deep tins.

Potato and Onion Soup.

An inexpensive and satisfying adjunct to a winter's meal, one which almost everyone likes, is potato soup. For each

person allow one onion and one good-sized potato. Pare and slice these into a stew kettle with plenty of water and cook until soft. Remove and mash the vegetables fine or put through a colander. Return them to the water in which they were boiled, add milk or cream and season with pepper, salt and butter to taste. Any cold vegetables that may be on hand can be chopped and added, carrots, a few pieces of turnip or a little cold cabbage. Serve hot with crisp crackers or bread, buttered, cut into strips and browned in the oven. A few stalks of celery cooked with the potatoes and onions makes a pleasing variety and adds to the flavor of the soup.

Two "Egless" Cakes.

Apple Sauce Cake.—One cup granulated sugar, half cup shortening, two cups flour, one teaspoon each of cinnamon, cloves, soda, one cup apple sauce and a pinch of salt. This makes a moist cake, and with the addition of raisins, citron, etc., makes a fine fruit cake.

White Cake.—One cup of sugar, one rounding cupful flour, pinch of salt, two rounding teaspoonfuls of baking powder sifted together. Add a small tablespoonful of lard and milk to stir to a batter a trifle thicker than when eggs are used. Bake in layers or add half cup coconut and bake in loaf.—Anah.

Fruit Drop-Cakes.

Two eggs, well beaten, half cup butter and one cup granulated sugar creamed together, half cup sweet milk, two teaspoons baking powder, two and a half cups flour, one cup raisins.—E. L. L.

Rice Pudding.

An easily made rice pudding calls for two cupfuls cooked rice, one cupful sweet milk, one beaten egg, one-half cupful raisins, one-half cupful butternut meats and one teaspoonful lemon extract. Bake in a moderate oven until it sets.

SHORT CUTS TO HOUSEKEEPING.

To prevent the smoking of a lamp soak the wick in strong vinegar and dry it before using. It will then burn with a sweet and pleasant odor.—M. A. P.

This is a correct amount of seasoning for ten pounds of sausage. We have used it for years: Sage, five tablespoons, ground; salt, four tablespoons; pepper, two tablespoons. I thank you for past favors and enjoy your valuable paper.—P. A. S.

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Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of ten cents.



No. 8111—Boys' blouse, 6 to 12 years. With separate collar.

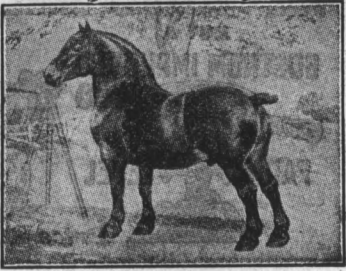
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Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

Associational Motto:

"The skillful hand with cultured mind is the farmer's most valuable asset."

Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

OUR BOYS' AND GIRLS' CLUBS.

The Michigan Farmer of January 31 gave an outline of the work proposed for Boys' and Girls Junior Agricultural Clubs in Michigan as formulated by Professor French, of M. A. C. If you have studied the work of these Clubs which are to be conducted through the educational departments conducted by Prof. French and Dr. Mumford, you have noted that they have expert instructors who will give the boys and girls practical, illustrated instructions in their work, and that most of this contemplated work will be done with boys and girls of the age of 16 years and over.

As noted in the last issue the State Association of Farmers' Clubs has decided to promote boy and girl Club work in Michigan, and the proposed plan of work was given in detail. But as the organization has no workers available to send over the state, the projects outlined for both boys and girls have been limited to such things as they can do for themselves with the aid of the local organization. Also lines of work were chosen, the products of which could be taken to Lansing for the purpose of making an exhibit to be held in connection with the annual meeting of the State Association of Farmers' Clubs. The departments headed by Dr. Mumford and Prof. French were both consulted, and have approved the rules published in this column last week and have made valuable suggestions with regard to carrying them out.

At the next meeting of the State Association of Farmers' Clubs we hope to have a conference of those who have handled the contests in the various Clubs and plan more extensive work for next year. The Ingham County Farmers' Club has, for two years, held contests under practically the same rules outlined last week for the state work, which contests have been so successful that the boys and girls are anxiously awaiting the visit of the school commissioner, who will give them the plans for next year.

Ingham Co. R. J. ROBB.

YEARLY PROGRAMS.

Hadley and Elba Farmers' Club.

The first of the yearly programs for 1914 to come to the editor's desk is that of the Hadley and Elba Farmers' Club, of Lapeer county. This is an attractive little booklet with a neat colored cover, on which appears the year for which the program is to serve, the name of the Club and the date of its organization, which was 1899. The title page contains a list of the officers and a schedule of the meetings for the current year, which from October to April, inclusive, are all-day meetings and from May to September afternoon meetings. The next page is devoted to a presentation of the order of business followed at the meetings, and the succeeding pages are devoted to program announcements for the monthly meetings, two to each page. The farms of the members are named and the farm name appears with that of the host on each program. Variety is secured in routine work by providing a different and interesting method of answering to roll call at each meeting. The questions for discussion are announced for each meeting, two questions being provided on the programs for most of the all-day meetings and one for the half-day meetings. The published program is limited to the question and in some cases literary and musical numbers. Picnic meetings are held in July and August, the latter being a union picnic with Lapeer county farmers' picnic. A Club fair is held in October, the last page of the program containing the names of the members on the fair committee. The announcement is made that the question box is always open, thus insuring that current topics will not be neglected. Altogether this yearly program is admirably adapted to the needs of the organization and its form may be taken to represent what this Club has found by experience to be desirable along this line.

Grange.

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

INGHAM POMONA OPENS YEAR WITH GOOD MEETING.

Granting that the initial meeting of Ingham Pomona for the year 1914 is a criterion for subsequent meetings, the residents of the aforesaid county have a number of rare educational and social treats in store for them that may be had without money and without price. The new corps of officers were installed by Miss Chittenden, of Lansing, who was very ably assisted by the young people's degree staff of Telephone Grange, the work throughout being done in a very efficient manner.

The new currency law came in for its share of discussion. Rousing temperance addresses were made by B. C. Van Hyde, of Springfield, Ohio, and Rev. F. W. Corbett, of Lansing, and the Grange members resolved to do their utmost to place Ingham county in the dry column at the spring election. Dr. Ethel Cook Carpenter, of Lansing, gave a very practical paper on the care of young children.

One of the finest features yet presented under the auspices of Pomona Grange in this county was the illustrated lecture by Prof. Earle E. Dow, professor of European history at Ann Arbor. This was given in the evening to a packed house. The topic was, "Thousand Years of Venice," beautifully elucidated by many lantern slides and the people of Leslie, as well as Pomona Grange, are to be congratulated on having had the privilege of hearing this lecture.

Telephone Grange provided a fine entertainment, consisting of readings, vocal and instrumental music, not omitting a sumptuous dinner and luncheon. A class of 17 were instructed in the fifth degree—ample testimony that Telephone Grange is in a very thriving condition.—E. J. Creyts, Lect. Pro Tem.

CLOVERLAND PATRONS ORGANIZE FOR CO-OPERATIVE EFFORT.

Delegates from a large proportion of the Granges of the upper peninsula recently met at Escanaba for the purpose of organizing a Cloverland Grange. This organization is not to supplant the State Grange, but is intended to draw the patrons of upper Michigan closer together to give them the opportunity to discuss problems that are peculiar to Cloverland. Eleven of the 15 counties were represented and the delegates drew up an informal constitution that will be altered and made permanent at the first annual meeting next November. The following officers were elected: President, Mr. Byers, of Iron Mountain; secretary, R. N. Seward, of Stephenson; treasurer, F. L. Baldwin, of Escanaba. These officials, together with one member from each county, will form the executive committee.

Berrien Pomona met with Berrien Center Grange on Jan. 20. Fully 150 patrons were in attendance, nearly every subordinate in the county being represented. Three candidates were given the fifth degree and the evening session was given over to discussion of the advisability of procuring an agricultural expert for the county. The new Pomona officers, installed at this meeting, are: Master, Dean Clark; overseer, O. O. Sutherland; steward, Albert Beaton; lecturer, Mrs. C. Spaulding; assistant steward, Mrs. Belle Cassidy; secretary, E. W. Simpson; treasurer, Erastus Murphy; chaplain, Mrs. Alice Clark; gate keeper, S. M. Clawson; Ceres, Mrs. J. Gosling; Flora, Mrs. S. L. Snively; Pomona, Mrs. Kate Sutherland.

Charlevoix Pomona met with Wilson Grange on February 12 with a good attendance, there being about ten Granges represented. As the crowd was late, on account of the weather, practically nothing was done before dinner. In the afternoon all of the business of the meeting was done, as the evening session was to be open to the public. John Knudsen gave a short but interesting report of the State Grange held in Flint. Mrs. E. H. Clark gave a very interesting paper entitled "The Grange as a Social Center." One candidate was obligated and instructed in the mysteries of the fifth degree, after which a committee, consisting of E. H. Clark, Wm. Mears, and E. E. Stroud, was appointed to arrange for three one-day Grange rallies to be held some time in the spring. It is expected that State Speaker Ketcham will give an address on Grange work at each of these meetings. In the evening the main part of the program was taken over by the teachers from the Boyne City schools. Miss Anne Callow, domestic science teacher, gave a very instructive paper on "Handwork for Girls in the Rural Schools," illustrated by specimens of work of the different grades in the Boyne City schools. Miss Carr, manual training teacher, gave a paper on "Handwork for Boys in Rural Schools," and Mr. Wheeler a talk on "What has been accomplished in one-half year of study in the agriculture course in Boyne City High School." The next meeting of Charlevoix Pomona will be held on Thursday, April 9, with Ironton Grange.—L. D. Wilson, Sec.

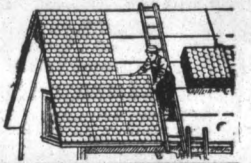
COMING EVENTS.

Pomona Meetings.
Wayne Co., with Plymouth Grange, Saturday, March 7.
Ingham Co., with Holt Grange, Saturday, Feb. 21. Patriotic meeting.

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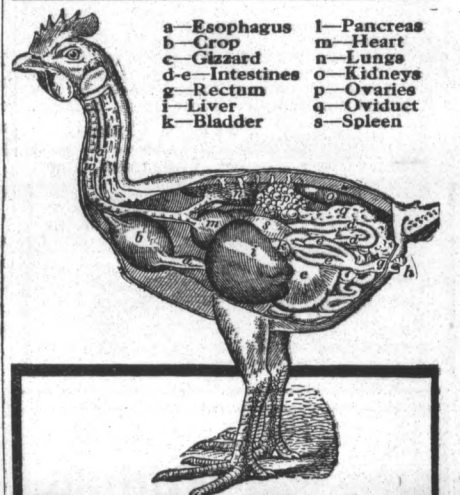
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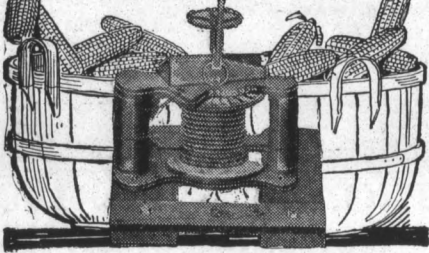
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Farm Commerce.

More Money for Egg Crop--No. 2.

THE net returns from the egg business can be increased by handling the eggs intelligently before they are marketed. A careful study by the United States Department of Agriculture has revealed the astounding fact that 17 per cent of the eggs put upon the market is a total loss. That is the value of two eggs out of every dozen sold by the producer must be charged up with the other costs of distribution.

What does this mean? It means an annual loss in Michigan of over 6,000,000 dozen eggs, not to the middlemen, but to the producer. Middlemen allow for the depreciation of stock when they buy. They do this by putting quotations low enough to cover the shrinkage. If producers can so handle the eggs from their fowls that this shrinkage is wholly or partly eliminated their net returns will probably be doubled, if the eggs are sold on a competitive market.

Causes of Loss.

What causes, then, contribute to this great loss and are the causes such that the producer has control over them?

Decayed eggs are a common cause of loss. Of the whole number of eggs marketed the loss from such eggs is estimated to be two and one-half per cent. Now too much moisture is the chief cause of eggs decomposing, and excessive moisture gets to the eggs by having the nests upon the ground, or filled with wet chaff, by storing the eggs in a damp cellar, or by using moist fillers in packing for holding or marketing.

Another loss is due to shrunken eggs. This cause is claimed to impair the value of the eggs of the country fully five per cent, and is due to the evaporation of the moisture from inside of the shells. Holding the eggs a long period, exposing them to draughts of warm air and allowing the sun to shine upon them are causes of shrinkage. By delivering them frequently and keeping in a cool, dry place, much of the waste from this source will be eliminated. It should be stated that a large portion of this loss occurs while the eggs are in the hands of dealers and consequently should not be charged up to the farmer; however, where the farmer sells the eggs to consumers or to retailers then, so far as shrinkage is concerned, he is in a position to deliver the eggs in nearly as good condition as they were when laid.

Loss in Fertile Eggs.

A third loss results from the growth of the chick in fertile eggs. The loss to the egg industry of the country from this one cause is estimated at \$15,000,000 annually. Heat and moisture bring about constant changes within fertile eggs. Inasmuch as unfertile eggs are superior to fertile eggs for preserving, storing and shipping, producers should remove roosters from the hens as soon as the hatching season is over. Nearly all of the successful growers who answered the questions run in these columns in the December 20 issue, practiced separating the roosters from the hens after the hatching season is done. Hens usually lay more eggs and keep in better health when the males are kept from them. But where roosters are with the hens chick development may be retarded by removing all broody hens from the nests at once, gathering the eggs often and storing them as suggested in the preceding paragraph.

The Bad Effect of Dirty Eggs.

The next source of loss comes from dirty eggs. Dealers usually count out about five eggs from every hundred because of their being stained, muddy, smeared or covered with dirt. In a former article we suggested that the producer of eggs see that the poultry houses are frequently cleaned and particularly the nests. One nest should be provided for every four hens, and the eggs should be removed from them often so that they be kept free of dirt from the feet of the hens. Eggs marketed in bran are usually classed as dirty because the bran frequently sticks to the shell and stains it. The practice of washing eggs intended for general commercial purposes, is to be discouraged. This is not only the testimony of those answering our questions

but it is the verdict of all who have been observant of the effects of washing. Eggs so treated absorb odors readily and soon become stale. The better practice is to use these eggs at home before they have time to deteriorate.

If chickens are allowed to eat decaying meat, strong-flavored vegetables, drink barnyard water, or if the eggs are stored where the porous shell will absorb fruit, vegetable, or fish odors or where the atmosphere is musty, then the quality will be lowered. Damage of this nature can usually be avoided by giving special care in feeding clean foods.

Care in Handling.

Finally much can be saved by carefully handling the eggs at all times. Fully eight per cent of the eggs produced are broken before they get to the consumer. A considerable portion of this loss is attributable to soft shells and soft shells are usually due to a failure to supply shell-making material. Then eggs should not be piled in crocks, or pails, but deposited at once in the case in which they are to be taken to market. Some jar-absorbing material, such as excelsior, should be placed between the fillers and the sides and bottom of the crate. Eggs that are over-sized do not ship well in the standard size filler as they extend beyond the space allotted and receive an excess of pressure that almost invariably results in breakage.

We are now led to consider the practice of grading eggs as to size. The eggs should be classified into small, medium and large sizes. Medium sized eggs should weight from 25 to 28 ounces per dozen. Lots averaging above this are likely to include large specimens that will not ship well, and will therefore be classified as seconds; while those running below 25 ounces are too small. Both the abnormally large eggs and those going in the small class should be used at home and only the medium sized marketed, especially where one is supplying a discriminating trade.

Sorting for Color.

To make the eggs show up to still better advantage they should also be graded according to color. While there is nothing added to the value of the eggs by classifying them into browns, whites and grays, the appearance is so much enhanced by the classification that fancy prices are more easily secured. As eggs are produced upon the ordinary farm, the number is generally too small to secure a full crate of one color before the eggs should be marketed, hence it is good policy to have all the eggs in one layer of the same color, or if they are sold out to private parties in small quantities then each consignment should be of one color. The three colors mentioned above—white, gray and brown—are the names of the grades usually made, although there are shades ranging from a dead white to a reddish chocolate. A little care will aid the producer in arranging the eggs in the crate so they will appeal to the buyer because of the uniformity of color.

POTATO QUARANTINE REGULATIONS MODIFIED.

The regulations issued by the Department of Agriculture governing the importation of potatoes into the United States made it incumbent on any country not under quarantine, desiring to offer potatoes for export to the United States first to declare an effective quarantine prohibiting the entry into such country of potatoes from any country or district quarantined by the United States. This meant for instance that Bermuda or any other country not covered by quarantine would first have to take extensive quarantine action against all foreign countries under quarantine by the United States as to potato importations. The regulations have now been changed so that foreign countries not under quarantine are given the alternative of either forbidding by law the exportation to the United States of all potatoes not home-grown or quarantining against all countries now covered by United States quarantine as originally provided.

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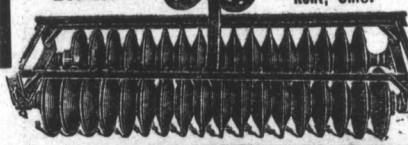
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is packed with pictures, methods of advanced
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Crop and Market Notes.

Michigan.

Washtenaw Co.—Stock of all kinds is doing fine, especially the milk cows. The mild weather with an absence of cold, driving storms has been favorable for milk production. Hay is selling freely at \$12 per ton in the barn. Wheat and rye are in good condition. The corn and oats are marketed mostly through the cow. A considerable amount of beans are raised here, and are being marketed at \$1.70@1.80 per bu. The roads have been most excellent the entire winter. Farmers of this section are finding dairying very profitable.

Delta Co.—We have 14 inches of snow, making good sleighing, and the roads are fine. Wheat, rye and seeding are in good shape. Farmers have sold about all their grain, but there are many potatoes still in farmers' hands. There are not many cattle raised here, and these are in good condition. Hens are laying now, and eggs are selling at 35c; dairy butter 32c; oats 55c; wheat 80@90c; beans \$1.50; hay \$13.50; potatoes 60c per bushel.

Shiawassee Co.—We are having fine winter weather with good sleighing. Not much being sold except hogs and lambs. Most of the beans were sold last fall, the remainder being held for better prices. Wheat and rye are looking fine, with about six inches of snow covering it. There is quite a lot of surplus hay, but there is no demand for it. Beans are quoted at \$1.70; wheat 92c; oats 38c; potatoes 50c; hay \$11.50; hogs \$8; eggs 28c; hens are laying quite well. There has been no ice cut here so far.

Berrien Co.—It has been hard on the wheat crop, and many report that the fly is in very bad. A lot of fall plowing was done here; hauling wood and logs to the mill. Butter and eggs are down, both being quoted at 29c. Farm help is scarce and many do not expect to hire help, as wages are so high. Many sales have been held, and there are more to come. Corn has been selling at 70c at sales, market price 55c. Many fat hogs are going to market at 8c. Stock never looked better.

Lapeer Co.—We note that wheat and clover are well protected. We are marketing beans, hay and sometimes a load of potatoes. The average number of cattle per farm is about 11 head. There are but few sheep, but lots of hogs, and only enough horses to do the farm work. There is not much wood left in Lapeer county, we rely mostly on coal, both hard and soft. Roads are quite good, but ought to be better, as our taxes are quite excessive on that account. Eggs are scarce.

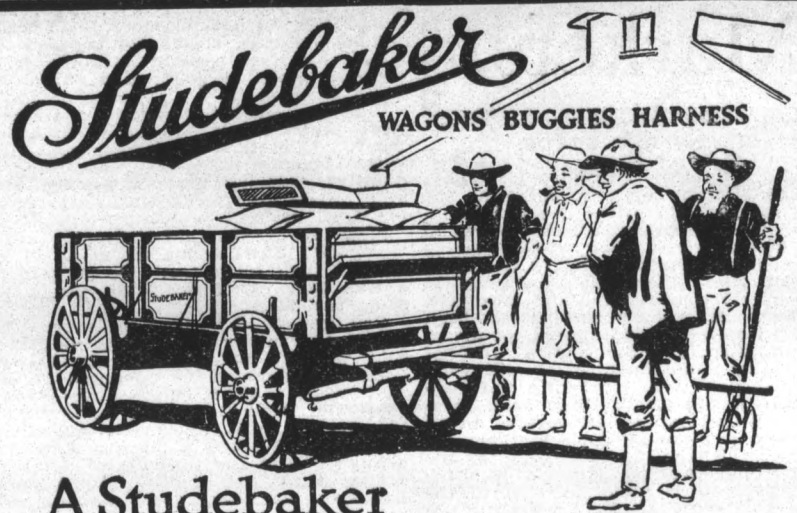
Ottawa Co.—Enough snow has fallen to make fairly good sleighing, the first this winter. Wheat was slightly injured before the snow came, on account of the ground being bare and freezing hard. Farmers are not marketing much grain at present on account of the drop in prices. Hogs and veal calves are the principal stock being marketed, fat hogs selling for 7½c, live, and 10c dressed. Veal calves sell from \$8@12 each when three or four weeks old. There has been a drop of 4c per lb. in creamery butter, but no change in the price of feed farmers have to buy.

Arenac Co.—The recent snow made the roads in very bad shape. Wheat and rye are in good condition. Farmers are marketing quite a number of hogs at good prices, dressed 8@10c, live 7@8c. Farmers are beginning to unload their beans now at prices that are very low, \$1.55, hand-picked basis. Oats are going at 36c per bushel and are selling freely. There are some auction sales, and prices of stock are high, especially for new milch cows, from \$60@90 for common grades. Some hay being sold at \$7@10; elevators not anxious to buy as the open winter has lessened the demand.

Hillsdale Co.—Farmers in this section are taking advantage of the unusually mild winter, to prepare for the spring work. A large part of the manure already accumulated has been hauled to the fields. At this writing, there is excellent sleighing, though indications are that the condition will be only temporary, owing to a thaw that has set in. Almost no ice has been harvested because of the open winter. Hens seem to be laying quite well for the time of year, with the price close to 30c. Almost no grain is being marketed. Corn from Ohio and Indiana is being shipped in to supply the local demand of sheep feeders, the grain being laid down here at about 65c per bushel. Some heavy hogs are being marketed at around 8c. Sheep feeders have commenced shipping western lambs to eastern markets, the price received being near 8c, but fluctuating and uncertain. The increasing interest in the dairy business noted of late in this section still continues. The condition of wheat and rye seems to be fairly good. In localities where cabbage is grown, contractors are endeavoring to contract the crop for the coming season at four and one-half and five dollars per ton. In some portions of the county a new industry—the growing of pop corn extensively—will be engaged in the coming summer.

Ashtabula Co.—We are having fine winter weather with good sleighing, of which farmers are taking advantage to haul logs, coal, etc. There is not so much logging done as in past years, owing to scarcity of timber. There are quite a few salesmen canvassing for commercial fertilizers and lime. Hens are laying unusually well for this time of the year. Eggs are 32c; dairy butter 22c; dressed beef 8@10c; poultry 9@13c; oats 40c; potatoes 70c; live hogs \$7.75; dressed \$10.50; veal, live 10c; dressed 14c; wheat 95c; corn 80c; baled hay \$11.

Darke Co.—The people in this vicinity are not doing very much now. Tobacco (Continued on page 216).



A Studebaker that served 4 masters in 49 years and still on the job

NEARLY half a century of usefulness is the life history of a Studebaker farm wagon, at present owned by Levi Dallas of Topeka, Ind. A letter received by Studebaker states:

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If some other make of wagon had been purchased at a cost of \$90.00 and that wagon had lasted the usual life of such a wagon—ten years—or to be liberal let us say 20 years—divide the cost into 20 years—that wagon would have cost \$4.50 per year, or twice as much as the Studebaker wagon, even

though the Studebaker cost \$20.00 more at the time of purchase.

The same thing holds good today. Don't let a dealer sell you a wagon "just as good" as a Studebaker, even if you could buy it for \$25.00 less.

Studebaker has been building wagons for over sixty years and there are thousands and thousands of farmers all over the country who are using Studebaker Wagons today that were purchased anywhere from 35 to 50 years ago.

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We want a practical stockman to sell mixed feed in Michigan direct to consumer for delivery through our local dealers. Must be well posted on feeding of dairy cows, hogs, cattle and horses. Must be a man experienced in selling or dealing with farmers. We prefer men who have been engaged in buying or selling live stock. Must possess selling ability and must be straight and honest and willing to put in full time driving in the country and taking orders from farmers.

We pay all hotel, livery and railroad expenses and pay our men salaries ranging from \$900.00 to \$1500.00 per year. We assign from five to 10 counties to each of our salesmen and our men have steady work the year around, selling our various kinds of mixed feeds—horse, dairy, hog and cattle feed, which are shipped in carload lots.

No application will be considered unless we are given the names of three references; one banker, one merchant, one stockman, also your present occupation, your occupation during the past five years, your age and whether married or single.

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FARMERS' CEMENT TILE MACHINE CO.,

Box 307, ST. JOHNS, MICH.



Markets.

GRAINS AND SEEDS.

February 16, 1914.

Wheat.—Improvement is noted in the wheat market and prices are a fraction higher. The statistical situation seems to favor better prices. The world's visible supply showed unusually heavy decreases the past week; the amount of grain in sight in this country is below that of a year ago. Argentine's surplus has been estimated at the lowest figures yet given. Generally speaking, the cold weather of this country is not impairing the growing crop, although it is improving the consumption of the grain. It is said, however, that the crop is not covered in all sections and although such sections are few they will likely be endangered by the extreme temperatures. Hessian fly is reported present in some sections to the south. One year ago the price for No. 2 red wheat was \$1.08½ per bu. Quotations for the week are:

	No. 2 Red.	No. 1 White.	May
Wednesday	98½	98	1.02½
Thursday	98½	98	1.02½
Friday	98½	98	1.02½
Saturday	98½	98	1.02½
Monday	98½	98	1.02½

Chicago, (Feb. 16).—No. 2 red wheat, 97c; May 93½c; July, 88½c per bu.

Corn.—During the week prices have declined a cent. The visible supply for the country shows an increase of 793,000 bu., and as compared with a year ago the amount of corn in sight is now about three and one-half million bushels larger. One year ago the price for No. 3 corn was 49½c per bu. Quotations for the week are:

	No. 2 Mixed.	No. 2 Yellow.
Wednesday	62½	64½
Thursday	62½	64½
Friday	62½	64½
Saturday	62½	64½
Monday	62	64

Chicago, (Feb. 16).—May corn, 65½c; July, 64½c; Sept., 64½c per bu.

Oats.—The trade in oats remains steady with no change in quotations. There is only a small amount of business. The visible supply is about twice what it was a year ago and is now a little over 23 million bushels. One year ago the price for standard oats was 34½c per bushel. Quotations for the week are:

	No. 2 Standard.	No. 3 White.
Wednesday	42	41½
Thursday	42	41½
Friday	42	41½
Saturday	42	41½
Monday	42	41½

Chicago, (Feb. 16).—May oats, 38½c; July, 39½c per bu.

Beans.—No changes noted with the deal rather slow. The local board of trade quotes immediate and prompt shipments at \$1.82; March \$1.87 per bu. Chicago reports a steady trade. Pea beans, hand-picked, choice, are easy at \$2.05@2.10; common \$1.75@2; red kidneys, choice, steady at \$2.80@2.90.

Rye.—This cereal is 1c higher. No. 2 is quoted at 67c per bu.

Barley.—At Chicago barley is quoted at 50@72c per bu., while Milwaukee quotes the malting grades at from 68@70c. At Detroit sales were made Monday at \$1.35 per cwt.

Timothy.—Prime spot is steady at \$2.50 per bu.

Alfalfa.—Steady at \$7.25 per bu.
Cloverseed.—Market is up 5c and active. Prime spot is quoted at Detroit at \$8.80 per bu; March at \$8.85. Toledo prime cash is quoted at \$8.80 and prime alike at \$10.75.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$4.80; straight, \$4.50; spring patent, \$5.10; rye flour, \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$23; coarse middlings, \$27; fine middlings, \$29; cracked corn, \$29; coarse corn meal, \$28; corn and oat chop, \$25.60 per ton.

Hay.—Trade is easy with prices steady. Carlots on the track at Detroit are: No. 1 timothy \$14.50@15; standard, \$13.50@14; No. 2, \$12@13; light mixed, \$13.50@14; No. 1 mixed, \$12.50@13; No. 1 clover \$12@12.50.

New York.—Market is easy. No. 1 timothy \$20.50@21; No. 3 standard \$16@20; light clover mixed \$13@19; clover \$17@18 per ton for large bales.

Chicago.—All grades lower. Choice timothy is quoted at \$15@16 per ton. No. 1, \$13.50@14; No. 2, \$11.50@12.50.

Straw.—Steady except rye straw which is lower. Rye \$7.50@8; oat straw \$7@7.50; wheat straw \$7@7.50 per ton.

Chicago.—Quotable as follows: Rye \$6.50@7; oat \$7@7.50; wheat \$6.50@7.
New York.—Rye straw \$15@16 per ton; oat straw \$11@12.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is firm but prices remain unchanged; an advance in prices is expected. Quotations: Extra creamery 26½c per lb; firsts 24½c; dairy 21c; packing stock 18c.

Chicago.—Market is very firm for the better grades of butter; cold weather has checked receipts. There is plenty of the poorer grades for which the demand is light. Quotations: Extra creamery, 28c; extra firsts 26½@27c; firsts 24½@26c; seconds 22@23c; ladies 20c; packing stock 18c per lb.

New York.—Market is firm. The demand is active with prices about 3c higher

than last week. Quotations: Creamery extras 30@30½c; firsts 26½@29½c; seconds 23½@25c; packing stock 19½c per lb.
Eggs.—Market steady with prices ½c lower than last week. Current receipts of fresh stock is quotable at 27½c per dozen.

Chicago.—Market conditions are steady with prices about ½c lower than last week. Quotations: Miscellaneous lots, cases included, 25½@27c, according to quality; ordinary firsts 25½@26c; firsts 27c; refrigerator stock steady at 22@24c for April firsts.

New York.—Conditions remain unsettled, with prices about the same as last week. Quotations are: Fresh gathered extras 32c; extra firsts 31c; firsts 30@30½c per dozen.

Poultry.—Local market holds firm with prices ½c higher on springs and hens; cold weather favorable for good trade; geese and ducks have advanced 1c over last week. Quotations: Live—Springs 16½@17c; hens 16½@17c; turkeys 18@19c; geese 17@18c; ducks 18@19c.

Chicago.—Market is firm and without change except for turkeys which are 1c higher than last week. Quotations on live are: Turkeys, good weights, 17c; others 12c; fowls, choice 16c; spring chickens 13@15c, according to quality; geese 10@14c, according to quality; ducks 15@16c.

Cheese.—The market continues firm with prices unchanged. Quotations on Michigan flats 15½@16c; New York 17½@18c; brick 16@16½c; Limburger 14@15c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. Quotations: No. 1, \$4.50@5.50; No. 2, \$2.50@3.50 per bbl. At Chicago apples are being steadily held. The demand for barrel stock is much stronger than that for box apples. Prices are unchanged. Country picked ranges from \$3.50@6 per bu; No. 1 Jonathans are selling for \$5@6; Spies are \$5.50@6; Baldwins are \$5@5.50.

Potatoes.—On account of cold weather trade is very light. Prices are unchanged. Quotations are: In bulk 58@62c per bu; in sacks 64@65c per bu for carlots. At Chicago the cold weather has put things practically to a standstill. Good Michigan white stock is quoted at 60@66c per bu.

Onions.—The local market is steady with prices slightly higher. Quoted at \$1.50 per bu. for yellow and \$1.60 per crate for Spanish. At Chicago trade in domestic stock is good with prices unchanged. Sacks 65@70 lbs., Michigan-grown, sell at \$1.25@1.50.

Cabbage.—Steady with prices unchanged. Good quality is quoted at \$2.50@2.75 per bbl. At Chicago the cold weather cut active trading. The supply is good and the demand weak. Prices are slightly lower. Quotations: Holland \$1.75@1.80 per bbl.

Buffalo.

February 16, 1914.

(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Cattle.—Receipts, 3300; prime steers, \$9 @ ; shipping, \$8@8.75; butchers, \$7@8.50; heifers, \$6@8.15; cows, \$3.75@7.25; bulls, \$5.50@7.50; stockers and feeders, \$5.75@7; stock heifers, \$5.25@5.75; fresh cows and springers, \$35@85.

Veals.—Receipts 600; \$6@13.
Hogs.—Receipts 14,500; heavy and mixed, \$9.10@9.15; yorkers and pigs, \$9.15@9.20; roughs, \$8.25@8.40; stags, \$6.50@7.50; dairies, \$9@9.15.

Sheep.—Receipts, 20,000; lambs \$5.50@8.25; yearlings, \$5@7.20; wethers, \$6@6.35; ewes, \$3@5.85; sheep, mixed, \$5.75@6.

Chicago.

February 16, 1914.

Cattle prices did not change materially last week, opening a little higher on a rather moderate run for Monday, with a better demand than usual owing largely to the cold weather, which stimulated the consumption of beef. Later in the week larger receipts caused the market to weaken, and early improvement disappeared. Beef steers sold during the week largely at \$7.75@9, the choicer class of heavy steers going at \$8.90@9.55, the top being a shade higher than at any previous time this season. The commoner class of light steers that were not much more than warmed-up from a short course of feeding brought \$6.85@7.95, while medium grade steers sold at \$8@8.45, good heavy lots at \$8.50 and over, and good to prime yearlings for \$8.40@9.25, a sale being made of 20 fancy Hereford 1130-lb. steers at \$9.55. For cows and heifers adapted for the butcher trade there was a good outlet on the basis of \$4.90@8.50 for ordinary to prime kinds, with a few head of fancy yearling heifers taken at \$8.60@9. Cutters brought \$4.25@4.85, canners \$3.40@4.30 and bulls \$5.40@7.65. The stocker and feeder trade was moderately large, high prices for good offerings tending to check business, and packers took many of the better class of these cattle that had some "kill." Stockers sold usually at \$5.65@7.75 and feeders with considerable weight at \$7@8.10, only prime yearling stockers selling anywhere near top quotations for these cattle. Stock and feeding cows and heifers had a limited sale at \$5.50@6.85. Calves sold freely at \$4.75@10.75, and stock calves had a big demand at \$7.50@8.25, with offerings much too small to go around. Milkers and springers were salable at \$5@8.5 per head for inferior to prime cows, and most of the less desirable cows were sold for beef.

Hogs keep on scoring new high records every week, the past one being no exception, with a good demand, but sharp reactions occurred after two new high records were made early. As of late, the strongest feature was the increasing requirements of eastern shippers, who bought liberally, competing sharply with local killers for the best droves of hogs offered. The steadily increasing propor-

tion of hogs of good weight has changed the relations of light and heavy as regards prices, and at last the choice light lots are selling within 5c of the best heavy hogs, with prospects that before long former conditions will be reversed by the light lots selling at a premium. The receipts graded well on an average, showing evidences of good feeding, and the bulk of the sales took place within a range of 10c. Provisions had a good demand, despite much higher prices than a year ago, and fresh pork also sold freely, its consumption being increased by lower prices than were asked for other meats. Western packing centers report stocks of provisions as larger than a month or a year ago, but much smaller supplies than two years ago. As the year advances further gains in the average weight of hogs marketed may be expected, as is usual, the average a year ago having been 228 lbs., two years ago 217 lbs., three years ago 231 lbs., and four years ago 245 lbs. On the high day of last week prime hogs brought \$8.90, reacting later and closing on Saturday at \$8.40@8.70 as an extreme range, while pigs brought \$7.25@8.45. Prime light hogs sold close to top figures.

Sheep and lambs underwent a big improvement last week in the demand, with a great increase in the shipping demand, close to 39,000 head being shipped from here, comparing with only 22,591 the preceding week and 23,131 the corresponding week of 1913. Naturally, prices firmed up and this was in the face of much larger receipts, but final values were in numerous instances not the best of the week, a late reaction setting in. Lambs brought \$6.75@8, with culls selling at \$6@6.50 and feeders at \$6@7.15. Considerable numbers of Colorado lambs arrived, as well as several good bunches of Montana hay-fed feeding lambs. Yearlings closed at \$6@7.15, wethers at \$5.50@6.15, ewes at \$3.50@5.80, and bucks at \$4@4.75. At the close the top for lambs was \$7.90.

Horses had a rather better outlet last week, at least so far as very desirable ones were concerned, with demand centering on farm workers. Geldings went at \$140@185 per head mostly, a few selling down to \$125 and a limited number up to \$200, while farm mares were wanted at \$185@225. Wagon horses were salable at \$185@240 and drafters at \$225@275, although few went near the top. Now and then a prime heavy drafter sells around 300, few being offered or wanted. Inferior old nags go at \$50@100 or better. They are hardly salable at any price and should not be placed on the market if owners expect any profits.

CROP AND MARKET NOTES.

(Continued from page 215).

is nearly all stripped and most of it is under contract. We have had only one big snow, but have just had a heavy ice spell, breaking down many good trees. The roads are soft now. Wheat and rye are looking fairly well. There is not much grain being marketed. Farmers are waiting for better prices.

Crawford Co.—We are having nice weather with very little snow on the ground. The wheat is standing the winter weather well. Roads are good, and any kind of a load can be moved to market. Farmers are hauling manure and tile, and preparing for the spring work. Wood is being cut for the year's supply. Timber buyers are paying \$27 per thousand for ash timber delivered at the track. Many farms are for sale. Improved farms sell high. Many farm changes will occur between now and spring. Hens are not laying so well. Dairy cows are a good paying property. Stock of all kinds is doing well. Cattle and hogs are the chief products marketed. Eggs 30c; butter 28c; butter-fat 34c.

Warren Co.—The ground is frozen, and we have but little snow. Wheat and grass are not damaged much as yet. Wagon roads are in fine condition, as there has been very little thawing. Stock of all kinds is wintering well. Farmers are now marketing hay, wheat, hogs and some corn. A few hens have begun to lay, and the egg market is steady to lower. Cows are holding up well in milk flow. This has been a fine winter for outside work, and farmers are trimming orchards and cutting wood. Institutes and farmers' meetings are well attended. Some farms are changing hands, and there are many public sales scheduled for February. The usual trains of movers will soon start. Local prices: Wheat 95c; corn 60c; alfalfa \$19; mixed hay \$14; butter 32c; eggs 32c; poultry 14c.

Indiana.

Jay Co.—The recent changeable weather has put the roads in a very bad condition. Wheat and rye are looking good. Nearly all the hay is baled but none is being sold. There is some grain moving to market every day. Hogs are pretty well cleaned up; great numbers were lost by cholera, but vaccinating was resorted to and stopped it. The Farmers' Short Course, followed by regular institutes is drawing immense crowds. Many silo-fed cattle are waiting for the market. Hogs \$8.40@9; milch cows \$20@60; sheep \$5@7; chickens 10c; ducks and geese 8c; wheat 92c; oats 35c; corn 78c; hay \$12; coal \$3.75@7.50.

Florida.

Volusia Co.—Roads are being improved as money can be got. Several new farm houses have gone up since last March. Turpentine from the pine trees at present is the best industry. Several farmers from Indiana and Nebraska settling in county. Most land is being sold in ten-acre tracts. For over 90 days last summer this county saw no rain and for the last five years the writer never saw the swamps and creeks dried up before. The drought causes a shortage of oranges and all small vegetables. The southern part of Volusia county is in the orange belt. Oranges are worth \$3.50@6 per box here.

Missouri.

Mississippi Co.—Very little snow in this section this winter. Roads are in very

good condition for the time of year. Wheat looking good. Good many hog and cattle are on feed. Some corn is being held for higher prices. Some ground being broken for corn. We have had a very mild winter. Corn selling at 60c. Good hay at \$20; eggs 25c; good hogs selling at \$7.25 per cwt; had hard sleet and freeze-up last of January; did a great deal of damage to the forest and fruit trees.

Nodaway Co.—There is very little snow as yet. The ground is frozen and the roads are fine. Many farms are changing hands at from \$100@150 per acre. There is not much stock going onto the market, and not much grain. Corn is being shipped in. Prices: Hogs \$7.80; chickens 12c; eggs 20c; butter 20c; corn 70c; hay \$10.

Barton Co.—Fine weather continues, and roads are in fine condition. Wheat fields are furnishing an abundance of pasture, which will be a great help here, as winter feed is scarce. Some corn selling for local consumption at 60c; hay \$12.50; wheat 85c; oats 45c; fat cattle \$6; hogs \$7.75; butter-fat \$29; eggs 24c. Farmers here have little to sell this winter unless they have several cows to milk. Good milch cows are selling from \$50@100 per head. The past three years has shown many here that dairy products are about the surest crop for this country.

Vernon Co.—There has not been very much snow fall so far but we have had plenty of moisture. Wheat appears to be all right and is looking fine. The roads are in pretty good shape. There are not many cattle being fed, but there are quite a few hogs. The scarcity and high price of corn has hindered the farmers from doing much in the way of feeding stock. The hens have begun to lay some. Some farmers are selling hay, others buying it, not very much shipped out. The weather is just like spring, we have had a very mild winter.

Kansas.

Smith Co.—January has been extremely warm and nice, which has been very favorable for the wintering of stock. There is not much stock being fed yet. Corn sells higher at the public sales than on the market. Hay is a good price. The hens are beginning to lay within the last few weeks. The snowfall has been very light so far. Some wheat and hay being sold, but not much corn. Wagon roads were bad but are becoming good again.

Dickinson Co.—We have had a mild winter so far with very little rain or snow. Wheat is looking fine. Stock is doing well and feed is holding out well on account of late pasturing and fine weather. Some cattle are being fattened on ground wheat, ensilage and alfalfa. Fat hogs are scarce. Young chickens matured late and did not lay in fall and early winter, but are doing well now. Straw is baled, and sells from \$3@5 per ton. Roads have been dragged and are in good shape.

Nehalem Co.—There is not much stock being fed this winter on account of the high price and scarcity of feed. Hens have begun to lay fairly well. There is only a light fall of snow. Wheat and rye seedling are in good condition. Stock is still out on pasture, but growth is kept back by light frosts every night. Farmers are selling hogs, chickens, cattle, horses, butter and cream, but no grain or hay to spare for shipment. Roads are very good, being hard and dry. New roads are being inspected and laid out. Farmers are killing hogs and sheep, cutting wood, hauling manure, mending and oiling harness, dragging roads, etc.

Trego Co.—We have had a very open winter so far, no snow and very little cold weather. The only cold weather being on February 6-7 when the thermometer registered as low as eight below zero. Some farmers have already started plowing for oats. A larger acreage will be sown to oats this spring than ever before in this county. The condition of the wheat is extra good except the very late wheat which is damaged about 40 per cent. Nothing is being marketed by the farmers except eggs and cream. The price received for cream is 23c; eggs 20c. Corn is selling for 78c; oats 50c. Seed grain of all kinds is very scarce and high priced. Good seed corn cannot be purchased for less than \$2 per bushel.

Lapeer Co.—Farmers are giving the stock and poultry attention, are getting up wood and occasionally marketing hay, oats, wheat, rye, barley, corn, beans and other produce. Loose hay brings about \$9 per ton; wheat 90c; rye 52c; oats 39c; beans \$1.60; corn about 35c per crate. The roads are not very good. Most of the fall grains, meadows, etc., are unprotected. Hens have begun to lay some, the price of eggs is 30c per dozen; butter 28@29c. Farmers are not selling their stock lately, preferring to hold the same until about May for better prices.

THE LIVE STOCK MARKETS.

Hog slaughtering at western points has been running along weekly at the rate of 633,000 to 650,000, comparing with 504,000 a year ago. The demand is active for all desirable droves of hogs, and of late eastern packers have been large buyers in the Chicago market.

In the country lying south of the Ohio river there is an increasing tendency to winter feed cattle instead of roughing them through for summer grazing. Silage and cake are used largely, and as many of the cattle were put in at high cost, there is a disposition to unload at the first profitable opportunity.

Congress is planning on making haste with its work in order to end the session at an early date. It is proposed to adjourn about June 1, but the numerous unexpected problems that are coming up make it probable that a later date will have to be set unless greater dispatch in the disposition of many measures is had.

THIS IS THE LAST EDITION.
DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 19, 1914.
Cattle.

Receipts, 1183. Market steady on all grades.

We quote: Best steers and heifers, \$8; steers and heifers, 1000 to 1200, \$7.50@8; do 800 to 1000, \$7@7.50; do that are fat, 700 to 900, \$6.75@7.25; do 500 to 700, \$6.25@6.75; choice fat cows, \$6.25@6.50; good do, \$5.75@6; common do, \$4.75@5.25; canners, \$3.50@4.25; choice heavy bulls, \$7@7.25; fair to good bolognas, bulls, \$6.50@6.75; stock bulls, \$5.50@6.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do, \$6.25@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair do, \$6@6.25; stock heifers, \$6@6.50; milkers, large, young, medium age, \$70@80; common milkers, \$40@50.

Haley & M. sold Kamman B. Co. 7 cows and heifers av 1013 at \$6.30, 1 do wgh 1130 at \$5; to Rasmick 3 cows av 960 at \$5, 3 do av 920 at \$4.50; to Sullivan P. Co. 2 do av 1235 at \$6, 7 do av 937 at \$5.35, 4 do av 1172 at \$6, 2 heifers av 780 at \$7.10, 1 steer wgh 1090 at \$7.60, 2 cows av 1000 at \$6, 1 bull wgh 1600 at \$7, 1 do wgh 1210 at \$6.75; to Bresnahan 3 cows av 937 at \$4.75; to Mason B. Co. 1 do wgh 1000 at \$5.25, 24 butchers av 843 at \$7.15; to Newton B. Co. 11 steers av 921 at \$7.55; Mason B. Co. 4 cows av 1025 at \$6; to Ratkowsky 2 cows av 1000 at \$6; to Sullivan P. Co. 12 steers av 890 at \$7.40, 10 do av 895 at \$7.55; to Kull 4 butchers av 807 at \$6.75; to Mason B. Co. 2 cows av 900 at \$5.50; to Kamman B. Co. 5 steers av 910 at \$7.75, 9 do av 902 at \$7.40; to Sullivan P. Co. 10 do av 764 at \$7.50, 3 bulls av 1220 at \$6.50, 18 steers av 1005 at \$7.30; to Goose 2 cows av 735 at \$4.25.

Bishop, B. & H. sold Gerisch 18 steers av 1005 at \$7.50, 2 bulls av 1040 at \$7; to Newton B. Co. 16 steers av 1076 at \$7.70, 3 cows av 1077 at \$6, 1 do wgh 900 at \$5, 1 do wgh 950 at \$5.50, 7 butchers av 661 at \$6, 13 steers av 815 at \$7.55; to Sullivan P. Co. 1 bull wgh 1600 at \$7.25, 1 do wgh 1020 at \$6.25, 6 steers av 770 at \$6.85; to Thompson Bros. 9 butchers av 931 at \$6; to Mich. B. Co. 5 cows av 1064 at \$5; to Parker, W. & Co. 5 do av 1146 at \$6.25, 31 heifers av 664 at \$6.50, 9 butchers av 773 at \$6.75, 4 cows av 962 at \$4.65, 1 bull wgh 1530 at \$7, 5 cows av 1052 at \$5.85, 3 do av 777 at \$4.25, 2 heifers av 580 at \$6.25; to Ratner 3 cows av 8997 at \$5.50, 2 heifers av 625 at \$6; to Kull 2 cows av 660 at \$5.25; to Kamman, B. Co. 11 steers av 768 at \$7.35, 3 do av 1013 at \$8; to Hammond, S. & Co. 1 bull wgh 1460 at \$7, 2 cows av 950 at \$6.50, 5 butchers av 728 at \$6.90; to Parker, W. & Co. 3 bulls av 947 at \$6.50; to Sullivan P. Co. 20 steers av 1012 at \$7.40; to Ratkowsky 3 cows av 957 at \$5.50, 1 do wgh 1410 at \$6.50, 1 bull wgh 1270 at \$7; to Hammond, S. & Co. 3 steers av 950 at \$7.25, 2 do av 870 at \$7.40, 7 do av 750 at \$6.75, 2 do av 1150 at \$8, 19 do av 850 at \$7.50, 1 bull wgh 1180 at \$6.75.

Veal Calves.

Receipts 430. Market strong for good; common dull. Best, \$11@12; others, \$6@10.50.

Haley & M. sold Nagle P. Co. 2 av 130 at \$11, 7 av 160 at \$11.75, 2 av 160 at \$11.50, 2 av 120 at \$11; to Burnstine 5 av 160 at \$11.75; to Ratner 3 av 220 at \$8; to Mich. B. Co. 2 av 145 at \$10, 10 av 147 at \$10.50, 9 av 150 at \$11.75, 1 wgh 250 at \$9.

Sheep and Lambs.

Receipts, 4386. Market steady. Best lambs, \$7.75@7.85; fair to good lambs, \$7.40@7.65; light to common lambs, \$6.50@7; yearlings, \$7@7.15; fair to good sheep, \$5.50@5.75; culls and common, \$4@5.

Haley & M. sold Mich. B. Co. 13 sheep av 115 at \$5, 3 do av 135 at \$4, 52 lambs av 83 at \$7.75, 66 do av 90 at \$7.60; to Breitenbeck 66 do av 65 at \$7.25; to Nagle P. Co. 19 sheep av 100 at \$5.50, 11 do av 115 at \$5.25, 16 lambs av 80 at \$7.25.

Roe Com. Co. sold Mich. B. Co. 85 lambs av 65 at \$7.40, 6 sheep av 100 at \$5.

Spicer & R. sold Nagle P. Co. 67 lambs av 75 at \$7.65, 42 do av 85 at \$7.65, 21 clip lambs av 90 at \$6.75; to Thompson Bros. 13 sheep av 85 at \$5; to Young 32 lambs av 65 at \$7.25; to Parker, W. & Co. 21 sheep av 95 at \$5.25.

McQuillan sold Sullivan P. Co. 98 lambs av 70 at \$7.50, 11 do av 45 at \$6.50, 27 sheep av 95 at \$4.75.

Stier sold same 11 sheep av 110 at \$5.50, 7 lambs av 88 at \$7.50.

Smith sold same 11 lambs av 81 at \$7.75.

Sharp sold Mich. B. Co. 33 sheep av 115 at \$5.25, 139 lambs av 88 at \$7.85.

Hogs.

Receipts, 2894. All grades \$8.75.

Bishop, B. & H. sold Parker, W. & Co. 1476 av 200 at \$8.75.

Roe Com. Co. sold Sullivan P. Co. 150 av 170 at \$8.80.

Spicer & R. sold Hammond, S. & Co. 200 av \$8.75.

Haley & M. sold same 165 av 200 at \$8.75.

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This planter is guaranteed. It must be all we claim and all you expect. 170,000 users verify the Hayes Four-Wheels regulate depth of planting to the fraction of an inch. Corn all comes up at the

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Hayes Four-Wheels guarantee surer germination and quicker growth. Wheels pack the dirt from the sides to hold moisture and leave a ridge on top so that the corn sprouts quickly and comes up several days sooner. The ridge gives

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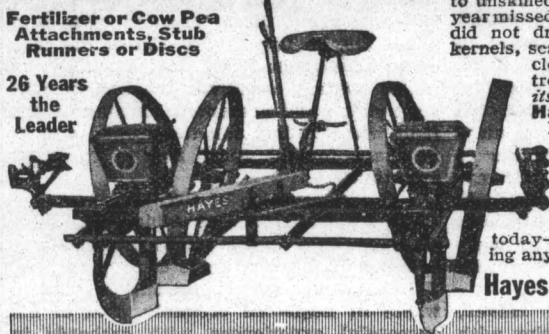
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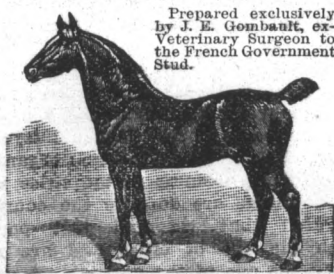


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Horticulture.

Mid-Winter Horticultural Meeting

Benton Harbor upheld its reputation as a fine place for fruit growers to meet when the Michigan State Horticultural Society held its mid-winter meeting there February 4-5. The First Baptist Church was always well filled with an interested crowd of progressive fruit growers.

The first session was opened with a talk by F. A. Wilken, of the editorial staff of the Michigan Farmer, on the subject, "For Better Results in Fruit Growing." He spoke of the things we would have to give consideration before we got maximum results in our work. Factors with reference to local conditions and varietal characteristics which would have to be taken into consideration in determining the proper care of each orchard were mentioned.

Mr. Chas. F. Hale, of Grand Rapids, told in an interesting manner of the "Stumbling Blocks in Co-operation." These, he said, were mainly contracts not rigid enough and curbstone brokers. To make co-operation a success we should make the fence high enough so that the grower cannot jump over it. The curbstone brokers were the chief causes of growers wanting to vault. They offer attractive inflated prices as a temptation to the growers. Those who break faith with the associations were the ones who caused co-operation to fail, and not those who stayed with it.

Mr. Floyd Barden, of South Haven, closed the Thursday morning session with a talk on "Profitable Points on Peaches." In his usual good manner he told of the importance of location for a peach orchard. He also stated that all apparently good sites did not prove good and that varieties were particular as to local con-

ditions. Fruit should be picked when fit to eat and not before, and more honor should be put in the baskets when packing. Mr. Buskirk uses a red handled basket which he has patented and with proper packing and labeling he is now able to get from three to five cents per basket over the market price.

Mr. Ralph Ballard, of Niles, who has made a great success of the sod mulch system of apple culture told of his experience. He told of two systems in use; the one where the grass was cut and allowed to remain on the ground, and the other where material from the outside was brought in. He followed the latter system, and has made well with it. For the past season his eight and a half acre orchard brought him \$4,000 for the fruit on the trees. After deducting \$7.20 for the fertilizer value of the straw he adds, which is about three tons and costs him about \$10, he figures the cost of the care of an acre about \$3.50. He says that the mulch system conserves the moisture in good shape and prevented bruising of the fruit when falling, and the ground was in fit shape for the spray rigs to go on at any time.

Renovation of Orchards.

Dr. Frank Lattin, of Albion, N. Y., a plain country doctor whose practice was in some of the best apple country in New York, and who saw opportunities going to waste in neglected orchards, told of his successful experiences with orchards in various places, totaling about fifty acres. He said that all these old orchards needed was good care in spraying, cultivation and pruning to make them profitable. He told in detail the results of his orchards. The average yields for over five years



A two-year-old orchard at Sodus, N. Y., on the S. H. DeRight farm, is here illustrated. The varieties are Elbertas and LaMonts and the trees have attained a remarkable growth. Set out in April, 1911, many of them already have a branch diameter of 12 and 14 feet. The soil is a clay loam, somewhat stony, and is seeded to clover. It has always been well cultivated and manured. This year many of the trees have produced perfect specimens of fruit. A method adopted by this

orchardist is to leave the tree with the lower branches, many of which droop to the ground. He does not anticipate any serious trouble with snow during the winter. The bushy development is expected to facilitate the harvesting. A seven-year-old orchard of Elbertas has been trained the same way. The owner remarked that it was his custom to go to market every year about one week later than most growers, getting in after the glut was over.

ditions. While many favored the Elberta he had found the Engles Mammoth and LaProlific the most profitable varieties for his location. In spraying he had received no definite results by the use of self-boiled lime-sulphur, but had received very good results in controlling the curculio by using arsenate of lead. He mentioned the elements of risk in peach growing and in marketing. The man behind the orchard was also considered an important factor in the business.

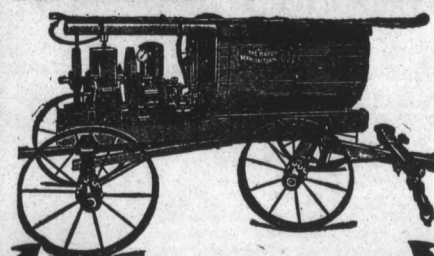
Mr. M. D. Buskirk, of Paw Paw, a practical grape grower and the inventor of the steam sprayer gave a very interesting paper on "Grapes for Profit." Among the things he brought out was that the difference between proper and improper pruning meant a difference of from one to five thousand baskets of grapes in many vineyards. He tried to leave about fifty buds to the vine when pruning. Spraying was considered one of the most important parts in grape growing, and just before the blossoms opened, immediately after and ten days after that were the best times to spray for good results. Bordeaux mixture and arsenate of lead were the best sprays. Fruit

has been 117 barrels per acre, which brought an average of \$326 per acre, or returns of \$8.55 per tree. He stated that he could have done better had he had the time to put to market to better advantage.

During the evening session Dr. Eben Mumford, state leader of the farm management movement, enlightened his hearers on that subject in his usual forceful manner. He compared the well organized ways of doing business in the cities with the way things are done in the country. He stated that we had just passed through the age of cities and are now entering the age of the country. A great fault of the country was its lack of organization and all counties would benefit if they would have a farm management man on this account. These men were wrongly called farm advisers as it was not intended that they pose as know-it-alls. They were to assist the farmer in getting information he desired and to bring to his notice such knowledge as would be of benefit to him. A great part of his work was to be as a community organizer.

Prof. H. J. Eustace, the popular horti-

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culturist of M. A. C., gave interesting and instructive views of fruit farms, insects and diseases. Through picture and word he imparted in an entertaining way a lot of valuable information.

"Making Money with Melons" was the subject handled by Mr. Harry Blandford, of Newaygo county. As melon growing is quite an industry in Berrien county, this subject was of much interest to many. Mr. Blandford told of the principal factors in the work and was followed by a spirited discussion by others experienced in the work.

"Commercial Tomato Growing" was ably handled by Mr. C. W. Waid, the new vegetable field agent of the College. Mr. Waid handled his subject as one experienced, and all agreed that his field work will be of value to the vegetable growers of the state. We are promised an article from Mr. Waid on the subject of his talk and therefore will not suggest what he said.

Strawberry Growing.

Mr. F. E. Beatty, the well-known strawberry man of Three Rivers, gave a very valuable talk on "Fine Points in Growing Strawberries." Among the more prominent points Mr. Beatty brought out was the use of lime on strawberry plantations. This is contrary to the general idea as it is thought that strawberries like a moderately acid soil. He applies two tons of the raw limestone every four years on all soils except those of the limestone kind. The black root or the rotting of the roots where plants are apparently healthy otherwise, has been prevented by this use of lime. Lime, he said made the roots a brighter color, and healthier. Mr. Beatty also believed in mixing varieties even though they be of the self-fertile kind. Nubby berries and green points can be prevented to a great extent by this mixing of varieties. Good cultivation was strongly urged by this strawberry expert. Even in dry weather the ground should be gone over about once a week, as moisture will escape if the dry mulch is not worked occasionally. Vetch is a favorite soil renovator of his. He claimed that it furnished more humus than other legumes and was also one of the best nitrogen gatherers. He urged using distinctive methods of packing fruit and distinctive packages. Advertising and putting strawberry recipes in each case assisted him in working up a good trade. He has his trade in such shape that he dictates the price of his fruit to the buyer, and not vice versa, as is usually the case.

Problems of the Orchardist.

Dr. Lattin, in his second appearance on the program, spoke of "Some of the Problems of the Orchardist." The first point he brought out was the matter of over-production. Figures show that the production of apples in 1905 averaged two and a half bushels per capita, and in 1910 it was only one and a half bushels. The problem seems to be more one of under consumption than over-production. He also spoke of the competition from the western states, which he did not think serious. Dr. Lattin favored direct marketing and urged strongly the use of the parcel post for this purpose.

"Tax Reform in Michigan" was the subject well handled by Prof. David Friday, of the University of Michigan. He spoke of the necessity of a revision of the taxes and stated that the farmer had nothing to complain of. Contrary to the general opinion, he said that the railroads stood the heaviest burden of taxes. Farm property was not assessed at its real value but the railroad was and therefore it was paying more than its share. He said that the present tax reform was right and that those who complained of it were unjust in their complaints.

"How to Make the Fruit Laws more Effective," was told by Representative J. J. Jakway, who was the father of the Michigan fruit package law. Most of the laws need enforcement to make them effective although some need amending. The fruit inspection law is one of the latter. As it is at present it is hard to put in force in an effective way. Mr. Jakway's subject is an important one and he handled it in a practical way.

At different times during the meeting very good music was furnished by several Benton Harbor people, which added greatly to the enjoyment of the meeting. The Berrien County Horticultural Society is to be commended for all their considerations for the comfort of the visitors, and for the energy they put into making this meeting a success. A fruit display at one side of the auditorium was a credit to the local growers and others who exhibited there.

Among the important things considered

by the executive committee, were the summer meeting and the sale of spray material and fertilizers through the society. It was decided to hold the summer meeting in conjunction with the Oakland County Horticultural Society, and with reference to the other matter it was decided not to sell materials this year. It was thought that prices generally were reasonable on account of competition.

A CURE FOR BLIGHT?

Cures for blight have made perennial debuts before the fruit growing public, and like many society debutantes, they attract considerable attention for a short time, and then fall to the back ground. Some of them are brought forth for the purpose of extracting money from the fruit grower's pockets, and not for curing blight; others are given to the world by well-meaning but mistaken people.

Among those brought out for profit-making are substances which are injected into the tree to be taken up by the sap. The other kinds consist of driving nails in the trunk, putting salt around the tree, cutting the tap root and burying junk under the tree.

Recent announcement has been made of a cure discovered by a western grower. It seems that he is a serious minded man, but as to whether he is mistaken we cannot tell. At least we can give him credit for not wishing to profit by his discovery, and for his willingness to give it to the world for what it is worth. This grower, whose orchard is in the Orchardvale district of Washington, where the blight has been very serious, claims to have given the subject very serious study for some time. About three years ago he started experimenting and claims to have had very good success in checking the trouble.

The method of treatment consists of the injection of a solution of bichloride of mercury under the bark, which is certainly a very simple and inexpensive process. It is claimed that a month after treatment, the cankers showed no oozing or signs of spreading. Well developed cankers have apparently been practically dried up and killed by this method.

The fact that it works by the injection method makes the writer a little skeptical, but, even so, such a method of cure may be possible. For those experimentally inclined, this "cure" offers a suggestion as to one method of procedure which might give results of value.

TROUBLE DEPARTMENT.

Propagating Strawberry Plants.

Kindly tell me how to propagate strawberry plants. I would like to grow enough during 1914 to set an acre in 1915.

SUBSCRIBER.

The propagation of strawberry plants is very easy. It requires no different care than that of growing a good strawberry plantation. In ordinary practice the new plants of any good patch are taken up for use in a new patch. Some nurserymen set plants as for fruiting purposes on a rich soil which will produce a good crop of plants and then in fall dig up the entire plantation for their nursery trade. It is hard to tell how much of a patch one would need to get plants enough for an acre as this will depend upon seasonal and local conditions.

Spraying During Blossoming Time.

Is spraying at blossoming time necessary? Some say that in order to get marketable plums it is necessary to spray when they are in full bloom. Isn't spraying at blossoming time a violation of the state law? Please explain how and when to spray.

Arenac Co.

J. F. P.

It is not necessary for the production of good fruit to spray during blossoming time. In fact the spray material may have detrimental effect on the process of pollination. It is also a violation of the state law and for that reason should not be done.

Those who state that it is necessary to spray plums while in blossom to get good fruit have certainly not been properly informed. All of the successful plum growers of the state have grown plenty of good plums by proper spraying which does not include spraying during blossoming time. Spraying is most essential for successful plum growing and where one has not had success it is due to spraying at the improper time, using the wrong spray mixture or not spraying thoroughly enough. The latter is the most general cause of failure.

Articles giving full directions for the spraying of the different kinds of fruit will appear in the columns of the Michigan Farmer in due time.

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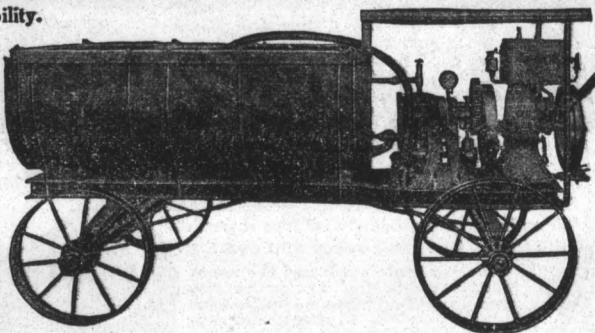
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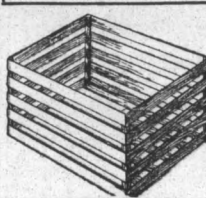
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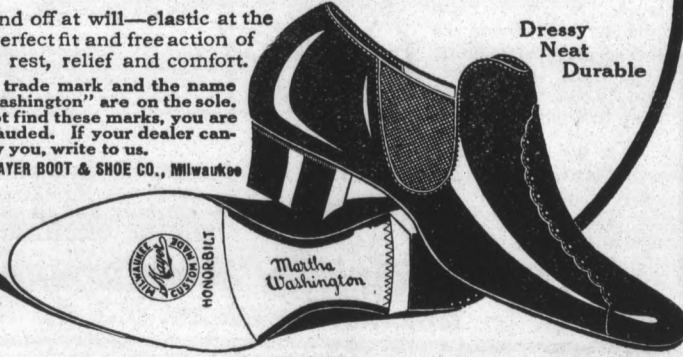
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Poultry and Bees.

VENTILATION OF INCUBATORS.

The writer has always been more or less of a student along the lines of artificial incubation. One factor in particular have I been trying to work out satisfactorily, and that is the cause of so many embryos dying about the fifth day of incubation under artificial hatching conditions. After careful experiments and study, I have come to the conclusion that it is caused by ruptured blood vessels, and thus further development is prevented. But the problem is yet far from solved even though we know the above to be true. What we are not so very certain of is what causes the rupturing of these blood vessels. It is perfectly natural to ask what causes this rupturing in incubator hatched eggs and not in hen hatched eggs. Some have come along with the hasty explanation that it is caused by rough handling of the eggs. Although this may be the cause to a very small extent, for the real cause we will have to look a little deeper. To my way of thinking it is caused by too much ventilation. We all know that fresh air is rich in oxygen and that oxygen is necessary for all living things. The mistaken idea is that so many think that they have to supply plenty of fresh air because they assume that the chick is breathing it through its lungs. This is perfectly true when the embryo is far enough developed to be a chick, but until then it is a mistake to supply very much oxygen to the embryos. We all know that oxygen increases the circulation of the blood and enriches it. Is it not feasible, then, to assume that if too much oxygen is supplied the circulation of the blood is increased to such an extent as to cause ruptured blood vessels?

According to this it is advisable to restrict the ventilation considerably in the early part of the hatch and increase the

any other thing. Use lots of nails. I put twelve in each brood frame—four at each end of top bar, two at A (Fig. 1), and two at B, and two at each end of bottom bar at C. The life of a brood frame depends on the nailing. How many times I have seen a person trying to take out a frame that has been glued up with propolis a little more than usual and have a top bar or bottom bar pull off and maybe tear a nice comb of brood in two. The same rule applies to the section holders. I use three or four nails in each end.

In wiring the brood frames the following is a good device. Saw two boards V-shape, cutting off the point at the top. Now bore a hole near the top at A, (Fig.

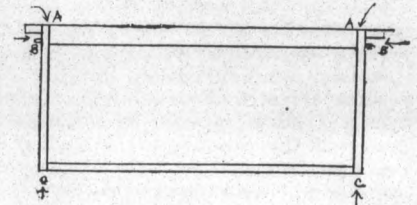
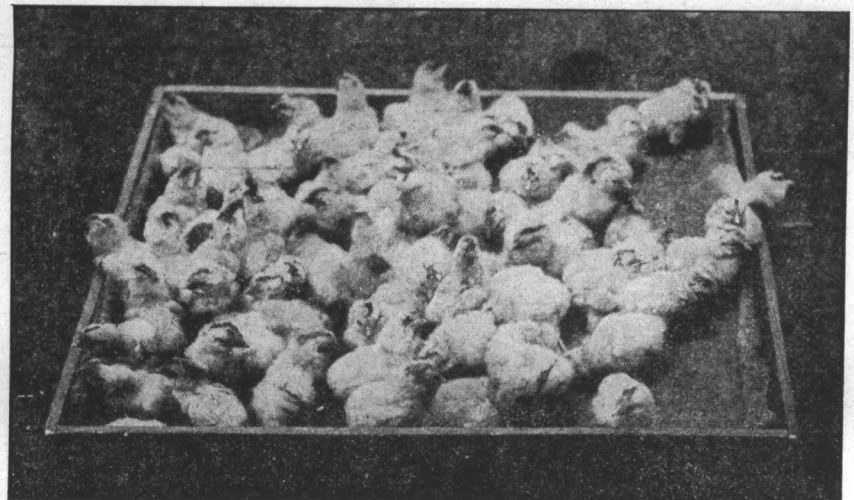


Figure 1.

II). Nail these on the work bench at the proper distance apart to accommodate the spool of wire which is held in place with a bolt, the ends of which go through the holes in V-shaped piece. Now tack a narrow piece of section on one side of one V-shaped piece so as to make a tension on the spool, B, (Fig. II). Now tack two narrow pieces of section on top, C, just threading the wire between them from the back. This will keep the wire taut so it will not unwind when let go of. Be very careful not to let go of the wire after loosening it until it is in the frame, or it will unwind and snarl hopelessly. Now the wire can be threaded through the frame without snarling as there is always a tension of the spool.



"Just Arrived and Glad We're Here."

ventilation slightly as the hatch progresses. Time and again we have noticed that when we had too much ventilation during the early part of the hatch, we would find a large percentage of partly developed germs at the first and second testings which died at various stages of development.

We have finally come to the conclusion that an embryo requires but very little oxygen in the early stages and when it really needs it is during the last part of the hatch. On account of this we restrict the ventilation very much the first week, increase it slightly the second week and still more the third.

New York.

F. W. KAZEMIER.

GETTING READY FOR THE HONEY FLOW.

Now is the time of year to be getting the hives and supers ready for next summer. Many a nice honey crop has been lost by not having the bucket right side up. If supplies have not been ordered as yet now is the time to do so, as a great many dealers will make quite a discount to land a good order at this time of year. Before ordering a list of supplies, be sure to write to a number of dealers for price lists and catalogs so as to know what the different dealers have to offer.

Great care should be taken in nailing the supplies up. A poor job of nailing will shorten the life of a hive more than

The foundation should be warmed before inserting as the wedges will not squeeze tight enough to hold it.

All hives ought to be gone over before the new swarms are hived in them, and the wedges forced into place very rigidly. Great care should also be taken with the starter in the super to see that it sticks well. I use a good foundation fastener for this purpose, also a combination sec-

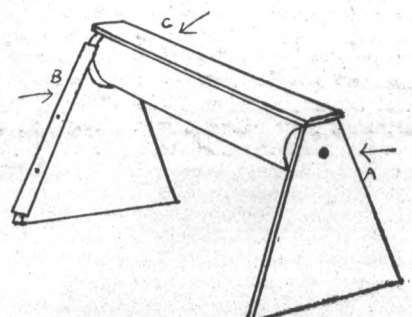


Figure 2.

tion press and fastener. The only difference in the machines is that the combination folds and presses it together, and at the same time fastens the foundation, while the other fastens the foundation only. Both machines work with a No. 1 lamp which heats a sliding plate. The plate is slid forward, the edge of the foundation touched to it, which melts it just a little. Then as the plate slides back the foundation drops into position, the melted

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X-RAY INCUBATOR COMPANY
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Brooders Have Central Heating Plant Too

edges hardens and sticks fast to the section. This can be done faster than it can be told.

The cover and bottom board should be well nailed also, and the whole hive given a good coat of paint. I would advise using white paint as it does not draw the heat as badly as some other colors.

Do this work now in the winter months and you will be glad you did when, next summer, the wife comes out to the hay field with the news that the bees are swarming. Otherwise both your bees and hay may suffer from your neglect to use your time to advantage when you had it to spare.

Gladwin Co.

H. L. SOPER.

SPROUTED OATS.

Just a few years ago we were attracted by advertisements of a cheap and wonderful chicken feed. Ten cents a bushel was the cost and for egg production it was a wonder. The secret of this feed was sold at a certain price and after a person "bit" he learned the process of sprouting oats so that one bushel would produce three of chicken feed. It is seldom that these "secrets" amount to anything but this one has now become general and an important factor in the consideration of feeds for chickens.

The directions given for sprouting were to soak the oats for about 24 hours and then put them in a shallow box, spreading them to about the depth of two inches. The box should have wire netting in place of a wooden bottom or the regular bottom should be bored full of holes so that the excess water can drain off. This box of oats should be put in a warm place and sprinkled with warm water about once a day. In about six days the oats would be ready for feeding.

What is an improvement over the original way of sprouting is the following: Do not soak the oats, put them in box about one-half inch deep. Have about four quarter-inch holes bored in bottom to let off excessive water. After wetting thoroughly stir the oats and then cover with a strip of burlap cloth which has been soaked in water. Keep the box in a moderate and even temperature and wet once a day with cold water. It is not necessary to use hot water as the oats sprout as quickly when cold water is used, which should be used freely.

One box started each day for six days will make ample supply for about 50 hens. Place the boxes on top of each other evenly so as to conserve the moisture.

There is no doubt as to the value of sprouted oats for chickens, both young and old. It furnishes a very good green food in the winter and at the same time one which is nourishing. The chickens are always "crazy" for it, which goes to show that it is something they need. This food should be used by every poultryman who wishes to get the best out of his chickens, unless he has a very good substitute.

For convenience and quicker results one of the commercial oat sprouters may be used. Where large amounts of oats have to be sprouted this machine is undoubtedly the best. The mere fact that there are a large number of these sprouters in the market is an indication of the importance of this feed.

ADVANTAGES OF HOPPER FEEDING.

The advantages of the hopper feeding are many, but the main one is that the laying hen always can find something to eat when she needs it to make eggs. A nearly balanced ration can be furnished in the hopper mash and in case the fowls should be forgotten they will have the hopper to go to. It also does away with a great deal of labor which is perhaps the most important factor for the diversified farmer.

It is doubtful whether it would be wisdom to rely entirely upon the hoppers alone to supply the fowls with sufficient food but in connection with hopper feeding the fowls need be fed whole grain. Hens need exercise and some feed thrown in the litter gives them something to work for. Some, however, depend upon hopper feeding altogether, and make a success of it.


From experience and observation we can highly recommend the hopper plan of feeding and believe if anyone would give it a trial they, too, would be enthusiastic in its practicability and economy of labor.

Ohio.

I. G. SHELLBARGER.


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Cultivator, Rake
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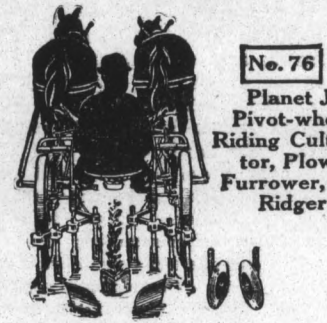
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Hill and
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Wheel Hoe, Cul-
tivator and
Plow



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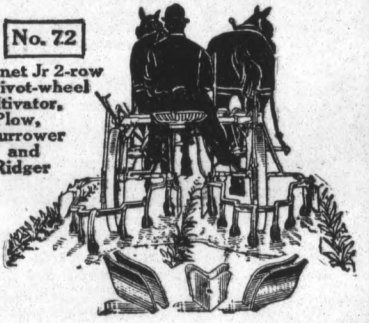
A wonderful implement in extensive cultivation of corn, potatoes, etc. Light in draft, simple and strong in construction and comfortable to ride upon. Works rows 28 to 44 inches, and cultivates crops until 5 feet high.

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Cultivates at one time two rows of potatoes, corn, beans, etc. in rows 28 to 44 inches apart. Works like a charm in check rows, crooked rows, and rows of irregular width. Can be equipped with roller-bearings, spring-trip standards, and discs.

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Additional poultry ads. on page 223.

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Practical Science.

THE ELEMENT OF UNCERTAINTY IN INTERPRETING FEEDING EXPERIMENTS.

BY FLOYD W. ROBESON.
Foreword.

The state experiment stations of the country devote considerable time to the study of rations for feeding farm animals, and to the investigation of certain desirable methods of feeding live stock for fattening purposes. As all of this data is put out for the guidance of the farmers and feeders throughout the country it is imperative that it should be of an exceptionally reliable nature. Many experiments are recorded in which conclusions are drawn and deductions made based on the results of a single series of experiments, under conditions by no means standard. We have pointed out repeatedly through these columns and in our experiment station work, the danger in drawing conclusions from insufficient data. Many experimentists have attempted to establish the value of a ration by a single series of experiments in which there were many unknown factors. In mathematics the problem becomes increasingly complicated according to the number of unknown factors introduced. It is not difficult to solve a problem in which there is only one unknown quantity, provided we have more than one equation, but it is difficult, and in fact, impossible, to solve a problem with two unknown quantities with only two equations. The same analogy holds in feeding experiments. It is pretty difficult to draw accurate conclusions regarding the value of any particular feed when we have a riot of feeding values in the ration. One cannot with any degree of certainty determine the relative merits of bran and sugar beet pulp, we may say, when there is not only the variation in the ration caused by the introduction of, on one hand, bran, and on the other hand of sugar beet pulp, but when there is also introduced a great variety in the physiological make-up of the animals under study.

In the bulletin abstracted by H. H. Mitchell, Assistant Chemist, and H. S. Grindley, Chief of Animal Chemistry, and which is published herewith, the Division of Animal Chemistry, University of Illinois, has accomplished, we think, untold good along these lines suggested. We print herewith an exact copy of that abstract and commend it to the very careful consideration of the readers of these columns.

The object of Bulletin No. 165 is, first, to present in as non-technical a manner as possible, the statistical method for the interpretation of experimental results and to indicate the value of this method to the ordinary feeding experiment; and, second, to examine critically the current methods of conducting such experiments in order to discover, if possible, wherein they may be improved.

The Feeding Experiment the Most Reliable Means of Information.

The simple feeding experiment is of great value in the solution of many problems of practical live stock raising. It offers the most direct means of attacking many of the problems confronting the live stock farmer. Our knowledge of the principles of animal nutrition is too incomplete to enable us to foretell with certainty, except when greatly dissimilar, which of two rations, for instance, will produce the more rapid or the more economical gains in weight for a particular kind of farm animal, no matter how clearly described or completely analyzed the rations may be. Actual experiment with those particular rations is generally essential to a satisfactory solution of the problem.

The plan of the ordinary feeding experiment is comparatively simple, but the results obtained are often of ambiguous significance, and the problem of interpreting them to the best advantage is in any case worthy of the most careful attention. The element of uncertainty involved in the interpretation of such experimental results rests in the impossibility of foretelling with certainty the precise results that would be obtained if the experiment were repeated as carefully as possible upon other similar animals, or even upon the same animals. The sources of this ambiguity are, first, the fact that animals kept under conditions

as nearly uniform as possible throughout the lot, will always exhibit unequal gains due to what may be termed individuality; and, second, the experimental conditions, such as weather conditions, that cannot be controlled.

In a Feeding Experiment there Should be, if Possible, but one Unknown Quantity.

One of the principal difficulties in the interpretation of a feeding experiment is the comparison of the gains in weight obtained for one lot of animals with the gains in weight obtained for another lot, the purpose of the comparison being to determine whether the difference in treatment to which the two lots of animals have deliberately been subjected, or the difference in their make-up, as the case may be, has been instrumental in securing a difference in their gaining abilities. If one can assure himself by proper methods of analysis that the relative position of the average gain of one lot with respect to the average gain of the second lot will remain essentially unaltered if the experiment be repeated on other similar animals under similar conditions, it follows that one is justified in attributing to the difference in make-up between the two lots, an influence on their gaining qualities. If one cannot so assure himself, there remains only the alternative conclusion that what differences in gains are observed between the two lots are due entirely to the individualities of the animals and to other uncontrolled factors.

Feeders Should Consider the Probable Error in Interpreting an Experiment.

In effecting this comparison it is not sufficient to confine one's attention to the average lot gains. An average is at best only an imperfect description of a series of experimental data, and when used for comparative purposes it is often extremely misleading. Therefore, for comparative purposes, an average should be used only in connection with some term defining its significance, that is, the deviations from the average that must be expected upon repetition of the experiment. The term most commonly used in defining the significance of an average is the probable error, the explanation of which is given in the original bulletin. The probable error of an average gain in weight is a value which, when added to and subtracted from the average itself, defines two limiting values such that the odds are even that a second experiment will give a correspondingly average gain falling between them. Concerning the method of its calculation, it is sufficient in this abstract to say that the magnitude of the probable error depends upon two factors: (1) the variation of gains within the lot of animals; and (2) the number of animals in the lot. The first factor is evidently the direct expression of the individualities of the animals and of the other uncontrolled conditions of the experiment.

If we add to and subtract from an average lot gain 3.17 times its probable error, there are obtained two limiting values such that the odds are 30 to 1 that a second experiment will give a corresponding average falling between them. Now odds of 30 to 1 represent a degree of confidence ordinarily assumed as equivalent to practical certainty, so that we may feel practically certain that a second experiment will give an average gain for a lot of animals of a specified description and under specified conditions, lying somewhere within an interval defined by adding to or subtracting from the average gain experimentally obtained, 3.17 times its probable error.

It is generally desired, however, to determine the significance not only of average lot gains, but also of differences between average lot gains. The probable error of such differences may be readily found from the probable errors of the two average gains, and it defines the significance of these differences in exactly the same manner as the probable error of an average gain defines the significance of that average.

(Continued next week.)

Stock All Sold.

R. C. Reed, Howell, Mich., who has been advertising Holstein-Friesian cattle, writes as follows:

"Stock all sold and correspondence swamps me. Please discontinue my advertising."

Veterinary.

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

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Fibrous Tumor.—I have a cow that is troubled with a sort of malignant elbow tumor. I cut it off with a string, wound healed, but it seems to persist in growing and at one time it broke open and has remained raw ever since. The healing remedies I have used fail to do their work. A. M. C., Lexington, Mich.—Apply one part iodiform and nine parts powdered alum twice a day, but I am not sure that you will be able to effect a cure without having the entire bunch cut out.

Drops of Blood in Milk.—We have a young heifer giving milk for the first time; she seems to be perfectly healthy and gives a nice mess of rich milk, but occasionally there will be little clots of blood about as large as a kernel of wheat, sometimes smaller, to be found in strainer. Then again, it can be only noticed in the separator bowl. There is a small kernel in one of her teats and we have given saltwater, which seems to help, but not stop it. Her mother is the best cow we have and if there is anything you can suggest, will be pleased to see the answer in veterinary column. L. B. B., Ortonville, Mich.—Increase her bedding, milk her as gently as possible and give her a teaspoonful of powdered nitrate of potash and two tablespoonfuls of bicarbonate of soda at a dose in feed three times a day.

Bruised Neck.—Cow ten years old, due to freshen soon, that had a bunch come on her neck, back of the angle of jaw bone about the size of a broom handle, no soreness, and bunch is moveable and not fastened to the jaw bone. This swelling has been there for the past three weeks and I am unable to figure out what caused it. She has been tied in stanchion since fall, but I have thought she stood fairly quiet. She has also been in yard with the colts and may perhaps have been kicked. I am anxious to know if her milk is fit for food. Have had her doctored by our local Vet., who applied blister and followed this treatment with iodine, without apparent good results. F. D. S., Milford, Mich.—Apply one part iodine and ten parts lard to bunch every day. I am inclined to believe that she may have injured neck while in stanchion. Her milk is all right.

Nodular Disease.—I am an interested reader of your paper and derive much benefit by reading veterinary column, but have failed to find a similar case to mine treated. Last week I butchered a sheep that was fat and felt fine before slaughtering, but when opened I found a great many little bunches on the intestines. I have been feeding one feed of bean pods daily, and clover hay which is none too well cured, for their other feeds. They are also grained and well salted. Now I would like to know if improper feeding caused these bunches. E. B. S., Woodville, Mich.—This is a parasitic bowel ailment, quite prevalent in this country and when in the advanced stage little can be done for them. Peek into a slaughtering establishment and you will find the bowels of a great many sheep diseased that were apparently perfectly healthy, with quite a number of similar nodules on their bowels. Your other sheep may have a few, but not enough to harm them. Give each of them 10 grs. of powdered sulphate iron, and 30 grs. of salt at a dose in feed twice a day. The meat of such sheep can be used with safety.

Stringhalt in Both Hind Legs.—I have a colt three years old that shows stringhalt in both hind legs, after he takes a few steps he seems to travel in a normal manner, but when standing still jerks them up occasionally. Can anything be done for this by the application of drugs or an operation? W. F., Byron Center, Mich.—In a case like this, I usually remove an inch and a half or two inches of the peroneal tendon on the lower and outer side of hock joint and in a majority of mild cases it is successful. By using cocaine the operation can be performed handily and quickly with him standing on his feet. Drugs given or applied to such cases seldom give satisfactory results; therefore I either advise you to leave him alone or have him operated on by a competent veterinarian.

Fistula of Withers.—I have a horse that has fistula of withers, blistered bunch several times, then it opened; since then have applied peroxide hydrogen, but the case grows no better. P. R. D., Berlin, Mich.—After you apply peroxide hydrogen, inject one part bichloride mercury and 250 parts water twice daily. Your Vet. should give poly-valent bacterin treatment.

Indigestion—Mare Never Lies Down.—I have a 14-year-old mare that never lies down. She is very much out of condition; had teeth floated and she eats all the feed I put before her. E. H., Fenton, Mich.—Give her 1 dr. ground nux vomica, a teaspoonful of powdered sulphate of iron and ½ oz. ground gentian at a dose in feed three times daily.

Sold 17 Bulls.

W. W. Knapp, Howell, Mich., breeder of high-class Shorthorn cattle, under date of Feb. 9, writes: "I am all sold out of bulls. Have sold 17 this winter."

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COMPLETE DISPERSION SALE

HOLSTEIN CATTLE

TUESDAY MARCH 3d, 1914, AT 1 P. M.

Sale will be held at the farm 1 mile North and 1 mile East of the Village of Howell, Michigan. Owing to the recent death of my wife I have decided to offer my entire herd of Registered Holstein Cattle at Public Sale. They are a fine lot of individuals and are nicely bred. Several of the cows have good A. R. O. records. The herd consists of 12 females, among them being a granddaughter of Pontiac Korndyke, and 8 males including my 2-year-old herd bull Oakdale Longfield King 92902 whose dam has an official record of 30.59 lbs. butter in 7 days, 124.19 lbs. in 30 days. All females of suitable age will be bred to him. Howell is easily reached from North and South by the Ann Arbor R. R. and from East and West by the Pere Marquette R. R. Send for catalogue.

ALFRED ROSSINGTON, Howell, Mich.

E. H. STILES, Auctioneer.

Poland China Bred Sow Sale

February 28th, 1914,
I Will Sell at PUBLIC AUCTION

At the Walnut Brook Farm.
40 bred Sows and Gilts, 5 spring, 4 July and 8 Oct. broods. Free delivery from Augusta. Write for Catalog.

W. J. HAGELSHAW, Augusta Mich.

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CHOICE S. C. BLACK ORPINGTON COCKERELS and eggs for sale. Prices reasonable. J. H. MILLER, 2133 4th St., Bay City, Michigan.

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B. P. Rocks, R. I. Beds, and S. O. W. Leghorn eggs for sale. 15 for \$1.25 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

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40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog.

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BREEDERS' DIRECTORY.

CATTLE.

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We have on hand several choice pure-bred Angus bull calves which can be sold for immediate delivery. These calves are sired by Louis of Viewpoint, a Grand Son of Lucy's Prince, the International Grand Champion bull for three years in succession. We also have for sale a few choice heifers from this herd bull. Will make a price on Louis of Viewpoint as some of his heifers are old enough to breed. Address

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AYRSHIRES—One of the foremost dairy breeds. Bull calves for sale. Write for description. Michigan School of the Deaf, Flint, Mich.

Guernseys—Four-year-old bull, A. R. Breeding. Three pure-bred heifers. Two high grade heifers. Two bull calves. G. A. Wigent, Watervliet, Mich.

REGISTERED GUERNSEY BULL CALVES FOR SALE. 8 to 10 months old. Glenwood Farm, Geo. W. REEVES, R. 2, Grand Rapids, Michigan.

Registered Holsteins—Beautiful grandson of Pietertje Hengerveld's Count DeKol, out of 20 lb. granddaughter of Hengerveld DeKol. \$125 delivered. HOBART W. FAY, Mason, Michigan.

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Sired by one of the best bulls of America. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

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HOLSTEIN FRIESIAN CATTLE BREEDERS of high record cows. Young bulls at farmers prices. JONES & LUTZ, Oak Grove, Michigan.

BULL CALVES—Sired by Albina Bonte Butter Boy No. 9324 whose dam as a Jr. 4 Yr. old has 7 day A. R. O. record Milk 604.8 lbs. Butter 27.03 lbs. W. B. READER, Howell, Michigan.

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\$500 Buys two choice registered Holstein heifers 2 and 3 yr. old, both fresh soon, calves contracted at \$100 each if heifers. B. B. Reavey, Akron, Mich.

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Our prices will be higher after March 1st.
Stock Guaranteed as represented.

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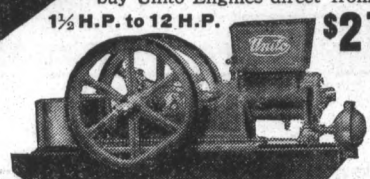
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