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Developing Dairy Quality in Cattle.

THAT our domestic animals have been plastic material in the hands of skillful breeders who have molded them into special purpose types with marvelous efficiency for the purpose in view, is attested by the economic results attained along many lines by the pure-bred herds and flocks of this and other countries. In no other line has this been more apparent than in the development of high efficiency in the special-purpose dairy breeds of cattle.

Our breeders have taken the material which came to them as a result of many generations of pure breeding and selection in other countries and have developed strains and individuals in these several breeds with phenomenal records in dairy performance. In fact, performance has been made the basis for the acceptance of animals in the advanced registry which has been adopted during recent years by the patrons of the leading special purpose dairy breeds of cattle, with the result that today the thousand-pound butter cow is no longer a rarity, while the requirements for admission to this inner circle of bovine royalty includes a degree of efficiency which in time will become an inherent characteristic of the progeny of the increasing proportion of individuals in these special purpose breeds that measure up to the requirements, since such a standard of efficiency contemplates the constant elimination of the unfit.

Thus the patrons of the leading special purpose dairy breeds of cattle are accomplishing a great work in improving the dairy quality of their cattle, notwithstanding the fact that their average quality is already very high as compared with the average quality of the material with which the average dairyman has to work. And their example should be emulated by every man who keeps cows, whether he makes a specialty of dairying or whether it is but one of several departments of production upon his farm.

Very many examples of this rapid improvement of dairy quality as evidenced by the almost phenomenal production of cows of the special purpose dairy breeds might be cited, but this is not necessary. Such examples are before the common farmers and dairymen of the state through object lessons in almost every community. Hence it would better serve our purpose of encouraging the rank and file of Michigan dairymen to cite what has been done toward improving dairy

quality in common stock and in breeds which have been for the most part developed along other lines of production.

Statistics show that of the total of our dairy cattle only about two per cent are included in the pure-bred cows of special purpose dairy breeds, and eight per cent are high grades, the other 90 per cent being of common stock and of a nondescript character. It is for the purpose of holding out some hope to the owners of these 90 per cent of common cattle that we cite these examples of what has been done with both common stock and pure-bred stock, which has been largely developed along other than dairy lines.

Perhaps one of the most striking examples of the development of common

concerning the recently recognized breed of cattle called Columbian, possibly a brief account of the breed will be welcomed by other farmers and breeders, generally. Until recently the department had little more authentic information on this breed, than the inquirers had—if indeed, as much. A short time since the writer made a trip into the locality of the breed's origin, to which territory its breeding is still largely confined. I inspected herds of the breed, observed their characteristics, yields and traits and talked with the farmers and breeders who are keeping herds of this breed, and learned the history of the breed's origin and development.

As already implied, the Columbians

milk and of the heaviest cream-rising quality. So much for the breed's early ancestry.

"Certainly the Columbians of today are pronouncedly a dairy breed and of the butter-producing sub-division of dairy cattle, their breeding for years back having been solely with an eye to increasing their butter yield. Such records of milk-yields and butter-yields and butter-fat tests as have been kept (all such latter are within the last few years) seem to bear out the claims made by the breed's admirers that they are large milk and butter producers.

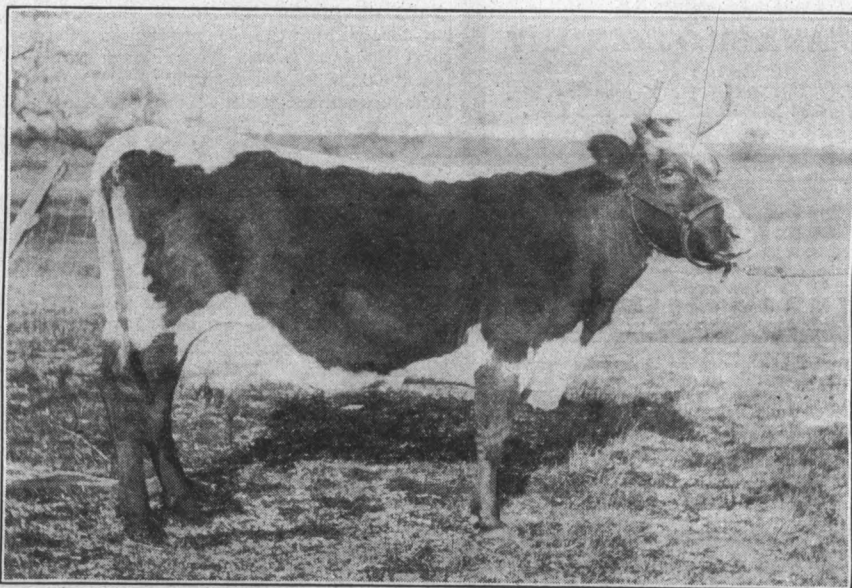
"The Columbians are a medium-size animal, cows weighing about 900 pounds—bulls heavier according. They are deep and wide of barrel, rather short and slim in legs. Their hind legs are generally rather long in proportion from hock to hip. The head is clean-cut and small, with slim, upturned horns and clear, bright eyes—the eye that invariably goes with animals having a high degree of nervous energy. There is something of an Ayrshire-like appearance in the general set-up of the animals of this breed, particularly about the head—its shape, placement and "expression." It seems a reasonable deduction that Ayrshire blood contributed largely in the making of the remote antecedents of the present-day Columbians, probably away back in the latter end of the eighteenth century—or earlier.

"To the casual observer the breed's odd markings probably seem its most distinctive characteristic; however, the breeders claim that this marking has always been of but secondary consideration—secondary to butter-production—in governing the line of breeding followed and the selection of the calves to be reared. Nevertheless, I found the markings to be very uniform, in the main, in all the herds I looked over, though there was some variance in the body color—scarlet-red, bay-red and brindle. Their markings are best described in the Columbian herdbook, from which I will quote:

"Color, red and white; markings, head, red; neck and body, red; back, white from point of shoulder to and including tail; udder and belly forward to brisket, white; legs, red with white band about upper shank where it joins the body."

Development of Breed is Recent.

"It was not until about 1870 that these 'lineback' animals of the Central New York dairymen-farmers began to be se-



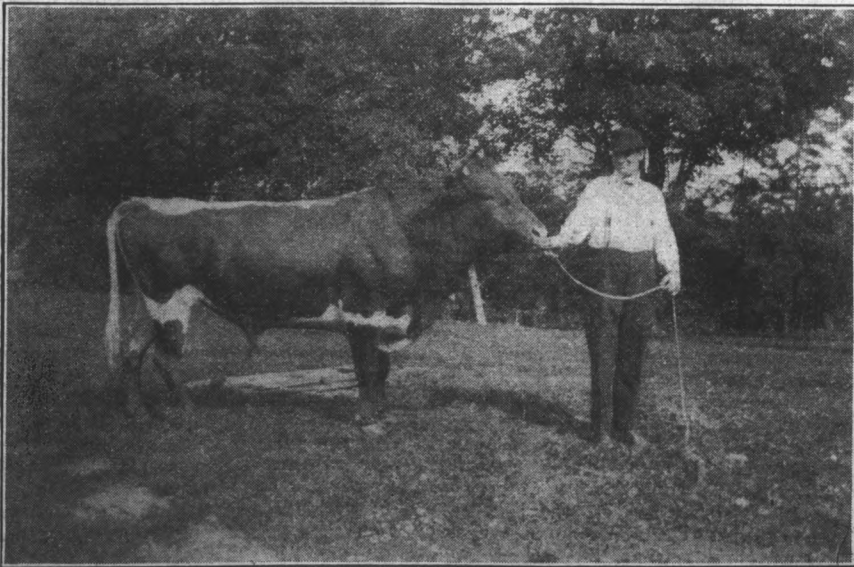
Columbian Cow, Typical of this Recently Developed Dairy Breed.

stock by the simple process of selection is found in what is known as the Columbian cattle which have risen to the dignity of a pure breed in this country, the first example of such development in the United States. Regarding this new breed which has been styled the "Columbian," Mr. Joel Stanwood, an agent of the Department of Agriculture, says:

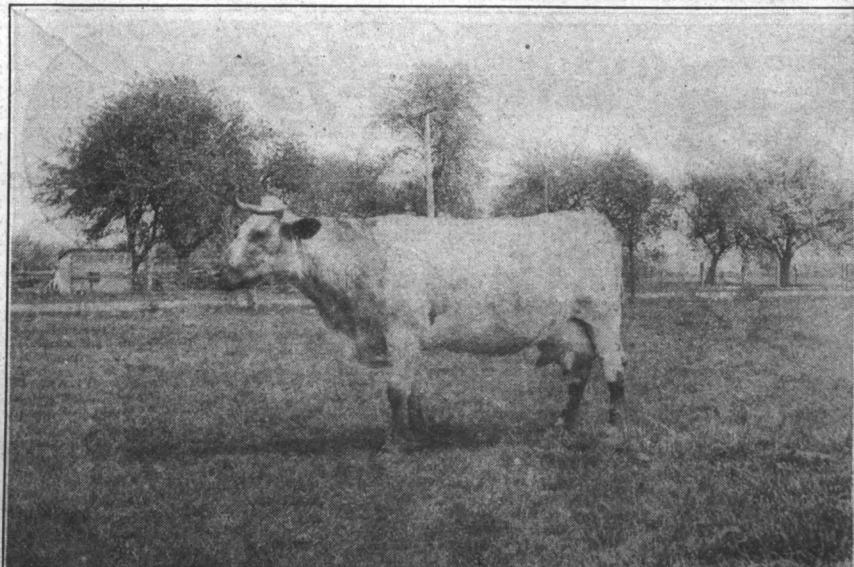
Characteristics of the Columbian Cattle.

"In view of the evident interest—or curiosity—manifested by inquiries addressed to the Agricultural Department,

are an American breed being the direct and selected descendants of common cattle brought into New York state by the early settlers. Back of this their origin is unknown. Many of these early nineteenth century cattle, though having different body color, had a white stripe along the back with some white about the upper shank and along the belly, and became known as "linebacks." And it is a notable legend that these oddly-marked cows were invariably the best producers in the herds—gave the largest flow of



Columbian Bull, Head of Mr. Anson T. Gregory's New York Herd.



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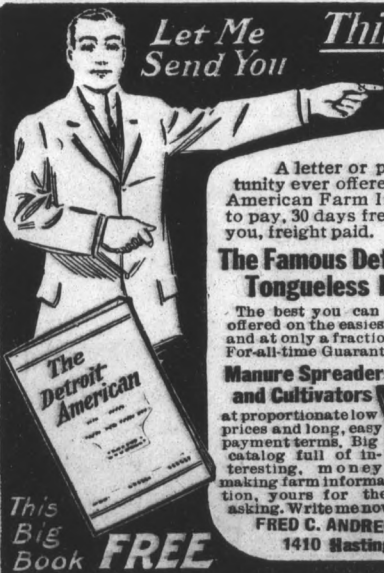
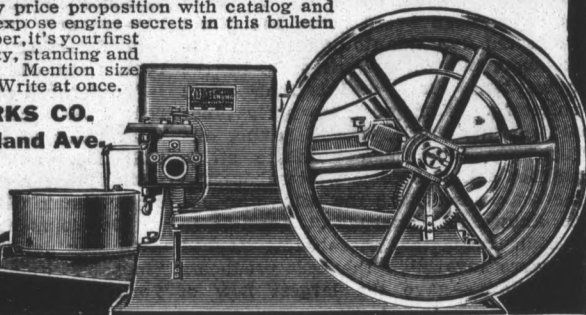
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lected and bred with any real method. At this period Mr. Anson T. Gregory, of Otsego county, New York, having come to realize the superiority of the 'lineback' strain over the other common stock in his herd, began to build up an entire herd of the strain, and encouraged others to do the same. But, apparently, the other farmer-breeders did not breed with the care and persistence, (or perhaps had not as clear an idea of just what they were striving for), as did Mr. Gregory, for the Gregory sub-strain of the 'linebacks' became recognized as the heaviest-milking and butter-producing sub-strain of this particular strain of common stock. So this early 'lineback' herd of Anson Gregory's may be fairly considered the 'foundation-stock' of the Columbian breed and Mr. Gregory credited as being the developer of the breed, if not exactly its originator. It would seem that it was not Mr. Gregory's aim to originate a breed, but instead simply to further develop the exceptional butter-producing traits of the stock constituting his herd. There was no straining after 'lineback' markings, I am told, but this marking was a characteristic of this butter-producing strain of stock that perpetuated itself, (like the fifth toe in Dorking fowls), and at first was taken because it went along, and finally became recognized as an indication of 'quality' blood in the animal.

"At this time the breed is kept as the business-herds of a number of dairymen-farmers in south central New York, two of the foremost of the breed's admirers being sons of Anson Gregory, the founder.

"From what I saw of this breed I am compelled to credit them as being heavy milkers and butter-producers, rivaling the Jersey in total output, yet having the vigorous digestive system of the Holstein and much of the rustling ability of the Ayrshire. I consider them a promising breed for the dairy-farmer—especially the butter-making dairy-farmer whose farm is better adapted to producing pasture and roughage crops rather than grains—to consider in the future."

Encouragement for the Owner of Common Cows.

This is an example of the development of common stock after years of natural selection by the skill of the breeder who is a master of the art. It is but a repetition of what has been done with other breeds in other countries and shows that the same thing can be done right at home. It does not follow, however that this is the logical course of procedure for the Michigan dairyman who has a herd of common cows. Quite the contrary, in fact. There is no call for the introduction of new breeds of dairy cattle in our state. We have a great center of production of Holstein-Friesian cattle of the very best families, and many herds of Jerseys and Guernseys of the right sort, as well as some Ayrshires. Very many of our common cows are grades of these breeds, or at least carry the blood of some of them, and pure-bred sires of quality from these breeds should be used in improving the dairy quality of our cattle in most instances. And this improvement should be carried on on a community basis, which has proven so successful in many Michigan dairy communities through the medium of breeders' associations which have been organized for the purpose of purchasing and keeping pure-bred sires of some one of these breeds for the improvement of the dairy quality of the members' herds and the community in general. The introduction of more breeds and the further mixing of the blood of the common cows of the state would retard, rather than promote development in average dairy quality, and the improvement of common stock by selection alone is a slow and profitless task, hence the above conclusions. We have the material right at hand for the accomplishment of this needed work if intelligently used.

But there are cases in which this course may not be the most desirable. Michigan was formerly a state of considerable importance in the breeding of pure-bred Shorthorn cattle. There are still many pure-bred herds of this breed in the state and with the revival of the beef producing industry these cattle, and the high grades carrying a preponderance of Shorthorn blood, are good material for many farmers and small dairymen to work with in increasing the profits of their business. Of late years the patrons of this breed have made long strides in rehabilitating the dairy quality of cattle of the breed and where a dual purpose animal best suits the needs of the small dairy farmer perhaps no better material is at hand for the accomplishment of

their purpose. This tendency toward the development of this useful breed of cattle along dairy lines is well illustrated in the paper prepared by Mr. B. O. Cowan, and read before the recent meeting of the Michigan Shorthorn Breeders' Association, as follows:

Shorthorns as Milk Producers.

"From the very origin of the breed, Shorthorns have had two qualities to commend them to the favorable consideration of farmers and stock men, and it is this dual capacity for beef and milk production that has made them so popular. As beef producers they are known over the civilized world, but their dairy qualities, though excellent when properly developed, are not so well recognized and so need advertising and further development.

"The early history of the breed furnishes many instances of cows that were great milk producers. One of the earliest breeders to develop milk production in his herd was Jonas Whitaker, and in consequence his cows were known all over England for their excellent dairy qualities, and at the same time he had a good trade in beef bulls with other herds in the Kingdom. Sir Charles Knightley developed a tribe known as Fawsley Fillpails that did much to establish the fame of Shorthorn cows as excellent at the pail. The herd of Thos. Bates was bred for beef form and soon became the fountain head of bulls for both English and American herds, yet the milking qualities of this herd were so carefully cultivated that the cows had a reputation as milk producers that was second only to that of their beef quality. As a result of this intelligent treatment cows in Mr. Bates' herd gave from 24 to 34 quarts of milk per day, and their descendants proved good milkers for several generations. In consequence of this the opinion gained currency that only cows of Bates blood are reliable as milk producers, and this belief is pretty generally prevalent at the present time. While this opinion is founded on fact, there are notable exceptions. Even Amos Cruickshank, who did more than any man of his time to develop the fleshing quality of his cows, and in that marvelous herd of beef cattle were many matrons quite good at the pail.

"Numerous instances can be given of excellent milkers among Scotch cows of other herds, both in Great Britain and America. The writer bred Shorthorns for 25 years and had some good milk cows in the herd, but the best one was a twin daughter of an imported Scotch cow. This cow was a winner in the beef rings when she was young and when she became a matron she would give two to three gallons of milk per day more than her calf could take when it was four to eight weeks old.

"A notable example of a good dairy cow of this line of breeding was recently given by English papers. The Shorthorn steer, Golden Arrow, was champion at the Smithfield and Birmingham shows. His dam was the Cruickshank cow, Beatrice 22d, also dam of the noted bull, Bandmaster, winner of first prize at the Royal. Beatrice 22d sold when nine years old for 220 guineas (\$1,100) and at the time of sale her daily milk yield was 57 pounds.

"At the present day the large herds that supply the city of London with milk and butter are composed largely, and in some cases exclusively, of Shorthorn cows, either pure-bred or high grades. To some extent this is also true in New York and New England. The dairy qualities of English Shorthorn cows have been more widely advertised than those of American herds, and in consequence it is generally believed that the former are superior to the latter. But it is the expressed opinion of Mr. F. W. Harding, who has visited and carefully studied nearly all herds in Great Britain, that the leading dairy Shorthorn herds of Pennsylvania and New York are better than those of England. But as general statements unsupported by specific evidence are apt to be regarded as "glittering generalities," it will be necessary to give a few of the available records.

"Pansy of Stanton, at the Michigan Agricultural College, produced 10,058 pounds of milk and 456.5 pounds of butter in one year and during the same time gained 324 pounds in weight. At the Iowa State College, Ames, Iowa, College Belle 2d gave 7,554 pounds of milk in ten months, showing 4.3 per cent butter-fat; and College Moore produced 517 pounds of butter in one year. Florence Airdrie 6th, owned by Nebraska Agricultural College, produced 10,438 pounds of milk and 494 (Continued on page 121).

ICE ON THE FARM.

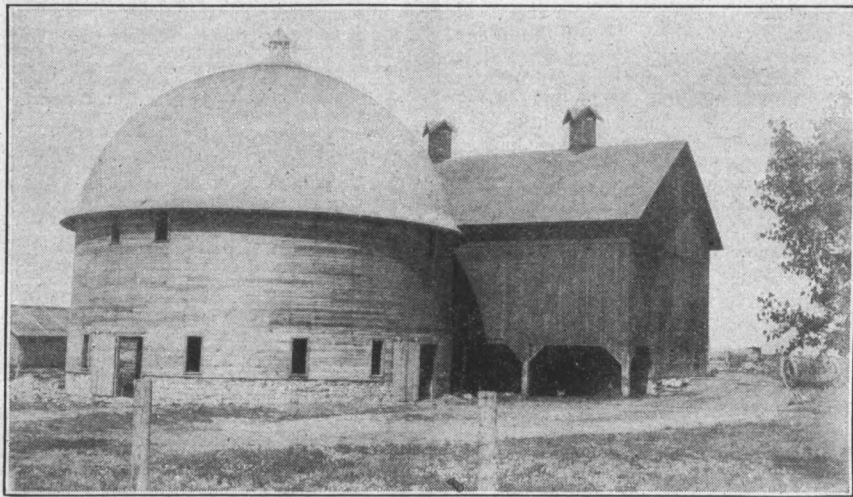
A supply of ice during the summer months is both a luxury and a necessity. In these days of keen competition it is made possible to maintain in the best condition various products destined for the market or for home consumption. For the keeping of meats, vegetables and fruits it is of incalculable value. It places within easy reach of the dairyman a means of stopping one of the leaks in his business. By preventing an occasional return of a sour or over-ripe can of milk the monthly income will be augmented; besides maintaining a corresponding sweetness of disposition in the "boss."

The first requisite for an ice supply is a suitable place for storage. It need not be expensive; in fact, the whole cost of building and harvesting the ice will be a mere bagatelle in comparison with the benefits to be derived. Queer places are sometimes utilized for this purpose, such as in the silo, sheds, barn-mows and under gangways. For convenience, however, it is better that a special structure be erected where the contents may be gotten at with the minimum of trouble. Choose the site on a slight rise of ground so that the drainage will be good. To support the framework forming the walls

Harvesting ice is not a one-man job. Two farmers can work together to much better advantage. In sawing out the blocks try and have the sides exactly straight up and down, as they will pack closer and consequently keep better. It is a good plan to have a lot of blocks cut out ahead, and employ a small derrick to elevate them into the sleigh box. After one man with the tongs fastens onto a block, the other operating the derrick quickly and easily lifts it into the sleigh, and so on, till the load is complete.

Filling in the ice house requires some little care. By having the first layer of blocks perfectly level, each of the others will be so as they go up. Pack all the blocks as closely as possible, filling all crevices with broken ice or snow, well rammed. Between the ice and the walls there should be a space about one foot wide. This should be filled in and well packed with perfectly dry sawdust. When the full supply of ice is in place the top should be covered at least a foot deep with the same material.

Plenty of ventilation will contribute very largely to the keeping qualities of the stored ice. If this point is overlooked, it is very probable that one-half of it may have disappeared when the time comes to begin taking it out. Where



Round Type of Dairy Barn on the Farm of Wm. Mills, of Isabella County.

This barn, shown in process of construction, has a silo 13x50 ft. in center, and accommodates 33 head of cattle facing alley around silo. The barn is 54 ft. in diameter and is built without timbers. The studding is 2x6-in. material and the joists 2x8. The dome roof is of the self-supporting type and no braces of any kind are used on the interior. Mr. Mills states that he got much help in planning this building from the Illinois bulletin on round barns, but that he never saw or knew of a dome-roof of this type being used on a barn. This is apparently an innovation in barn building.

a number of posts six or eight inches in diameter may be sunk into the ground. Three posts on each side will be sufficient for a building 12 feet square, and in height should extend about eight feet. This will afford space for a solid block of ice 10x10x6 feet or approximately 15 tons. Of course, the dimensions may be modified to suit different conditions, but the amount indicated will be ample on the average farm. The walls should be of two-inch plank, nailed on the inside of the posts, in order to resist effectually any pressure from the interior. However, if the blocks of ice are properly packed there should be no danger of sliding outward. If plank are not available in an emergency, inch boards answer the purpose very well. I used such last winter for this purpose. They will need a few more nails this winter, but otherwise are all right. Plank, though, will be more permanent and need less repairing. An opening for entrance should be left and a door constructed of short pieces of plank or boards kept in place on the inside by the posts. As the ice is used these may be taken down one after the other. Any style of good light roof will do; the shanty fashion being perhaps the cheapest. A depth of about 12 inches of the floor space should be filled in with loose stones or bricks. Besides improving the drainage facilities, they form an air space that breaks the connection between the lower layers of ice and the ground, thus preventing considerable waste from melting at the bottom. This material covered a foot deep with sawdust, the house is ready for storing the ice.

The tools required for cutting the ice are simple and inexpensive. A good sharp axe, ice saw, tongs and spud comprise the necessary outfit. The last named, which is a sharp, broad piece of steel three inches wide and half an inch thick, is used for splitting the cross sections, saving a lot of labor in sawing. This work should be done directly after a spell of cold weather, as the ice is then sure to be sound and solid. "Rotten" ice is filled with air spaces which greatly decrease its lasting qualities.

the ventilation is good and other things being equal, no difficulty will be experienced in keeping a supply until fall.

Canada. J. HUGH MCKENNEY.

QUESTIONS ABOUT TILE DRAINING.

What is the best size tile to use for branches, three or four-inch? What is the best size to use for main ditch? How far apart should they be laid in muck that is eight feet deep, also how deep? Will tile drain a wider area than an open ditch? How far will they draw the water from the ends? Is a stretch of 100 rods just as good as one of 400 rods? Will tile that are two feet deep draw the water just as far as if they were laid deeper? What is the least fall one dare have?

Tuscola Co. SUBSCRIBER, It is not necessary to use four-inch tile for laterals, three-inch are large enough where no other drain flows into it. If, however, you have a large lateral of five or six inches and then want a branch of four inches and have three inch branches run into this, of course there would be a lateral in a way that would need to be larger than three inches, but in this case what is a lateral to one ditch becomes a main in another system.

In heavy clay, tile ought to be laid at least every four rods. In muck land perhaps you could put them a little further apart because water circulates through muck land more readily than it does through clay. Tile drain will drain no farther than an open drain. The only reason for water going into a tile drain is because water runs down hill to its outlet. In one instance it is a tile and in another instance it is an open ditch. Consequently the deeper the ditch the farther apart you can lay them and in this muck land I would not think of putting in tile drains shallower than three feet. Of course, if you have a very long ditch even with no laterals it may be best to have larger than three-inch tile at the mouth of it. For instance, if your ditch is a hundred rods long and will drain quite a wide strip it might be better to have the first 50 rods of four-inch tile and then three-inch tile. Tile drains will work successfully with a fall of two inches to each 100 feet if they are prop-

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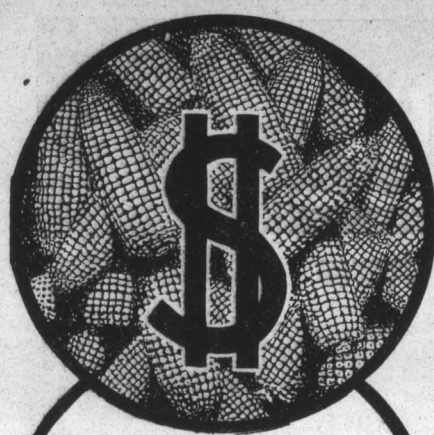
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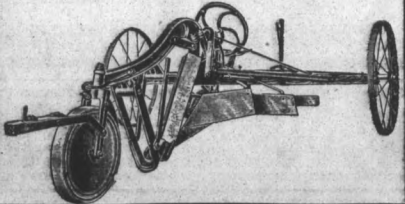
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erly laid. But there can be no guess-
work in making your grade line where
you have no more fall than this. More
fall is better.

COLON C. LILLIE.

FARM NOTES.

Stable Manure vs. Fertilizer.

I am a subscriber of your paper, and
would like your advice as to whether it
would be better to pay 50c per load for
stable manure to put on sandy soil that
has been run, or whether it would be
better to buy fertilizer? I wanted to get
it in shape for a crop of corn this year.

Allegan Co.

L. E. D.

In this inquiry an important economic
factor was not stated. That is the dis-
tance which it would be necessary to
draw this manure which can be secured
for 50 cents per load. This, however, is
not as important a factor at this season
of the year, provided the manure is
available and can be drawn at this time.
Undoubtedly where good stable manure
can be secured at 50 cents a load it is
the most economic means of securing
both plant food and humus to apply to
the poor soil, which could be used. The
vegetable matter which would be added
and the bacterial activity which would
be promoted by the application of liberal
quantities of stable manure would both
be factors which could not be secured by
the use of commercial fertilizer alone.

It would, however, in the writer's opin-
ion, be profitable to give a light dressing
of commercial fertilizer in addition to the
stable manure, as by using a formula
containing a liberal percentage of min-
eral element of plant growth these would
be supplied and in available form and a
better balanced "ration" thus provided
for the ensuing corn crop, and it is just
as important that proper balance be
maintained between the plant food in the
soil as between the elements of nutrition
in the ration fed to our animals, since a
deficiency in any one of the essential ele-
ments of plant nutrition will be a limit-
ing factor in production.

In the writer's opinion a liberal appli-
cation of stable manure, if it can be ap-
plied without too much expense in draw-
ing, supplemented by a dressing of four
or five hundred pounds of standard grain
fertilizer would be far better so far as
results are concerned than the use of
either alone, and more apt to pay out in
the succeeding corn crop.

Why Did the Alfalfa Fail?

There has been much written and many
questions answered about alfalfa as to
how to get a catch, etc., so that we have,
many of us, got it "by heart" almost, but
there is one phase of its success or fail-
ure that is much of a puzzle to me yet,
although I have succeeded fairly well
with three plots of alfalfa. My neighbor
sowed a small plot of ground to alfalfa,
as I thought, an ideal ground for alfalfa,
a strong, sandy, gravelly loam that had
never been cropped much, a part of an
old dooryard and chipyard, land that
could be plowed next day after a heavy
rain. He sowed it without inoculation
and got a firm catch and the plants came
on finely and made a growth of about
eight or ten inches the first season and
seemed to do well as long as the dry
weather continued. After the rainy sea-
son commenced it began to look sickly
and go back, and here is the puzzle, as
this land is high and never any water
stands on its surface, no subsoil and
about 16 feet to the water level. We had
seen it stated in "The Farmer" that many
times when alfalfa did not do well it was
for the want of lime in the soil so there
was sown a liberal supply of limestone
the next spring but this did not seem to
revive it. The plants did not seem to go
out, but did not thrive and it was last
season turned into a temporary pasture.
We are told by a man with some experi-
ence with alfalfa that undoubtedly if
this plot was sown again it would be a
success, which will probably be tried.
Can you give me a solution of the failure
of this plot of alfalfa?

Allegan Co.

H. H. GOODRICH.

So many factors enter into this prob-
lem that it is impossible to be certain as
to the difficulty. It would certainly ap-
pear that this was ideal ground for al-
falfa and the trouble may be lack of the
presence of nitrifying bacteria in the soil,
although it does not follow that inocula-
tion would have been successful without
the use of lime, nor is it surprising in
view of experience upon this point that
the application of lime the following
spring did not produce immediate results.

The writer has experimented for sev-
eral years upon similar soil, except that
it was probably not so rich in plant food
as this particular piece. Some four years
ago one plot was prepared for alfalfa by
thorough fertilization and the preparation
of a fine seed bed and at the time of
sowing, to make sure of thorough inocu-
lation, soil was sown from another alfalfa
field on the farm where the nodules were
well developed on the roots and the seed
was also inoculated with the pure cul-
ture. Yet the results were very disap-
pointing as only scattered patches in the

plot were found to be inoculated and the
stand was consequently not successful.
The following spring lime was applied
and the ground was planted to potatoes.
It was again seeded to alfalfa in oats
following potatoes and a good even stand
was secured, notwithstanding a very dry
season. Due to this cause, however, it
did not get sufficient size to withstand
the severe winter which followed and
last year it was again manured heavily
and planted to corn, alfalfa being sowed
in the corn in July and a very fine stand
secured with thorough inoculation in all
parts of the field.

This experiment seemed to prove that
inoculation will not prove a success un-
less the soil is in a condition to be a fit
home for the bacteria and when this
condition was brought about by the ap-
plication of lime further seedings were
entirely successful.

Last spring the writer sowed a mix-
ture of alfalfa and alsike clover in oats
on a 14-acre field to which lime was ap-
plied when the land was prepared for
sowing. While a fairly good seeding was
secured all plants were not inoculated and
the alfalfa was much thinner than it
should have been from the amount of
seed sown when it went into the winter.
This and other similar experiences would
seem to prove that the effect of lime is
not immediate, especially where applied
in moderate quantities. These and other
experiences also support the argument that
where alfalfa is not a complete success
at the time of sowing at the first seed-
ing, it may be at the second, as the bac-
teria peculiar to the plant have time to
establish themselves in the soil. Then,
too, there is much in the seed which is
sown which may or may not be of a
hardy strain which will do well in our
climate.

The vigorous early growth of this al-
falfa may have been due to the unusual
amount of available plant food in the
soil and its later failure to a lack of
inoculation, which could, of course, be
determined by examination of the roots.
It certainly is not a cause for discourag-
ement, however, that this seeding did not
come up to expectations and the same
ground should certainly be seeded to al-
falfa again, as Michigan experiences all
point to the fact that when a soil is once
placed in a proper condition to grow this
legume it will succeed as well, if not bet-
ter, than the commonly grown varieties
of clover.

A FEW ARTICLES AT A BARGAIN PRICE.

Having discontinued the use of a free
premium with each subscription to The
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the subscription price we now offer to
our friends some of the premiums of
which we still have stock, at a bargain
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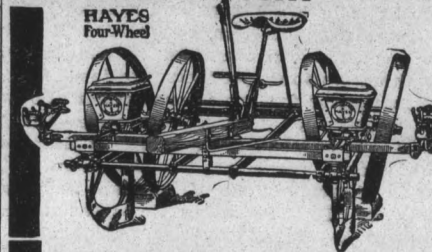
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Farmer for one year for 50 cents and the
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A little book of value to the farmer is
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It contains nearly a hundred articles on
roads, feeding stock, mixing paints, first
aid, poison antidotes, besides many ta-
bles of weights, measures and distances.
There is also a compendium of useful
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The HAYES Drop never fails. Simple,
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necessary. Increased yields soon pay for it.

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Runners set back between the wheels,
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HAYES Four - Wheels guarantee
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valuable Planting Facts. Write today, then
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Practical Science.

CEREAL BREAKFAST FOODS.

BY FLOYD W. ROBISON.

In the manufacture of the so-called breakfast foods, while the different breakfast foods have their individual characteristics the general process of manufacture is in the main the same. They have depended so far as their advertising matter indicates, in general, on the so-called predigestion of the starch.

Many People Cannot Assimilate Raw Starch.

There are a large number of people who seem to be unable to assimilate raw starches such as are found in wheat bread, for instance. If this bread is properly toasted, or thoroughly browned, much of this difficulty seems to be removed in many instances and it is this idea which probably first gave the clue to the pre-treatment of the cereal which finds voice in the modern breakfast food.

The common method of manufacturing a breakfast food is by the mixing of different proportions of wheat flour and malt flour—that is, barley which has been malted and ground to a flour. These two are mixed in the different proportions, and as in making bread, with a certain amount of yeast. The dough is then baked hard and the loaf cut in slices and dried in a reel oven and then granulated by running through a coarse mill. The method of grinding of this rather brittle product, it may be seen, will produce besides the coarse granular particles a considerable amount of fine flour. This is usually sold as a stock food.

The Starch is Changed to Sugar.

An analysis of the granular portion which is put in packages as a breakfast food will show a considerable portion of soluble carbohydrates; in other words, during the mixing of the malt with the flour, a larger or smaller percentage of the raw starch will have been converted into maltose, which is a sugar, and which is soluble in water. According to the amount of this conversion depends the degree of preparation of the breakfast food. There is no change, of merit, in any of the other compounds in the food except the starch. Usually breakfast foods are designed to be eaten without any further cooking and as they are primarily manufactured and advertised to eliminate difficulties in digestion in which the presence of raw starches in the diet are particularly objectionable, it is naturally expected that such breakfast foods should be entirely free, or approximately free, from raw or unconverted starch.

As a matter of fact, in our examination of some 48 different breakfast foods on the market in Michigan, we did not find a single one which did not contain as high as about 30 per cent of unconverted starches. The approximate percentage of total starch in wheat we may place at 60 per cent, so that if there were 30 per cent of unconverted starch, or raw starch, in a finished product, or breakfast food, then it will be apparent that approximately one-half of the original starch content had been changed during the process of manufacture.

Why Cereal Should be Well Cooked.

For individuals who cannot take raw starches into the system without suffering impairment of digestion, dieticians usually prescribe the thorough cooking of the cereal foods. For example, in the preparation of oatmeal as a breakfast porridge, it should be cooked for a very long period until the cellulose wall surrounding the starch granule has become thoroughly disrupted and the starch content allowed to flow out and in this manner become soluble at once in the digestive juices.

Our greatest argument against the substitution of prepared breakfast foods for such a food as well cooked oatmeal, is that, while a portion of the starch in the breakfast food has been converted beyond the stage of soluble starch and into maltose, a sugar, fully half, and in most instances, much more than half, of the starch remains entirely unacted upon, whereas in oatmeal if it is well prepared, practically all of the starch has been rendered soluble and in a condition which is easily acted upon by the digestive juices.

The difficulty in starch digestion does not seem to lie in the lack of power of the enzymes to convert starch into sugar, but in the fact that lack of thoroughness

in the cooking and preparation of the food precludes the possibility of the enzymes getting easy access to the starch.

Inadvisable to Call them Pre-digested.

So-called prepared breakfast foods are guaranteed to be thoroughly cooked and because of their pre-treatment are supposed to be in a condition in which the starch is completely exposed to enzyme activity and in part entirely converted. It will be apparent then, we think, that much mischief may be done through the supposition that such foods are peculiarly fitted for cases of faulty starch digestion, whereas as we have here tried to show they themselves fall short of the condition they were created to fulfill. We desire, therefore, that the reader should take note of this great fault in modern prepared breakfast foods which, as far as our knowledge extends, will cover all of the foods in this class. They have, however, disregarding this point, a very favorable place in the diet. This place is the place which entire wheat bread should fill.

In our previous discussions we have emphasized the peculiar deficiency which high-grade patent flour has, in the mineral and cellulose content.

Breakfast Foods Contain More Fibre and Minerals.

We have attempted to show why bread made from the entire wheat is superior in the diet, to bread made from high-grade patent flour. Cereal breakfast foods are made from the entire grain as a rule, and when so manufactured possesses distinct advantages in so far as the mineral and cellulose content are concerned. Especially is this true of the many flaked breakfast foods on the market. The general method of the preparation of the flaked breakfast foods is as follows: The cereal is treated in a moist atmosphere, either by cooking with steam or by allowing it to remain for a time in a moist warm atmosphere in such a way as to thoroughly soften the berry and permit of its expansion, when it is then tempered and passed through hot steel rolls whereby the berry is flattened out into a very thin flake. These soft flakes are then carried to a reel oven where they are baked to a crispness, in which condition they are packed into packages.

It will be seen that in this simple procedure the final product must have the exact composition of the original grain except that a portion of the starch may be changed slightly by the toasting or baking process, which it undergoes; but the mineral content and the cellulose content is approximately the same as that of the whole grain and therefore this feature renders the breakfast food of a distinct advantage. In addition to this feature undoubtedly a greater percentage of the starch is actually rendered soluble than is the case with ordinary bread, so that persons who are able to eat ordinary bread without a disturbance of digestion should be able to eat the flaked breakfast foods, without any discomfort and with the further knowledge that they are actually receiving the benefits of bread made from the entire grain.

Breakfast Foods Better for Healthy Persons than for Invalids.

We do not believe the ordinary cereal breakfast foods are desirable to introduce into the diet of an invalid suffering from faulty starch digestion but if they are used, they should be used by persons in health who are perfectly capable of digestion of raw starches and to our minds used in the diets of such persons they contribute a distinct advantage because of the cellulose or fiber and the mineral matter which they contribute.

CATALOG NOTICES.

Johnston Farm Machinery is fully illustrated and described in a 40-page art catalog published by the Johnston Harvester Co., of Batavia, N. Y. A copy of this catalog will be sent upon request to readers of the Michigan Farmer who write the above firm, mentioning this paper.

The 1913 Garden Book, published by German Nurseries & Seed House, Beatrice, Neb., is an illustrated catalog of 104 pages listing a full line of garden and flower seeds in addition to a large number of farm seed specialties offered by this firm.

Burpee's Annual for 1913, sent upon request by W. Atlee Burpee & Co., Philadelphia, Pa., is a 180-page catalog of vegetable and flower seeds for spring planting. It is profusely illustrated and contains several colored plates of new specialties. Write for this catalog, mentioning the Michigan Farmer.

The Big Crops Where they come from



EVERY little while, (perhaps this will be one) comes one of those really extra "good seasons" for crops,—rain, sunshine, temperature just right; and good seed and cultivation with plenty of manure result in bumper crops. There is not manure

enough to supply every crop on every farm. The fertilizers bought,—what if they fail when all other conditions were right? What a pity to have depended upon unavailable fertilizers in such a season! Growing crops must have plant food that is available for their needs. Bigger crops need more than smaller ones. Nature, wonderful as it is, never developed a large crop in a run out soil.

How to Grow Potatoes with A. A. C. Co. Fertilizers

"My plan of growing potatoes is to manure the year before I plant and grow any other crop I want to grow, and the next year I plant that ground for potatoes with fertilizer. I use a planter and apply not less than 600 pounds of fertilizer to the acre, in three foot drills. That with good cultivation, generally brings me a good crop. My experience in planting potatoes on manure is that the potatoes are scabby, and for that reason I do not use manure the same year I plant potatoes. Three years ago I manured a piece of ground containing six acres with about a thousand bushels of manure to the acre, that is, ten loads with one hundred bushels to the manure spreader. That year planted it to cabbage. The next year I plowed that ground in the Spring and seeded to early potatoes in May, and had 1,541 bushels off the piece. I plant a foot apart one way and three feet the other. The potato planter makes a furrow, marks the ground, distributes the fertilizer and covers the seed. On the crop I am telling you about I used 1,000 pounds of Potato Fertilizer to the acre." (Name furnished on application)

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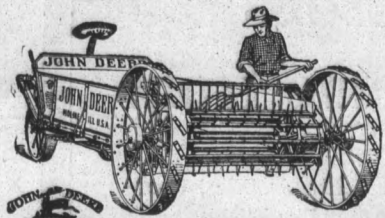


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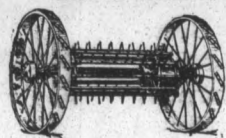
The Spreader with the Beater on the Axle



Take any manure spreader you have ever seen, remove all the clutches and chains, all the countershafts and stub axles, do away with all adjustments and mount the beater on the rear axle.

Rebuild the spreader so that the top of the box is only as high as your hips. Make it stronger. Remove some two hundred trouble-giving parts and throw them away. You will have some sort of an idea of what the John Deere Spreader, the Spreader with the Beater on the Axle, is like.

The Beater on the Axle



The beater and all its driving parts are mounted on the rear axle. This construction is patented. You cannot get it on any other spreader made.

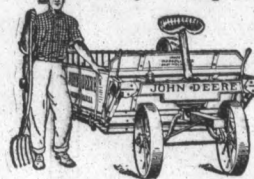
Power to drive the beater is taken from the rear axle through a planetary transmission (like that on automobiles). It is positive, runs in oil, and does not get out of order.

Few Working Parts

The John Deere Spreader is so simple that there are no adjustments. It has some two hundred less parts than the simplest spreader heretofore made.

There are no clutches to throw it into gear. The lever at the driver's right is moved back until the finger, or dog, engages a large stop at the rear of the machine. All the chains and adjustments have been done away with.

Only "Hip-High"



Easy to Load

Because the beater is mounted on the rear axle, it is only "hip-high" to the top of the box. Each forkful of manure is put just where it is needed. You can always see into the spreader.

Roller bearings, few working parts, the center of the load comparatively near the horses, and the weight distributed over four wheels, make the John Deere Spreader light draft.

Spreader Book Free—Tells about manure, when and how to use it, how to store it, and a description of the John Deere Spreader. Ask for this book as Package No. Y. 5.

John Deere Plow Co.
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Sheep on the Michigan Farm

THIS topic was the subject of a most interesting address by Prof. W. C. Coffey, of the University of Illinois, at the recent meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association. In opening his address Prof. Coffey traced the history of the sheep industry from the early importation of Merino sheep in about 1800. The Merinos were then very popular because they yielded heavy fleeces of wool which then brought a high price and because of their adaptability to the agricultural conditions of the country at that early date. Wool was a suitable product in the sections where agriculture was being developed at a distance from markets, because it was a comparatively light product yet valuable for its weight and more easily transported to a distant market than any other product. For this reason, too, the popular Merino became widely distributed over the country, rapidly pushing westward and across the Mississippi into the southwest and on to the Pacific coast.

This industry, pushing westward ahead of transportation facilities, was a promise of business to come which aided not a little in developing the projects for transcontinental railways and hence the wool industry of early days was a factor in the developing of transportation as well as in the development of agriculture. Prof. Coffey recounted the manner in which the sheep industry thus hastened the development of better transportation facilities. These in turn brought about a diversity in agriculture, until diversified farming throughout the middle west became the rule rather than the exception. Where diversified farming was introduced the sheep industry declined in a proportionate degree and the larger enterprises in sheep production were carried on in the more western sections.

Prof. Coffey told how, as the agent of the tariff board in its investigations regarding the cost of wool production in this country, he traveled through these different sections of sheep production in the west and found many Michigan men there engaged in the industry which had earlier been their favorite line of production in Michigan. Prof. Coffey noted another result of the development of diversified farming in the rising of land values, which, with the decline in the price of wool made the keeping of sheep for wool alone an unprofitable industry as compared with former years. At the same time a demand for mutton was developed in the centers of population in our country, all of which causes operated to bring about a transition from the type of sheep which were kept for the production of wool alone to a more dual purpose animal which would profitably produce both wool and mutton.

Michigan Once Noted for Her Flocks.

After having traced the history of the sheep industry in the United States as above outlined, Prof. Coffey took up the proper place of sheep on the Michigan farm. He stated that while Michigan was noted for her large flocks of Merino sheep in early days, that nearly all the large flocks have gone and on the small farms of the state small flocks are made a side issue in farming, rather than a special line of production. In looking to the future, the speaker stated that we could hardly expect anything else and, asking the question, "Is there a logical place for the small flock upon the farms of Michigan?" he answered it by saying "yes, if reasonable attention is given to this department of farm production." In speaking of his own state of Illinois, he stated that while grain production was the rule upon Illinois farms, one large grain farmer of his acquaintance was authority for the assertion that a small flock of sheep will pay for its cost in one year. That is, that the lamb flock will pay the cost of the breeding ewes, while the crop of wool will pay for their keep.

As an explanation of this case, Prof. Coffey said that small flocks can profitably be utilized to consume feed which would otherwise go to waste and at the same time keep the farm in a cleaner condition and freer from weeds. As illustrating the possibilities of small flocks he referred to one phenomenal case which had come under his observation in southern Illinois where the wool and lamb crop had returned nearly three times the first cost of the ewe flock, and asserted that the investigation of the tariff board revealed the fact that almost without exception wherever sheep were kept in small flocks upon small farms they made mon-

ey for their owners. One Illinois farmer was referred to who had been a sheep feeder for 20 years and declared that on the high-priced Illinois land he had been able to make a profit of ten per cent per annum for the entire period, or 20 per cent per annum, including the rise in the value of his land. Prof. Coffey made the reasonable deduction that if this record can be made on the high-priced land of the corn belt there is certainly a logical place for small flocks of sheep on Michigan farms.

In speaking of the value of sheep as a means of keeping the weed pest down upon the farm, Prof. Coffey referred to an experiment of Prof. Thos. Shaw while he was connected with the Minnesota Experiment Station. In an effort to determine how many varieties of weeds sheep would consume, Prof. Shaw collected some 600 varieties of weeds and offered them to sheep and found that they would eat only about 580 of the 600 kinds.

In touching upon the advantages of keeping a small flock and keeping them well, Prof. Coffey referred to the growing demand for the best lambs. As an example of the epicurean taste which has been developed along this line, he referred to one Chicago club, the steward of which will purchase only the best wether lambs, because in the opinion of the members the "eye" of mutton, or the choice portion across the saddle, is just a little larger in wether lambs. Since the best lambs can only be produced from the small flocks, here lies an opportunity for profitable production.

The Passing of the Range.

In touching upon the restriction of the western ranges, of which not a little is head in these days, Prof. Coffey stated that in the investigations of the tariff board it was found that in eastern Colorado where formerly sheep were run in bands of 2,500 in the care of one herder it is impossible to run them in bands larger than 1,500 at the present time on account of the encroachment of settlers who have fenced areas in the ranges, thus handicapping the herder in moving a large band from place to place, as well as limiting the pasture.

In touching upon the future of the ranges, reference was made to the quite prevalent opinion that many of these settlers would not make good and that the land would be brought up in large tracts and again converted into ranges for pasturing stock. Prof. Coffey thought that while this was perhaps true, that under present conditions the land would be far more likely to be stocked with cattle than with sheep for the very good reason that cattle are more easily and cheaply handled in fenced enclosures, as a herder is necessary to protect sheep from the ravages of predatory animals. This permanent abandonment of the ranges for sheep production is still another reason why sheep should be kept in small flocks on the farms in the middle west.

Notwithstanding these facts, the speaker stated that the sheep industry is not in a satisfactory condition: First, because the flocks are not sufficiently prevalent upon our farms; second, because of a lack of experience which makes many farmers loath to go into the sheep business; third, on account of a system of farm tenantry which does not average of sufficient length to warrant a tenant to invest in sheep; fourth, because of the growth of the dairy industry and the idea which dairymen have gotten that the sheep is a competitor of the dairy cow for the grasses grown upon the farm and hence cannot be profitably kept on the same farm with dairy cows. Reference was made to experiments conducted by the Wisconsin Station along this line which indicated that by not grazing the pasture too closely with cows that sheep could follow them and a greater profit be thus derived than if the cows alone were kept, and the statement was made that many Wisconsin dairy farmers admit this fact.

Another reason adduced for the comparatively small number of flocks kept upon our farms is the fact that farm people are not particularly fond of mutton, their taste having been better educated to a liking for beef and pork. The speaker believed that a campaign of education to teach the people how to dress and prepare mutton would be most beneficial along this line.

In touching upon the methods employed with the average farm flocks, Prof. Coffey took occasion to criticize average methods and to mention a few of the

essentials of profitable sheep husbandry. These included reasonable care in the selection of breeding ewes, which should be thrifty, uniform and regular and profitable producers. Only a pure-bred sire of the correct market type should be used. Better methods are imperative and they will come with a better realization of the merits of the small farm flock. This could be brought about by organization, both in breeding and marketing.

Touching the advantages of organized marketing on this line, Prof. Coffey referred to the Goodlettsville Lamb Club. This is an organization of 50 members who produce about 50 lambs each. They aim to have their product of the highest and there are thus available about 2,500 lambs of a standardized type and quality for which buyers compete, thus making the undertaking a profitable one.

In closing, Prof. Coffey urged the development of methods adapted to local conditions and he again asserted that there is a profitable place for small flocks of sheep upon the farms of Michigan.

SILAGE FOR HORSES.

We are now in the midst of the winter feeding. Many of us who have silos may be a little short on dry feed for roughage for feeding without piecing out with the silage. I find that many men with silos have not as yet fed silage to their horses, for the reason that they did not dare do so, believing that it was not safe. The fact is, however, silage is just as valuable for horses under all conditions except, possibly, while at steady or heavy work, as it is for the dairy cow. I make the one exception in case of work horses for I have not tried it out very much yet, but I am beginning to believe that for work horses it will be a profitable and beneficial ration to be fed in part, at least, and maybe it will largely take the place of hay at all times. For the second season we are now feeding horses of all kinds, brood mares, colts, and work horses, silage twice a day, giving all they will eat of it, feeding no grain, and roughage such as dry corn fodder, oat straw or a little hay once a day. They are all doing as well as one could possibly wish and bid fair to be almost too fat for the spring work. One thing necessary to emphasize, however, is that the silage shall be good, made out of mature corn and put in before the fodder begins to turn to woody fibre. I would be afraid to feed poor silage, either that made from too ripe fodder, and that has moulded more or less, or that made from too green fodder and that is too acid. Good silage will not hurt any kind of a horse, and is most cases is as good as a tonic fed with much more expensive feeds. Many a horse out of condition, wormy, inclined to colic or otherwise out of the normal, has been put in the finest condition and quality by feeding silage. So do not be afraid to feed it to the horses, providing it is good silage.

Oakland Co.

E. M. MOORE.

HOGS DIE FROM EATING TOO MUCH SALT.

I have read several articles in the Michigan Farmer and other farm papers recommending the feeding of salt, sulphur, charcoal, etc., to hogs. These articles did not state that these commodities should be mixed together and fed or that there was any danger in feeding any one of them alone. I have always fed charcoal and soft coal cinders to my hogs, but have never fed salt until about two weeks ago.

I had 16 hogs, ten that would weigh about 150 lbs. and six that would weigh from 200 to 225 lbs. One evening I fed the 16 hogs a pint of salt thrown loose in the trough. The next morning when I went out to feed I found one of my largest hogs dead and two more sick. One of them could not get up. I called the local Vet. and after telling him what I had done, he told me that it was the salt that killed the hogs. He explained the action the salt would have on the pig's stomach and he then opened the dead hog, removed the stomach and found the condition just as he said it would be. He gave the two sick hogs some medicine and saved one of them; the other died. So I lost two hogs that would weigh over 200 lbs., just to find out that salt is not only unhealthy but is poison to a hog when fed alone.

I think the person or persons writing these articles relative to different things to feed stock should be careful to give a word of warning in case there is danger of feeding any one kind of feed alone. I am giving you my experience, think-

ing perhaps there may be others that do not know the danger of feeding salt to hogs and a word of caution may save them a heavy loss.

St. Clair Co.

E. J. Rice.

FEEDING RYE THAT HAS BEEN INJURED BY HEATING IN THE BIN.

I have about 100 bu. of rye which has heated in the bin and as it will not sell on the market I thought of feeding it. I have horses, cattle, sheep and hogs. I would like to know if I can feed it safely and how much to the various animals.

Montcalm Co.

E. H. S.

The food value of this rye is undoubtedly much greater than the market price. In fact, at the present price of rye on the market a man who has a large crop can well afford to feed it. It is worth more to feed to all kinds of stock than it is to sell. I cannot understand why rye should be so cheap while wheat holds up fairly well in price. The rye should be ground. I would not want to feed it to any kind of stock without first grinding it. Then, like wheat, I would prefer to have it mixed with some other feed. I don't like to feed ground wheat pure. Then, as this rye has been injured by heating I would much prefer on that account also to feed it in connection with some other kind of grain.

I would suggest that you feed it in connection with wheat bran and corn meal. If the rye is ground and you feed equal parts of wheat bran, corn meal, ground rye, and gluten feed it will make a splendid ration for dairy cows, while

developing great breadth, and I might well emphasize this statement by saying that I was offered this past summer \$60 per head for all my female cattle of three years of age. Some years ago that would have been considered a fabulous price, but not now when a beef shortage faces the country."

Lambs have sold recently at the highest prices ever recorded in December, in contrast to the unsatisfactory market for live muttons usually seen in the last month of the year. In past years January and February have both made high record prices, as well as March, April and May, but never December. It provided a favorable autumn for feeding sheep and lambs, and flocks put on flesh very satisfactorily where plenty of feed was given them, enabling their owners to make good profits. Unfortunately, there are always numerous farmers who take up feeding sheep for the market when the outlook is extra good, but who fail to carry on the industry properly, and these inexperienced sheepmen are very apt to return stock to market nearly as thin as when first purchased, the result being that the sheep or lambs are bought by other feeders and sent out to be made really fat and suitable for converting into mutton.

A. E. De Ricqles, general manager of the American Live Stock & Loan Co., of Denver, states that the entire country from Denver to Canada has had the finest autumn weather ever experienced, and cattle have shrunk very little as a rule. He says there is great interest in Texas over the coming National Live Stock Association meetings to be held in Phoenix, Arizona, in January, and a large delegation is going there. A great fight is expected at Washington over the proposed admission of meats from South America free, and the association is getting ready for it. "A little tight money will not injure cattlemen," said Mr. De Ricqles, "for they have more money in the banks than ever before, and they



22-yr.-old Percheron Mare and Six of Her Colts. Owned by M. Speer, Ingham Co.

to feed them entirely on ground rye might get them off feed. Also, if it is mixed with corn meal and ground oats or wheat bran it can be safely fed to horses and also to sheep and hogs. It is not necessary, I think, to mix it with other feed, although I believe it will pay you to mix it with wheat middlings or corn meal and make into a slop to feed pigs. In this way, as long as you haven't enough rye so but what you would have to feed other feed, you might just as well mix the rye with your other food and the cows and all kinds of stock will relish it much more and you will obviate entirely any injurious effects which might be caused by feeding your particular rye entirely alone.

COLON C. LILLIE.

LIVE STOCK NEWS.

Conrad Kohrs, of Helena, Mont., president of the Pioneer Cattle Company, and a widely-known rangeman of experience covering half a century, who attended a recent meeting of Illinois live stock men, pointed out the great necessity of far more breeding by farmers living in the corn belt states. Montana, he said, will market few fat beefs this year that are under three years of age, and breeding herds of that state are much smaller than in past years, range cattle being few compared with a decade ago. The once vast pastures occupied by cattle and sheep are mostly farmed by new settlers, dry farming being largely carried on. It will be years before the farmers of the new northwest will begin to market large supplies of cattle, and farmers of the middle west must start in at once to breed their own beef cattle if they expect to remain in the cattle business. The corn belt can no longer place any hope on getting considerable supplies of feeder cattle from Montana, North Dakota, South Dakota, Wyoming or Colorado, said Mr. Kohrs, or for that matter, from the southwest, and two years more will wind up the Pioneer Cattle Company's once great strings of range cattle, while already most of the old-time big outfits have closed their holdings. He added that "in Montana the rangemen are facing a serious condition. Cattlemen there are making a real effort to produce greater beef supplies in future years, but they will not have an open range to graze upon. The demand for breeding stock is

are so comfortable and satisfied over their condition that I fear they are not going to make much effort to increase the cattle supply by either stocking up or feeding stock."

In some parts of Iowa and other sections of the corn belt it has been impossible to get sufficient crib space for the immense crop of corn that has been grown the past year, and corn has been heaped up in the open awaiting delivery of cribs that have been ordered. With good corn selling there for 30 to 35 cents per bushel and soft corn available for 20 cents for 80 pounds, and the young hog crop greatly depleted by hog cholera, an urgent demand for young cattle to feed has developed in various quarters.

Late advices from Iowa say that hogs have been pretty well marketed from various sections, particularly from places where hog cholera has prevailed during the autumn, and higher prices are expected to prevail next summer, as much of an advance of \$2 per 100 pounds being predicted by some men. Corn has been sold freely by farmers around 35c per bushel.

Word comes from Madison, Wis., that the farmers of all parts of that state are making complaints to the state veterinarian regarding the new tuberculosis law, which provides that after June 30 next no further payments of money will be made by the state for such cattle as may be condemned for tuberculosis. After that date all cattle condemned must be shipped to slaughtering points, and the owners will receive only as much as the carcass will bring as salvage. Under the present law a condemned cow may bring as high as \$60. The tuberculosis law that was enacted two years ago resulted in the testing of 12,000 cattle a year. Under the compulsory law repealed at the last session of the legislature 150,000 cows were tested annually. It is stated on good authority that a determined fight will be made at this session to again enact a compulsory law. Should this be done without extending the time at which the state will cease payments for condemned cattle, losses by farmers will be heavy.

Frank Hanson, of Wakefield, Neb., says the farmers in that part of the country are abandoning breeding Poland-China hogs and are breeding Duroc-Jerseys. He says the two breeds sell at the same prices on the market and have numerous points in common, but the Durocs do the best in the feed lots. Most owners of the Durocs claim that the red hogs are more prolific breeders as a rule than Poland-Chinas, and Mr. Hanson says his experience bears this out.



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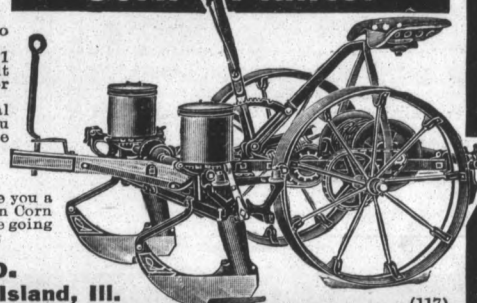
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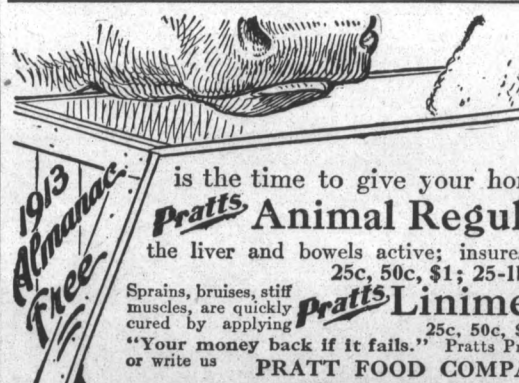
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Dairy.

PROVIDING ROUGHAGE FOR DAIRY CATTLE.

SPECIAL attention should be directed toward providing good roughage rations for dairy cattle during the winter months. One of the greatest mistakes a dairyman can make is that of investing in the high-priced concentrates to piece out, not supplement, his supply of home-grown roughage. When possible I plan to utilize the odds and ends of roughage during the early winter; holding back the clover and mixed hay until later. Such feeds as corn stover, clover rowen and oat and pea hay are in better condition to feed early in the winter, besides, the cows and heifers need the choicer hay during the period of freshening and immediately after. We filled one large barn floor with corn fodder, second crop clover and oat and pea hay cut and mixed together. A little corn meal or mill-feed added to the roughage when it is placed before the cattle will impart an agreeable flavor and induce the animals to fill themselves. With good management it is possible to effect a big saving in the amount of roughage needed to carry the cattle through the winter in good flesh condition.

No matter how well the silos are protected from the weather there will be considerable frozen silage. This is sure to become more or less mixed throughout the whole mass when feeding and if fed to the cows is apt to cause trouble. While I have never had any losses among my cattle that were caused directly by frozen silage, I have always felt guilty when large chunks of frozen silage dropped from the baskets into the mangers. This fall we partitioned off a room opening from the stable into which we throw the silage a few hours before feeding so that the heat from the stable will slightly raise the temperature of the mass before it is fed to the cows. This plan is not exactly in accord with the teachings of the sanitarian, but I do not think it will cause any trouble if care is exercised not to stir up the mass just before milking time. In feeding calves and fattening stock there is little danger from feeding frozen silage but I have always felt a little ticklish about feeding it to cows that are advanced in pregnancy.

Dairy farmers who have made a superficial study of making-up balanced rations have frequently neglected to take into account the economical side of the question. It is quite easy for an expert mathematician to figure out a balanced ration guaranteed to produce a heavy flow of milk, but it requires more than an ability to juggle a row of figures to make up efficient rations that will make the most profitable use of the home-grown roughage. For example, I am going to mention a ration that is frequently advocated by dairy experts as nearly ideal for cows that are producing heavy yields of milk. It is a very efficient ration, but I think that it can be greatly improved upon in economy, by other simple rations containing more roughage.

	Dry Matter.	Protein.	Carbohydr. and Fats.	Cost.
0 lbs. corn silage..	8.40	.35	5.160	6
0 lbs. clover hay..	8.50	.68	3.960	5
3 lbs. buckwheat middlings	2.61	.63	1.368	4.5
2 lbs. wheat bran..	1.76	.244	.906	3
2 lbs. corn meal..	1.78	.188	1.528	2.5
1 lb. cot'n'sd m'l..	.92	.372	.444	2
Total	23.97	2.474	13.366	23c
Nutritive ratio 1:5.4.				

This ration accords with the generally recognized standards in variety, dry matter, nutritive ratio and efficiency, but from the standpoint of economy let us place it along side of the following:

	Dry Matter.	Protein.	Carbohydr. and Fats.	Cost.
0 lbs. corn silage..	8.30	.270	3.870	4.5
8 lbs. alfalfa hay..	16.56	1.980	7.614	9
2 lbs. corn and cob meal	1.70	.088	1.330	2
Total	24.56	2.338	12.814	15.5c
Nutritive ratio 1:5.4.				

So far as nutritive ratio is concerned this ration gives the same results, but it would require a greater expenditure of energy to digest it. The ration is palatable and would prove very efficient so far as the health of the animals is concerned. To make the quantity of protein

and carbohydrates and fat more satisfactory let us substitute three pounds of corn meal for the two pounds of the corn and cob meal:

	Dry Matter.	Protein.	Carbohydr. and Fats.	Cost.
30 lbs. corn silage..	6.30	.270	3.870	4.5
18 lbs. alfalfa hay..	16.56	1.980	7.614	9
3 lbs. corn meal..	2.67	.237	2.292	4
Total	25.53	2.487	13.776	17.5c
Nutritive ratio 1:5.5.				

In this ration the dry matter is a little above the feeding standard but not enough to outweigh the argument that it is cheaper and more economical where alfalfa can be grown. Other simple rations can be compounded, substituting clover hay, cowpea hay and other proteinaceous fodders for the alfalfa hay.

I have mentioned these rations simply to show the necessity of reducing the cost of dairy foods by growing better varieties of roughage. It is not my purpose to disparage the use of grain feeds and commercial by-products; they have their place in the economy of feeding and must be used to a certain extent, but there is a fine field for study in comparing the cost, composition and efficiency of these rations. Aside from the matter of original cost, the rations containing the better grade of roughage are exceedingly well adapted to promoting the health of the cattle.

Closely related to the question of providing an abundance of suitable roughage is that of providing sufficient material to absorb the liquids in the stable. Basing its work on the assumption that the average cow when stabled voids about nine pounds of urine each day, and that she is stabled 16 hours each day, thus depositing two-thirds of the amount where it must be absorbed by bedding material, the laboratory tests of absorption at the Maryland Station showed that 2.8 pounds of cut corn stover per day would be sufficient and equal to the following amounts of other materials used: Wheat straw, cut or uncut, 3.3 pounds; sawdust from green logs, hauled directly from exposed out-door piles and quite moist, 8.3 pounds, and shavings from dry pine, three pounds.

For convenience, cost and sanitation I prefer sawdust when it can be obtained. It makes ideal bedding, being quite free of dust and inclined to stay where it is placed. It has been claimed that it has an injurious effect upon the soil, but the Maryland officials say that the use of ten pounds per head per day would have no injurious effect on ordinary soils receiving the manure. On stiff clay soils it would be beneficial. Whenever one can obtain sawdust at a moderate cost it makes an economical and efficient bedding material.

In most dairying localities, shredded corn stover has too high a feeding value to use for bedding; however, many dairy farmers are convinced that it is worth almost as much for bedding as for feeding, especially when they have an abundance of hay and silage for winter feeding. Shredded fodder has all the pith exposed to the immediate action of the urine in the gutter, and the general fibrous character of the whole mass gives it some advantage over common short-cut fodder for use on hard floors. As a general proposition, other things being equal, it is more profitable for a dairy farmer to grow corn fodder for bedding than to depend upon small grains primarily to furnish bedding material. If his land and crop rotations require the small grain crops, the by-product, straw, will furnish good material for bedding. Generally speaking, I do not think it will pay to gather forest leaves for bedding, that is, if a man has other farm work that demands his immediate attention. The same may be said of hauling dry soil to the barn to use in the gutters, for outside of the absorbing qualities in the gutters there can be no possible benefit, unless it helps to introduce and propagate helpful soil bacteria. In the case of inoculating soils for alfalfa it seems that it would pay to haul a few loads of soil from an old established field of alfalfa to the stable and mix a few bushels in the gutters each day so that the manure would be thoroughly inoculated with these tiny helpers before it is applied to the soil. The experiment, at least, seems worth a trial on farms where this crop is being started.

The main factors that govern the bedding question are that of saving the liquids and getting them on the soil with as little loss as possible. Where labor is high and scarce the application of liquid manures with any degree of effec-

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tiveness is out of the question. If these liquids are held in absorption with the solids it furnishes a more evenly balanced plant food which can be readily and evenly distributed. I doubt if we can work out any economical and efficient system of handling the liquid and solid manure separately.

New York. W. MILTON KELLY.

DEVELOPING DAIRY QUALITY IN CATTLE.

(Continued from page 114).

pounds of butter in 12 months and her calf of that year sold for \$200. During a four-year test, from 1903 to 1906, inclusive, she produced 35,575 pounds of milk and 1,763.7 pounds of butter, an average of 8,893.8 pounds of milk and 440.9 pounds of butter during this period. Mamie Clay, owned by Innis & May, has a record of 12,232 pounds of milk in one year and an average of 11,127 pounds during a four-year test. At the New York State Fair, 1909, during a two-days' test conducted by Prof. H. H. Wing, Juliet, two years and five months old, gave 78 pounds of milk, showing 4.22 per cent butter-fat. She won second prize in competition with the dairy breeds and lacked only .03 per cent of first place. Lula, owned by Missouri Agricultural College, under an official test of 12 months, produced 12,341 pounds of milk and 605 pounds of butter.

"The best record of any Shorthorn cow is that of Rose of Glenside, made under the auspices of the Pennsylvania Agricultural College. During a test of 12 months she produced 18,075 pounds of milk and 735 pounds of butter, an average of two pounds of butter per day, and 49.5 pounds of milk. This cow is owned by May & Otis, Granville Center, Pennsylvania.

"During the year 1912 a new butter record was made and it is the best ever scored by a Shorthorn cow. It was made by a cow owned by Mr. Avery, of New York, Rose 3rd I think is her name. In 12 months she produced 15,592 pounds of milk and 831 pounds of butter, showing her milk to be very rich in butter-fat.

"The essential characteristic of Shorthorns is beef, but a beef breed that can show a herd with more than 40 cows with milk records ranging from 10,000 to 13,232 pounds is worthy the careful consideration of men who want cows that will pay their way as dairy animals, aside from their ability to produce profitable beef animals. Such cows are well suited to present-day farm conditions and the demand for such is rapidly increasing, and the men who are producing cows with good milking qualities and acceptable beef form will have a profitable market for their surplus. The motto of Shorthorn breeders should be beef and milk and not milk at the expense of beef."

Other Dual Purpose Breeds.

There are other dual purpose breeds which merit mention in this connection. Of these the Red Polls are most largely represented in Michigan, with the Brown Swiss next in order of numerical importance. As noted, under some conditions these breeds or high-grades of them will serve a useful purpose upon Michigan farms where dairying is but one of several lines of production. But where a specialty is made of dairying, cattle of some one of the special dairy breeds of high grades of these breeds will better serve as a foundation for the developing of dairy quality in the entire herd, and that development can best be carried on on a community basis.

Get Rid of the Star Boarders.

A prime essential in improving the average dairy quality in any herd is the weeding out of the poor individuals, sometimes spoken of as "star boarders." In order to know which cows come in this class and which do not it is essential that accurate records of production be kept. With this, as with improvement by better breeding, the best results will be attained where the work is conducted on a community basis. The cow-testing associations which have been formed in Michigan have demonstrated the feasibility and the profitable nature of this work. There should be many more of them, as they will be helpful as a means of solving the feeding problem as well as a means of weeding out the poor individuals from the herd. But the work can be done by the individual if he cannot get his neighbors interested in it, and the natural result will be that they will become interested when they note the resulting increase in the figures on his milk or cream check.

Program of State Dairymen's meeting appears on page 133.

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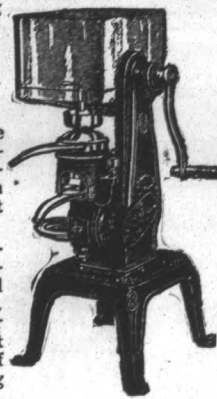
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Horticulture.

TWO NUTS OF VALUE.

There is no doubt that we, here in America, fail to realize the food value of nuts. Besides the popular peanut, which is really not a nut, and a few nuts and raisins during the holidays, we use little of this condensed food nature puts up for us.

In Europe the nut is a staple article of diet. The poor of France and Italy often make two meals a day out of chestnuts, and the rich use them prepared in different ways and also as dressings for meats and poultry. In Korea the chestnut takes the place that the potato does here and in Ireland.

The farmer is wise who invests a little in the ornamentation or beautification of his place. It is a matter of business principle to present a good appearance of yourself and your place of business. The farm is both the place of business and the home. There are two reasons for beautifying it. The farmer is wiser still who makes his landscape effects bring him direct financial returns, making it useful as well as ornamental. Two nuts that have been successful with us would greatly help him in doing this. They are the Paragon, a European chestnut, and the Kentish Cob, a filbert.

The chestnut is probably used as a staple article of food more than any other. Undoubtedly this is because it is one that is improved by cooking. The American, although of good quality, is too often too small to sell well. The Paragon is one of the few European varieties that do well here. It is undoubtedly one of the descendants of the chestnuts imported by Irene du Pont de Nemours, the founder of the famous du Pont powder mills. It has both flavor and size.

With us the tree grows to about the size of a full grown peach tree. It starts bearing when about six years of age and will bear when in full bearing a half a bushel to a bushel of nuts.

This variety can be grafted on the native stock or can be bought already grafted. The young trees need a little care to get them started but the older trees have done well with us without any care but mulching. When set as an orchard they can be placed about 30 feet apart but 40 feet is preferable. How it is better to set them out in single rows along the farm lane or to serve as shade and ornamentation around the house. In this way they are not nearly as liable to disease as when set in orchard form.

The price paid for chestnuts is good, being all the way from six to sixteen dollars a bushel. Ten dollars ought to be a good average for nuts such as the Paragon. The commercial possibilities might be hinted at by the following: At 30 feet there would be 48 trees to the acre, half a bushel to the tree at \$10 a bushel, and no care or expense—well, that sounds like raising chickens on paper. However, it would be safe to set out trees of this variety in several appropriate places on the farm. They would supply some for roasting at the fireplace during the long winter evenings, and considerable pin money besides.

The filbert is related to the hazel nut and is an improvement on it. They grow in bush form and about 12 feet high. The Kentish Cob variety has done very well with us. They have not the commercial standing that the chestnuts have but they bear good crops of large-sized nuts that are my favorites in the assortment of nuts when we have a nut-cracking bee. The kernel is about twice the size of the hazel nut and the flavor a little better.

The bush form of the filbert will be especially adaptable for screens to hide the barn and other outbuildings from the road. There are many other places where this bush could be both ornamental and useful.

Both of the above varieties of nuts seem perfectly hardy, having passed safely through the 25 years we have had them. Last winter, when the mercury dropped to 21 below, it had no effect on them.

Van Buren Co. F. A. WILKE.

EXPERIMENTS WITH BLUEBERRIES.

Prof. Frederick V. Coville of the bureau of plant industry, has been taking an active interest in the domestication of the blueberry and in the foundation of a

blueberry-growing industry. It has been found that seedlings grown from very large-berried bushes produce small berries oftener than large ones and that budded and grafted plants continually send up new and objectionable shoots from the stock. The desirability of devising some method of propagation by cuttings is therefore obvious. The problem proved so difficult that an elaborate study was necessary before the various causes of failure could be understood and eliminated. Three successful methods of reproducing blueberry plants have now been devised, and berries exceeding eleven-sixteenths of an inch in diameter have been grown in the greenhouse. Mr. Coville is now searching for other and still better wild stocks, the largest berries having been found in the pine barrens of New Jersey and in North Carolina.

RUSHING RHUBARB AND ASPARAGUS.

Rhubarb and asparagus may be "rushed" in early spring and brought, steaming to the table from two to four weeks earlier than is usual with the home-grown product. Set a half barrel, with both ends out, over a clump and force it into the ground slightly. Pile fresh stable manure, steaming hot against the outside of each half barrel, and lay hot-bed sash across the top if the weather is still freezing cold. A four-sided box, smaller at the top than at the bottom, is used for the same purpose, and, though more convenient is not always so available as the half barrel. Cover the barrel with old bagging or straw. During March three weeks will give a crop of excellent tender rhubarb. The plant is not injured by this mild forcing, and can be used for the same purpose next year.

If the plants are thus protected by boxes or barrels in fall before freezing, and packed loosely inside and solidly outside with litter, good, tender stalks may be had even earlier. Then the litter should be cleared away in February, and fermenting manure used as described above.

Cold-frames, hotbeds, greenhouses and mushroom cases are all used for forcing rhubarb, but lacking these, one may utilize an ordinary root cellar. The only requirements of this hardy plant are warmth and moisture. It will grow best in a temperature of from 45 to 60 degrees. The less light they have the tenderer the stalks will be. The acidity also is less in cellar-grown pieplant, and less sugar is required in cooking.

For cellar forcing, plants should be dug any time after frost from beds three or four years set. They should be lightly covered, to prevent alternate freezing and thawing, and allowed to remain outdoors until frozen. The roots may then be packed closely in a box or even on the cellar floor. Soil should be filled in between the roots, and the crowns buried from four to six inches. The temperature should be even and the soil moist. If the cellar be a little too cool a lighted lantern placed near the plants often supplies enough heat.

A dozen strong roots will supply a small family with these vegetables, so delectable in earliest spring. The roots once forced in the cellar are thrown away. The family asparagus and rhubarb beds that have had good care for several years ought to be able to spare a few well-stored roots for this purpose every winter.

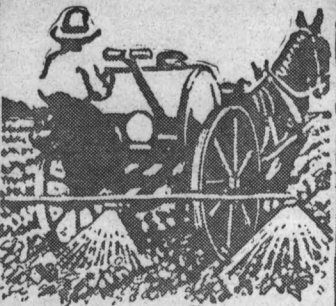
New York. T. A. TEFFT.

EXPERIENCE WITH SCALLION ONIONS.

In a late issue of The Farmer and in several other farm papers, I have noticed inquiries as to the cause of so many scallions in the onion crop this season and what could be done to lessen the trouble.

It has been our experience that late onions, grown in mucky soil with too frequent rains, are almost sure to develop an over-supply of scallions, while earlier varieties on lighter soil and a dry season are practically free from the trouble.

As to cutting off the tops, to overcome the difficulty, that only makes the matter worse, since the new tops will soon sprout up with renewed vigor and keep right on growing. No matter how often they are cut back, they will sprout and



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grow again every time, while if pulled
and dried with tops left on they will
keep indefinitely.

Our method of stopping top growth and
throwing it into the bottom is by what
is termed "bending down," by which
method the top is simply bent over in-
stead of being cut off. For field culture
this is done by going over with a roller,
while the family garden may be helped
by simply going over with a pole heavy
enough to bend the tops. A handle or
attachment is nailed on each end of the
pole by which it can be easily drawn by
two persons.

We think the earlier onions can be
made to ripen, the less will be the danger
of trouble with scallions.

When we wish for sets of our own rais-
ing for early garden planting we save
them from the thinning of the onion beds.
When the onions are large enough to thin
we save these thinnings which are gen-
erally about the size of the common sets.
These are thoroughly dried and stored in
a cool place, the tops being left on. They
rub off easily when wanted for planting
in the spring.

If one is short of sets and has old on-
ions left over in the spring as is often
the case, each onion may be cut in pieces
and planted like a potato, giving each
piece an equal share of the roots. You
will get as many onions as you plant
pieces, whereas, if you planted the whole
onion, you would get but one onion in
return. When told this I did not credit
it; but by experimenting I found it to be
so, which proves that we are never too
old to learn.

Oceana Co. JENNIE M. WILLSON.

SWEET PEAS.

Though many complain of failure, the
sweet pea is easily grown. And what
daintier or sweeter flower does the gar-
den afford? To ensure a good supply of
choice flowers the first step is to secure
choice seed from some reliable house. The
next step is special, but not difficult cul-
ture.

Sweet peas should be planted as early
as the frost is sufficiently out of the
ground to permit. In fact, it is not fatal
to plant them on a bed of ice, though
this is not especially recommended. The
object of early planting is, that in the
long cold weather after this time the top
growth may be deterred and the strength
of the plant directed to the development
of the roots which will grow on just the
same. And it is the deep, strong rooting
of the plants which will insure luxuri-
ance of bloom, large flowers and a long
blooming season. This with plenty of
moisture is the grand secret of the suc-
cessful raising of sweet peas.

The row or rows should be so chosen
as to run north and south because this
insures the best exposure to the sun-
light. The soil preparation is a very
important element. To grow success-
fully sweet peas must have a rich,
porous soil. A deep trench should be
dug, a foot wide and if it is two feet
deep, all the better. In the rich earth
put back into the trench old, well-rotted,
pulverized manure should be incorporat-
ed. The trench should be filled up to
about six inches of the level of the
ground. Then plant the peas two or
three inches apart and cover with from
one to three inches of earth. If there is
to be more than one row, plant about
four feet apart.

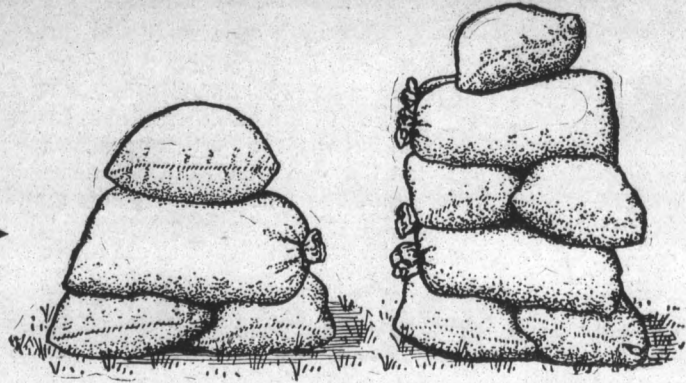
As soon as the plants are well up,
which will not be for several weeks, they
should be provided with a support.
Strings will do if they are tied close to-
gether, or brush stuck close together in
the ground. But the neatest and best
support is a three-foot chicken wire net-
ting stretched the full length of the
sweet pea row and fastened firmly to a
post at each end.

As the plants grow, the trench in which
they stand should from time to time be
gradually filled level with or higher than
the ground. Or there is another way not
quite so good—the depression may be
utilized for the liberal application of
liquid stimulants, such as weak manure
water, or nitrate of soda in the propor-
tion of one ounce to five gallons of water,
applied to a 15-foot row every two weeks.

The dry, hot weather is the sweet pea's
greatest enemy. Then the soil about the
roots should be mulched with dry grass
or weeds or straw. This will help to re-
tain the moisture about the roots.

When the flowers begin to bloom, they
should be kept closely picked that the
strength of the plants may be preserved
for more blooming. This is a case where
liberality in giving flowers away carries
a double reward.

Washtenaw Co. CHARLOTTE BIRD.



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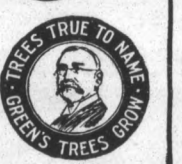
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PAPER COVERED HOT-BED FRAMES.

In the winter the fancy turns to thoughts of spring, so to next summer's garden; thence to a hot-bed. And surely a hot-bed is a good thing. There should be one in every farm garden and certainly there are many, but not yet enough to go around.

There is advice enough regarding the making of a hot-bed, some good, some bad, some worse. But that is not the concern just now. The sash is the starting point. Given that and the rest may follow in its order.

The sashes commonly used for hot-beds are expensive. They are filled with glass. A stray cow or pig, sometimes a boy, in making a short cut from somewhere to some other place, occasionally finds the hot-bed in the way. That may not be bad for any of these animals, but it is embarrassing for the sash to keep on smiling after such an experience.

How about a substitute for glass? Strong manilla paper, covered with linseed oil, serves the purpose. First there is the frame, to which poultry netting is attached. Over this is fastened the paper, then some more poultry netting. The paper may be used alone, but the wire protects it from accidents and prevents the wind from loosening it. The oil will glue the paper together at the overlapping edges, shutting out the wind, which is not done by glass.

Not only does paper keep out wind and rain, but it has an advantage over glass at another point. Glass is transparent. Everybody who has had any experience with hot-beds knows how quickly the air under glass becomes heated when the sun shines. Paper does not transmit the sun's rays so freely, but it is translucent enough to give the plants beneath it all the light they need. Thus a more uniform temperature is kept up than when glass is used.

A sash suitable for paper can be made at home and the expense is a trifle. In fact, the whole outfit will cost very little.

Sashes fitted with paper are much lighter and easier to handle than those with glass. Then, too, if the lights are broken they can easily be mended.

Seeing that sashes can be made so easily there is little excuse for a failure to be supplied with a hotbed. The wonder is that they were not made long before they were.

Oakland Co.

F. D. WELLS.

WINTER STRAWBERRY NOTES.

Judging from present conditions, strawberry plants not provided with an adequate covering of straw or similar material, will come out in the spring with vitality greatly impaired. Up to the present time, the fall of snow has been exceedingly light, so much so that the protection to plants from this source has been of but little account, and it is now the middle of January. The snow is only two or three inches deep over our plants, and in a location sheltered from west winds; while in former years it has been from one foot to three feet or more at this time, in this location; but as our plants have the additional protection of a mulch of straw and other materials applied early in the winter, no injury will be done the plants, providing, that a protracted spell of excessively low temperature does not set in before there is an additional fall of snow.

With us, mulching operations began November 15, with a half day employed in gathering leaves from the near-by woods, in baskets, carrying them directly to the patch and spreading them over the rows of plants. There was a brisk wind from the west at the time, which would have interfered with the proper application of the leaves, perhaps prevented, altogether, the work done, but for the protection afforded by the woods; as it was, it was necessary for one hand to follow closely, and with a six-tined fork, scatter a light sprinkling of earth on the leaves. A force of four working about three and one-half hours, covered about one-third of the plot of an acre. Taking everything into consideration, the gathering and use of the leaves was considered profitable. Snow storms, bad weather with other things, prevented gathering any more leaves, and so the remainder of the bed was mulched with rye straw, supplemented by a load of stable manure, and some buckwheat straw, which, being threshed while yet green, and pretty well chewed up by the machine, had become much like manure. This material spread nicely, a small amount going a long way.

A neighbor, who has about a half-acre of plants, just over the line fence, made

use of leaves for a mulching material, held in place by carrot and beet tops. He has been growing strawberries in a small way for several years, but with poor results. This is the first time he has given his plants winter protection; and, although it does not necessarily follow that a successful crop will be harvested next season, because of the winter protection given, still, mulching is one of the essentials and we believe a step in the right direction has been made.

Although there has already been some injury done to strawberry plants unprovided with a winter mulch, it is not yet too late to get profitable returns from the application of such a protection. In fact, it will not be altogether too late, till sugar weather is here. The grower of strawberries, who is remiss in the matter of supplying a winter protection for his plants, is losing largely in prospective profits.

Emmet Co.

M. N. EDGERTON.

FEEDING THE PEACH.

It is a well known fact that the peach tree grows rapidly, comes in fruiting early and produces a large quantity of fruit in a very short season. It responds more quickly to good treatment than any other ordinary fruit-bearing tree. The quantity and quality of its fruit and length of life depends largely on this treatment.

Green manure should be used to supply nitrogen and humus for both the growing and fruiting tree, where it is possible to grow such crops as cowpeas, Canada peas, vetch or clover for this purpose. Care should be used, however, not to produce too rapid growth and thus weaken the tree and lower the yield of fruit. Weak trees succumb more readily to insects and diseases.

On sandy soils such as is found in Michigan, considerable quantities of phosphoric acid and potash should be applied to the fruiting peach orchard. Sandy soils are low in these elements and the peach requires it. The New Jersey Experiment Station has increased the yield of peaches over 100 per cent by using a fertilizer running high in potash and phosphoric acid. Potash is particularly advantageous to the peach. It aids in the production of a high-colored fruit of superior flavor and quality. Not only this but it increases the yield materially.

Illinois.

R. C. BISHOP.

UNFAVORABLE RESULTS FROM STAKED TOMATOES.

In a report received by the Department of Agriculture from the Georgia Experiment Station of experiments with tomatoes, which were pruned to one, two and three stems, respectively, and staked, all the pruned and staked plants gave a much higher yield than unpruned and unstaked vines. Vines pruned to three stems gave the highest yield and vines pruned to one stem gave the least yield. The bearing season of the pruned and staked plants was twice as long as that of the unpruned and unstaked plant, and the fruit was larger and freer from defects, except blossom-end rot. Pruning and staking is not, in general, however, recommended, since in experiments previously made by the station, the poorest yields were secured from the staked plant, which likewise showed a greater percentage of disease. The latest experiments showed that blossom-end rot was more prevalent in the staked tomatoes than in the unstaked ones.

CATALOG NOTICE.

The 1913 Seed Annual, published by D. M. Ferry & Co., seedsman, Detroit, Mich., is a 100-page book profusely illustrated and containing a number of colored plates fully illustrating and describing the complete line of high-grade farm, garden and flower seeds carried by this well known Michigan firm. Write for this annual, mentioning this paper.

Ellwanger & Barry, proprietors of Mt. Hope Nurseries, Rochester, N. Y., established in 1840, send an illustrated 84-page catalog describing the full line of fruit and ornamental trees and plants listed by this company. This is an unusually complete catalog, especially in ornamental and flowering plants.

Stark Bros. Nurseries & Orchard Co., general nurserymen, of Louisiana, Mo., send a catalog of their fruit and ornamental trees and plants, together with other literature descriptive of varieties useful to those who contemplate orchard planting. Write for this literature, mentioning the Michigan Farmer.

Plamet Jr. Farm and Garden Implements, manufactured by S. L. Allen & Co., Philadelphia, Pa., are fully illustrated and described in a 64-page catalog published by this well known company. In it is listed a full line of farm and garden tools which enable the user to give his crops the best of surface tillage. When writing for the catalog mention the Michigan Farmer.

BRAMBLE HILL

By ROBERT CARLTON BROWN.

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Watts shuffled on into the house and directly to the piano, not bothering with a light. "Don't stay out too long, Jerry, it's damp," he called through the window to her before sinking into utter forgetfulness of all in his music. Watts was a drunkard of harmony. Music had been his hope, his realization and his reward in life.

Jerusha knew that his music had made up a great deal for her absence, yet her throat throbbed as she heard a new note of loneliness in his playing. Well, she was home at last, and it had been worth while. She slipped back to her seat on the mossy boards, tucked her skirt well around her ankles and leaned against the pump with a luxuriating sigh, listening to the loving, lingering touch as Watts soothed the instrument into crooning a soft melody. It seemed more as though he stroked the piano than played it.

Jerusha slipped back comfortably to the thought of a night a year and a half before, when she had sat with Sidney and dreamed of Venice. Yes, she had had her Venice; she knew San Marco and the Bridge of Sighs. She had sifted romance slowly through languid fingers, gliding at night through weird, wavy canals, listening for the notes of those ghost love- serenaders of the past. She had sat on the marble balcony of an old color-crazy castle and gazed at the elfine lights dancing on the waters below and wondered and wondered. Ah, yes, she could picture it all out so easily now. The tall green grass at the side of the well was a shady canal, all streaked with the quivering shadows of palaces in pastel. The moon was twinkling up through the haze across the silent fields. Here was Venice indeed; she mentally revelled in the babel of color. The soft tints, the melting tones her thirsty eyes had drunk down to the last drop were real before her now. For she had been to Venice and seen. Watts' music was coming from a gondola over there. She recalled how she had played the scene with Sidney. She had said she was hiding behind a pillar peeking out to see if he were coming—

At that moment the staggering front gate lurched open and Jerusha peered through fingers she had put before her eyes to aid in recalling fairyland, to see what had sunk her gondola, shattered her dream.

It was Sidney. He had already seen her and was coming toward her, walking absently, listening to the melody Watts was pouring out.

Sidney stopped as he reached the well. Sitting down beside the slight form, they heard Watts through to the finish without a word. Then by some strange magnetic influence each looked straight into the eyes of the other.

"Venice," said Sid.

"Yes."

"You were there."

"It was more than my dream."

"Then you haven't forgot?"

"Have you?"

Sid's eyes shifted quickly to a less personal look. Watts drifted on, hand in hand with poppy-eyed Memory, in another field filled with songs of sun and birds.

"I wanted to talk with you alone," Sid began. "I wouldn't have tagged after you like this if you'd been inside with Watts. I wouldn't have spoiled your being together. Something sort of pulled me out of the house and down to the cottage here, and when I saw you sitting out here alone, selfishly monopolizing the moon, I just had to jump over the fence into your peaceful precinct and bother you."

"I thought you came in by the gate," she said.

"Oh, confound it. I'm feeling poetic tonight. Can't you humor me? You don't understand; Jerry, I'm more or less in love."

"Indeed?" She looked at him with surprise, and something strangely primitive and plain crept into her expression, tightening the muscles about her mouth, narrowing her eyelids the least bit, as though in self-protection.

"Jerry, you don't know how I've missed you. I thought I couldn't get along without you. I—I—" the slight sound of a pent-up breath came from Jerry; it seemed like a sigh. "You haven't forgotten the good times we had?"

"No," she said, in a level tone that

would turn up the least bit at the end, try as much as she did to keep it straight and direct.

"But I won't bother you with my story. You're probably in love yourself," he continued falteringly.

"With Venice, yes." She felt the same tightening of her lips that had come unconsciously when she had gone to school and peered sometimes into the brimming lunch basket Susan Dunlap always opened at noon hour.

"Oh, Jerry, confound it! I might as well tell you everything. There's something about you that inspires confidence. I think I'm in love with Susan Dunlap."

With care she succeeded in relaxing the muscles that had tightened her lips defensively. They allowed the utterance of a few measured words. "I'm so glad to know it, Sidney. But you must do better than think you are in love."

"Oh, I suppose so. But there's a purse-proud person by the name of Harold Ewer, a supernumerary; and besides, Mr. Dunlap imagines I mixed something more deadly than seltzer and milk in Chicago and he won't allow me to call on Susan. With these two beautiful bunkers between me and the hole of proposal, what am I going to do?"

"Tee off again and see if you can't clear both at once. You can if you are really in love. But you don't seem to know. You ought to be very careful in anything like that, you know."

"But how can a man be sure he's in love until he actually proposes?" queried Sid.

"I haven't an idea, I'm sure. My experience has been very limited. But I always thought a man knew he was in love before he proposed."

"So did I," answered Sid reflectively, "and I dare say he does; now six months ago, when I came back from my vacation in New York I seemed sure that I was in love with Susan. She believed in me and the rest of the town didn't. I almost proposed and that made me sure I did love her. But I can't be certain, I—"

"Oh, you're as coy as a young girl," Jerusha cut in. "Does she love you, that's the point?"

"Oh, certainly not. I wasn't thinking of that; you see, that's what I've got to find out and I must propose in order to know. I'm looking for another chance to propose to her now, and if I pull it off all right, if she should be foolish enough to really accept me, why then I'll be quite sure that I'm in love with her."

"You're getting too self-centered. Being alone has made you look too deep into your soul. You must get over this absent treatment you give yourself. Find out the facts. If you are in love with Susan I'm glad, but if you aren't, don't try to fool yourself into it in order to—"

"That's just the trouble! You see, if it weren't for that confounded will I'd know for sure that I'm head over heels in love with her. My doubting doesn't come entirely from being self-centered. I can't help thinking that I'm trying to fall in love with Susan so I can benefit by the will. With that will in the way how can I be sure it isn't prejudicing me?"

Jerusha's eyes drifted away, then came slowly back to Sid and addressed him soberly for some seconds. Confused by the constant gaze he flushed and demanded, "Well, how am I to know?"

"There's a certain language of the heart," she said, "an esperanto of the eyes. The vocabulary is limited to three words. Love holds the key to those, Sidney." She looked at him so strangely that he was forced to drop his gaze. "When you meet Love and kiss his hand and ask his aid he gives you the key to those three words. He teaches you to say them with your eyes, to show them in your manner—your every move, to speak them with your lips, and to live them."

"I guess you're right, Jerry," admitted Sid thoughtfully, as the plaintive piano within began again to croon, "Ich liebe dich."

Hard days for Sid! He was torn between a score of desires, needs; possessed with a hundred doubts.

If only Jerusha had proved the same old comrade. He had been ready to pick up their friendship where it had been dropped—even anxious. But Jerusha seemed preoccupied. He couldn't get as

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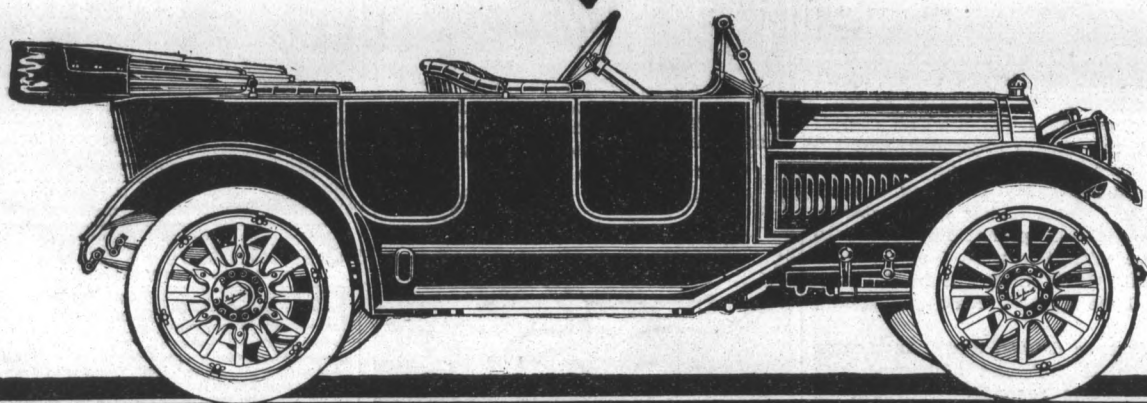
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close to the real girl as formerly; there seemed to be a psychic barrier between them. Probably it wasn't her fault. The change in her bearing, the modish clothes she wore; those things put her on a par with girls he had known in New York and at college. Whatever it was, she didn't seem the same to Sid. The old comradeship was missing. Each had a strained and unnatural manner in the presence of the other.

Then, too, Jerusha was busy those first days of her home-coming. A big box had followed her by freight. It was full of things she had picked up abroad. The bulkiest and most cherished of all was a bundle of old weather-toned sails she had bought for a few guilders from an old Zellmaker at Volendam. Wonderful richness of red tones in them all, weather-ripened color she could not resist. With these she had hung the five rooms of the cottage. Ideal tapestries! They gave their warmth to everything in the rooms; they formed a wonderful background for the prints Jerusha had bought.

She had not stopped with the walls, but had worked on daily with the needle, saw and hammer. Jerusha was no dainty work-lady. She knotted up her hair on top of her head, rolled up her sleeves, tied an apron and waded in. The place for her was in the thick of things, on the firing line.

"It's just what I've wanted to do for so long," she exclaimed enthusiastically to Sidney one day as he loitered past the house, lingering for an invitation to come up and talk. "I never had the money to do it before. But now that I've saved a little that's all my own it's—well, it's as good to see this dream come true as the Venice one. And Watts takes such delight in the changes; he doesn't overlook a thing, not even that bit of heather in the corner there. He does enjoy everything so, and he's as happy as a boy. Just look at that chair! Watts hasn't seen that yet. Can't you imagine him sitting in it? It seems just built for him. And it only cost two dollars and forty cents." She pointed to a mission wood Morris chair that had come from a take-down furniture factory and been put together piece by piece by her clever fingers. Sid approached it admiringly, but she warned him off. "Don't touch it! The glue isn't dry yet!"

He stopped and turned his appreciative gaze to her.

"You put me to shame!" he cried. "Here you come home from Paris, Venice, Holland, New York, London and heaven knows where. You come back looking like Cinderella going to the ball and first thing you do is to take off your finery, put on a varnish-daubed skirt and go to work like a carpenter and joiner. It's like a fairy story. How'd you learn all these things? How'd you manage to get along so well in the other life, and learn so much? Tell me again about those Parkers in Oak Park; that mother of Mrs. Parker must be a wonderful witch to work such a miracle with you; but I suppose you did it all yourself."

"No. She did it. She was like a real mother to me. But I haven't changed much. I've just grown. I was so happy to try and climb up to her expectations. It took time, but I was so busy the whole while, it doesn't seem more than a month."

This was the most Jerusha had said to Sid about her benefactress. She had been slow to say much for fear Sid would guess that she had been with Aunt Raimer. She had merely explained sketchily about the Parkers and her travels with Mrs. Raimer, whom she did not name. The whim of keeping the secret from Sid was half her reason for not telling him, but more important than that was the fact that she didn't want Doodle to follow her to Turtle Creek. She knew he would come if Sid wrote him that he had learned at last that Jerusha Wattles and Elisabeth Walters were one and the same. She enjoyed the novelty of a dual personality, and Doodle's interest in her had become so intense that it worried her. She had adroitly managed to keep him from proposing until she should know her mind better, and she could not have him follow her to Turtle Creek.

"But you're such a marvel," Sid enthused, as Jerusha turned abruptly to saw a board length for a kitchen cabinet she was making. "Here!" Sid reached for the saw. "Let me do that!"

She jerked the saw away from his grasp and threw back her head, laughing at him in the same droll, boyish way she had the first time they ever saw each other.

"You!" she exclaimed.

He smiled guiltily, recalling their first

meeting and seeing in her eyes that she had referred to it.

"Oh, I'm not so ineffectual as I was then. I've carried two pails of milk and worked at two Pike County Reunions since."

"You'd get your hands dirty," she echoed up the past. "Besides, the saw might slip and cut your thumb."

He grinned, reached over and took the saw from her.

"History will repeat itself without your aid," he replied. "I will rise to this emergency as manfully as I did to the other. Watch!" He successfully sawed the piece of wood, though somewhat on the bias.

Meanwhile Jerusha had turned to braid some heavy rough twine into a hanger for a little Japanese flower-holder she had decorated herself. She started under Sid's admiring gaze, which he had turned on her as soon as he had finished.

"You are industry personified," he smiled. "The Modern Minerva! The original Mrs. Robinson Crusoe. Mrs. Dr. Jekyll and Mrs. Hyde, I think you went robbing automobiles of the gentry on the public highway."

"That's as good an explanation of my absence as any. I only wish Aloisious Stimpson thought as charitably. Watts says Stimpson asks a new question every day about what I did while I was away."

Jerusha dismissed Sid half an hour later. As he walked away the blanket of gloom he had lately gathered settled down over him again. He wasn't happy. He couldn't place the feeling, but something seemed to stifle him. He had forgotten it while talking with Jerusha, but now it returned to bother him. He took a deep breath and tried to square his shoulders. He was depressed. Vaguely he felt it was something about Susan, or Jerusha, he didn't know which. Jerusha bothered him; he didn't feel on the old intimate footing with her any more. Her mind seemed to be on other things; he always felt she was bothered by his presence and that she was not as frank with him as before.

Possibly it was only the morbidity of his thoughts that made it seem that way. He remembered her warning about being self-centered. He had thought too much about himself recently. But then, those thoughts had been forced in on him and had registered of their own weight. He had lost out in Turtle Creek. That was something to brood about. He hadn't the nerve to tell Jerusha that the railroad had beaten him, that he was only remaining in town because he had no idea what else to do, and because he was really dumbly attached to the old farm.

Yes, the railroad had begun to cut through the Edgeworth farm. Already nearly a quarter of a mile of track had been laid at the upper end of the land. There was no way to stop it, and with half of the available land gone the farm would hardly pay expenses and there would never be a chance for Sid to make more than twenty thousand altogether of the hundred thousand required before he could inherit his grandfather's estate.

Of course, marriage with Susan Dunlap was now almost out of the question. Sid had lost. He admitted it. It was the beginning of the end.

As he strolled along the Edgeworth private road toward home Sid came suddenly upon Lafe Turner. Sid nodded and would have passed on, but the little old fellow stopped him with a querulous squeak: "Ol' Stimpson tells me you're goin' ter have company." He licked the words around lovingly in his mouth, gossip being golden honey to him, and to call Aloisious Stimpson "old" behind his rheumatic back was nearer to a sense of utter intoxication than the Rhesus-faced usually came, out of hard-cider season.

"Is the minister going to call—or the sheriff?" asked Sid.

"Neither. It's a young fellow from Noo York," and he ogled his eyes out of the safe, deep pockets they usually rested in. "It's news to me."

"News to you? News! Why, everybody in town knows it by now. Ol' Stimpson says he seen the telegram himself. They had it up to Niles Pash's store. It's true enough, all right."

"The telegram?"

"Yep. I reckon you know what a telegram is, after the scandalous one you yourself sent two year ago to this same young feller, or one well nigh as worthless."

"Doodle! Coming down to visit!" cried Sid. "Fine! Jerry'll be glad to meet him. We'll have a—" he cut off abruptly, conscious of Turner's interest in his exuberant soliloquy.

(Continued next week.)



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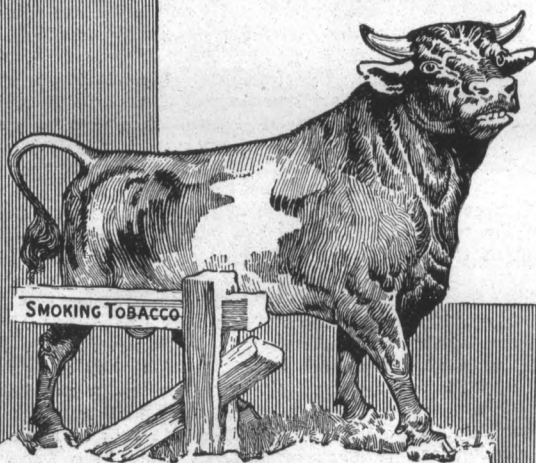
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DETROIT, FEB. 1, 1913.

CURRENT COMMENT.

There appears to have been Eugenics, an awakening throughout the civilized world with regard to the importance of this science, or at least that department of it which applies to the human race. The ultimate aim of modern eugenics as defined by Prof. Wilcox, the well known Cornell Sociologist, "is to modify in desirable ways the inheritance of the future generations." This modern realization of the faults that have existed throughout the history of the human race, is perhaps largely due to the research of Francis Galton, the English Anthropologist. The idea has been persistently advanced, however, by modern educators and sociologists, including Governor Ferris, of Michigan, who recently issued a proclamation designating February 9, 1913, as Eugenics Day. The Governor's proclamation follows:

"Every child has the divine right to be decently born. It is worth while to recognize the laws of heredity and variation in producing the highest and most profitable types of flowers, fruits, grains and live stock. They have a marketable value. Man has a money value five times that of all other forms of wealth. We are busy enlarging our prisons and hospitals, because we ignore one great source of crime and disease.

"On eugenics day, Sunday, February 9, let every patriotic man and woman in the great state of Michigan give his best thought and most earnest prayers to the welfare of coming generations. The greatness of every state lies in clean, robust fatherhood and motherhood. The state has a right to demand a better race, has a right to eliminate the causes that degenerate and to establish firmly working principles that will give to everyone a fair chance to begin life at a decent angle and then make progress."

There can be no doubt that much good might result from all the people of the state giving special attention to this subject, particularly in relation to promoting fitting marriages among the young people of their family or social circles and to providing proper environments for the children of the family or neighborhood. While such consideration cannot but be beneficial among country people, there is far greater need of it in the more congested centers of population.

It is, however, a matter for congratulation that the rural sections of our country have been able to furnish young, healthy, vigorous blood and clear, active brains to help elevate the standard of citizenship and maintain the industrial progress of our commercial centers. It was estimated by Prof. Wilcox, after an investigation of the subject, that every hundred men who graduated from Harvard 25 to 30 years ago have among them only 75 living sons, from which the conclusion may be drawn that good old American stock is being supplanted by recent immigration and by the children of less desirable parents, reared in environments not the best for their future development into valuable citizens.

It is, however, an undeniable fact that

there are less young people in the rural communities of our state and country than for generations past. True, this is somewhat due to the fact that a large element of our boys and girls drift to the commercial centers and go into lines of work other than agriculture, yet the decreasing school population as reflected in the many small rural schools of the state and country shows that this is not the only reason. Hence the conclusion that the general direction of public attention to this important question of eugenics has been already too long delayed.

Workmen's Compensation Law.

Several inquiries have recently been received asking for information regarding the workmen's compensation law, particularly as to whether it applies to farmers or not. The provisions of this law are too complex to permit space being given to a complete digest of same. Briefly summarized, however, the law applies to all employees of the state, county and other municipalities, except officials, and workmen of other employers who elect to come under the act. Employers may elect to come under the act by giving notice in writing to the state board administering the law. Employees who do not give notice to their employers that they do not intend to be bound by this law come under the act and in case of gross neglect on the part of the employer or his violation of any safety statute an employee may elect under this act or at law.

The law is administered by a non-partisan industrial accident board of three members who have broad powers as to the method of administration. The law also provides for the arbitration of claims for compensation where disputes arise. The compensation for death by accident, to be paid to those who were wholly dependent upon the deceased, is fixed at 50 per cent of the wage of the workman for a period of 300 weeks with minimum and maximum weekly limits of \$4 and \$10 respectively. Where survivors were only partly dependent upon the workman the compensation provided is in proportion to the contribution of the deceased to the dependent within the same limits. Where there are none dependent, compensation is provided for last sickness and burial not to exceed \$200.

There is also a compensation for total disability amounting to 50 per cent of the wages for a maximum period of 500 weeks, the maximum amount not to exceed \$4,000, with a minimum and maximum weekly limit of \$4 and \$10. Total disability under the law consists of loss of two members, or brain or spinal trouble.

For partial disability the law provides for a compensation amounting to 50 per cent of the difference in wages before and after the accident with specified times for loss of different members, a weekly limit of \$10 and a maximum time for compensation of 300 weeks.

Another provision of the law permits the state insurance department to administer accident insurance against losses to employers electing to take advantage of this phase of the law, which a considerable proportion of Michigan employers coming under the act have chosen to do.

There are special exemptions from compensation liabilities which include domestic service, agriculture, casual employment and that not for the purpose of the employer's business. Thus, under no circumstances can the law be applied to farmers.

This law appears to be an exception to most statutes in that it has proven acceptable and satisfactory to both employers and employees. It affords the employee positive assurance that in case of an accident compensation will be awarded to him or his family with a waiting period of only two weeks, or none at all if disabled for eight weeks or more, before the period of compensation begins, and that without the uncertain or costly litigation necessary for the securing of anything like adequate compensation under the old plan where the only recourse was a court of law or an unfair settlement. Likewise, employers find that it is better for them, both in the better satisfaction it gives to their employees and in the matter of avoiding litigation or undesirable publicity which always results when damages are sought through the courts.

In fact, about the only source of dissatisfaction with the law is the indemnity insurance companies who have made a business of insuring employers against loss from accidents to their employees. Naturally these companies do not like the state insurance phase of the law, but

the law has not been in force long enough to permit them to make a readjustment of this business and this opposition may not be permanent. Undoubtedly the class of attorneys who made a business of industrial litigation are also opposed to the law, but their opposition will have little weight in any quarter. There are bills before the present legislature providing for the amendment of this law. It is, however, probable that in view of the very satisfactory working of the law as between employers and employees no radical change will be likely to be made in its provisions.

The law was drafted by a special commission appointed by Governor Osborn, who devoted considerable time to the study of the proposition, and the results have fully justified this means of formulating legislation so important in its effect upon a large class of people and many important industries.

The unusually mild Preparing for the winter would appear Spring Campaign.

to be a promise of an early spring, in consideration of which fact it is time to be making preparations for the spring campaign. Materials which will be needed, such as seeds, fertilizers and lime, where the latter is to be used as a soil corrective, should be ordered early so that they may be at hand in season to avoid delay in the advancement of the spring work. Likewise the implements which will be needed should be secured and those already at hand should be placed in the best possible condition for effective use.

If a farm shop is at hand which is equipped with simple but effective tools, much home repair work can be done, and if a good tool grinder is included in this equipment the repair tools can be kept in condition to do effective work and many of the implements used about the farm can be placed in much better condition than if such a shop is not maintained. A simple repair shop of this kind is an important part of the equipment of any farm.

In the selection of new equipment for the farm it is an excellent practice to get catalogs and literature from the firms advertising in your agricultural paper, as much valuable information can be secured which will be of value in the selection of implements or equipment best suited to the particular needs of the farm. A little attention given to these matters at this season of the year will be time well spent and will be likely to save both time and money in the coming season's campaign.

Personal Equation in Farming.

While other industries have been commercialized and largely concentrated during recent years, yet agriculture has remained an individual or family business. It is true attempts have been made to conduct the business of agriculture along broader commercial lines, concentrating large special industries under a single management, but generally with much poorer results than are secured when the personal equation enters into the accomplishment of the work as well as the planning of the campaign.

One need not look very far for illustrations of this fact, but perhaps the failure of attempts to conduct big fruit enterprises along this line would appeal more forcibly to Michigan readers than some others with which they are not so familiar. Some years ago a number of successful Michigan peach growers decided to pool their interests and produce peaches on a large scale in a favorable locality in the south. Notwithstanding the fact that they were fully conversant with the business it never proved profitable, even in seasons when good crops were secured, because the personal equation in the accomplishment of the work was lacking as compared with the same kind of business conducted upon an individual or family scale.

Farming is essentially a family business in which the home which the farm provides is no inconsiderable part of the compensation afforded, while the necessities and luxuries which are derived from the farm also figure in the matter of compensation. From the attempts which have been made to commercialize agriculture, of which the above incident is but one of the many examples which might be cited, it would appear that the economists who predict the passing of the small farms and the centralization of agricultural management have made an error in their calculations. The histories of older countries would seem to prove the same thing, since in most of these countries the large estates are be-

ing broken up into small farms, and the small farm with the owner living on the land is conceded to be the best solution of the agricultural problem.

In the Grange department of this issue will be found reference to a census taken in Kent county under the direction of the government field man, which revealed the fact that the average age of the men who are doing the farm work in the county is above 50 years. It is not uncommon to hear men remark, upon visiting an old community with which they were familiar in their boyhood, that there are far less young men than was formerly the case, either owning farms or working upon them. True, many of the young men have entered agriculture in some newer field, yet many of them have sought other occupations which in all probability will be less remunerative and a source of less satisfaction in years to come than the opportunity offered them upon the farms of their home neighborhood.

With the advancement which has been made in scientific agriculture and the opportunities which have been afforded for agricultural instruction in our high schools and colleges, including the special short courses, there is certainly plenty of opportunity along this line for all who may desire to follow agriculture as a calling and, in very many cases, these opportunities are far superior to those which seem to young men to be more alluring. These are opportunities which no young man should neglect to consider when choosing his life work.

HAPPENINGS OF THE WEEK.

National.

The hotel workers of New York city do not appear to be meeting with success in the strike now on. Reports have it that during the present week they will likely go back to work without having gained the demands for the refusal of which they walked out.

Differences between 54 eastern railways and the Brotherhood of Locomotive Firemen and Engineers have not been adjusted. The workmen are now taking a strike vote to determine whether they will walk out or not. Both parties have signified a willingness to arbitrate their differences but the cannot agree on the methods of arbitration.

Because of the increased danger to workmen in the blasting of mines when there is a marked fall of atmospheric pressure, the weather bureau is arranging to notify mine owners when conditions are most favorable for doing this part of the mine work, thus helping to reduce the number of accidents from this cause.

On the morning of January 26, with appropriate ceremonies, the body of John Paul Jones, the first great naval fighter of this nation, was laid away in the crypt especially prepared at Annapolis.

Memorial services in honor of the late Congressman W. W. Wedemeyer were held at Ann Arbor, Sunday. Many prominent national and state officials and educators spoke at the exercises.

The Detroit police department seized a large amount of opium, morphine, cocaine and other dangerous drugs in a raid on a pharmacy in this city last Sunday.

A fire in the upper stories of a hotel at 36 Woodward avenue, Detroit, early Monday morning, drove 40 guests into the street and did damage estimated at \$50,000. The origin of the fire is unknown.

In the number of violent deaths in New York city during the year 1912, the figures are appalling. There were 3,712 such casualties. One hundred and forty-six of the deaths were caused by automobiles, which was 55 greater than for the year 1911. On Manhattan there were 114 homicides, which was an increase of 21 over 1911.

The Twelfth Annual Automobile Show is being held in Detroit this week.

Orders for steel rails the past week were large, aggregating 150,000 tons.

Cleveland, Ohio, is working for legislation that will enable the city to take over the electric car lines within her limits.

Foreign.

Dr. Friedmann, of Berlin, who claims to have discovered a cure for tuberculosis, has arranged to come to this country and demonstrate to the medical profession here the merits of his discovery. The demonstration will take place in New York city.

Rebels are again active in Northern Mexico. The Mexican Central railway has been cut off a short distance below El Paso and the rebel General Marcelo Caravero, with about 500 men, is reported to be operating south of Juarez.

According to reports there may be trouble between Bolivia and Peru. The former country is anxious for a port on the Pacific ocean and in order to get this she must obtain territory either from Peru or Chili. Her attitude toward Peru suggests that an effort will probably be made to secure territory by the use of arms. War preparations are now being made, supposedly with this purpose as the objective.

A dispatch from Barcelona is to the effect that an attempt was made upon the life of Archduke Louis Salvador of Tuscany, by a workman.

The American gunboat Wheeling, which was ordered to Vera Cruz, Mexico, by the

American government arrived in that place last Sunday morning. Judging from the reception given the ship and its officials, they were not welcomed by the Mexicans.

Although it seemed certain that war would be resumed between Turkey and the allied forces last week, since there has developed a possible hope for reconciliation which caused a continuing of the conference between the representatives by the attitude of the agents of the Balkan states. They are, however, insistent in their demands for the surrender of Adrianople and the Aegean Islands.

Under pressure of the opposition of the young Turks, who are anxious to prosecute the present war, and are against the surrender of any part of Turkish territory in Europe, the Turkish cabinet resigned last week and during the excitement the former prime minister was assassinated. It is generally considered that this tragedy was a distinct loss to Turkey since the leader of the government who had personally gone out and reorganized the remnants of a badly defeated army into a fighting machine that succeeded in staying the march of the allied forces on Constantinople, was considered the most able man in Turkey.

The British government has announced that the bill providing for woman suffrage will be withdrawn, thus defeating once more the attempt of the suffragists to secure the privilege of voting. From the demonstration following this announcement it is apparent that the militant campaigns heretofore reported will be eclipsed in the coming fight for political equality.

CROP AND MARKET NOTES.

Livingston Co., Jan. 27.—The weather this month has been very peculiar, thaw, rain and freezing, and then repeat. It has been very hard on wheat and seeding, sleet and ice being on the wheat at this writing. Not much grain moving to market, farmers waiting for the after-holiday raise in price. Stock is being marketed quite freely and prices paid are good.

Shiawassee Co., Jan. 22.—Ground covered with about five inches of snow. On account of the thawing roads in bad condition, there being neither sleighing or wheeling. Teaming at a stand still. Farmers busy getting up winter supply of wood. A large amount of water standing on wheat and rye and undoubtedly will cause considerable damage. A large quantity of hay being marketed. Live stock of all kinds commanding a high price. Horses changing hands at a high figure and good animals in strong demand. Very few hogs in the country. Live stock of all kinds in a healthy condition. A large amount of building will be done in this locality the coming spring. A number of new houses and barns will be erected. Lambs are being constantly shipped out for market and so far have been giving feeders fair returns for their labor and feed.

Lapeer Co., Jan. 22.—Mild period again. Farmers are selling their potatoes, which are at present bringing 40c per bushel; also baled hay is being seen on the highways every day on the way for shipment, prices, \$10@12. This mild weather is saving us feed and is also a slight let-up on fuel for our dwellings. Live stock is bringing good prices. It is coming just as we expected, in that the bulk of the great crop of apples is now in the hands of the dealer and prices are now high, while in selling last fall the farmer had to accept the almost give away prices or take them back home. The average samples of beans in this locality was not up to the standard. They picked heavy, leaving but a very small "price" for the farmer on account of the "gouge." Local dealers pay about 90@95c for wheat; oats 40c; corn, 60c; those having rutabagas, beets, carrots, parsnips, etc., get good prices.

Isabella and Southern Clare Co.'s, Jan. 20.—No snow so far this winter for sleighing. Just had a January thaw; froze up the 18th and the roads are very rough. No work being done on the farm to speak of except buzzing up the year's wood. No hay being sold at present and the buyers do not get many beans that are dry enough to ship and the sugar beet men are not kept very busy writing contracts, as the farmers do not think they get a square deal this fall. One farmer lacked \$180 of paying expenses on his crop. The beet station man tared his from 22 to 70 per cent to the load, yet they say the beet industry must be protected.

Ohio.

Wayne Co., Jan. 21.—We have been having a very open winter so far with lots of rain, beginning with a snow blizzard on the 3rd, about three inches of snow having fallen, warming up on the fifth and having heavy rains, causing quite a flood and continuing for about two weeks. Wheat prospects looking good at present, being quite nice and green. Hay No. 1 timothy, \$11.50; wheat, \$1.10; oats, 32c; corn, 50c.

MICHIGAN FARMERS' INSTITUTES.

County Institutes.

Mecosta Co., Big Rapids, Feb. 3-4; Newaygo Co., Fremont, Feb. 4-5; Muskegon Co., Muskegon, Feb. 5-6; Oceana Co., Shelby, Feb. 6-7; Barry Co., Hastings, Feb. 7-8; Berrien Co., Benton Harbor, Feb. 10-11; Cass Co., Cassopolis, Feb. 10-11; Kalamazoo Co., Vicksburg, Feb. 11-12; St. Joseph Co., Sturgis, Feb. 12-13; Jackson Co., Grass Lake, Feb. 12-13; Branch Co., Coldwater, Feb. 13-14; Hillsdale Co., Litchfield, Feb. 14-15; Galhoun Co., Marshall, Feb. 14-15; Monroe Co., Dundee, Feb. 17-18; Livingston Co., Howell, Feb. 18-19; Lenawee Co., Adrian, Feb. 19-20; Wayne Co., Romulus, Feb. 19-20; Oakland Co., Pontiac, Feb. 20-21; Washtenaw Co., Saline, Feb. 20-21; Kent (Continued on page 133).



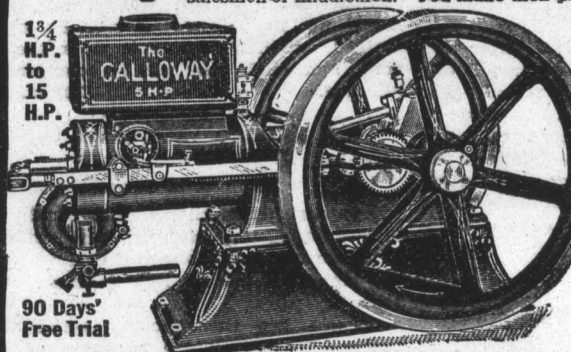
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Fred Ruthardt, Mt. Vernon, S. D. I must say the engine is all right. I saved about one hundred dollars in buying from you. I don't want to be without the engine, not at all. I use it for shelling corn and grinding feed.

Frank Peck, Dorchester, Neb. My Galloway Gasoline Engine does lots of work for me. It shells corn, saws wood and grinds feed. I have no trouble with it. It is simple and easy to start. My twelve-year-old boy starts it easily.

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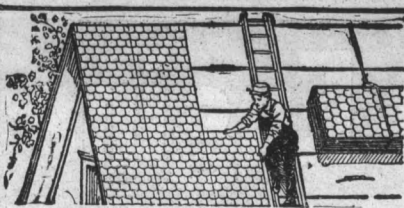
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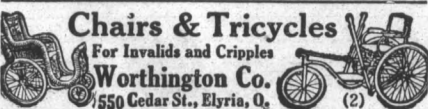
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Work That Demands Talent

WHEN I was seventeen I started away from home, armed with a formidable certificate, to teach school. At the same time a classmate, aged nineteen, married and started to keeping house. One of her favorite past-times was to tell me how much more important her work was than mine, and how much more real ability it took to keep house than to teach school or do any other sort of work. I did not believe her, but I kept still, partly because she could talk so much faster than I could that I knew I hadn't any chance in an argument, and partly from a large tolerance, which told me that so long as I had right on my side I might as well humor her and let her think hers the important work.

When later in life I married, after trying a couple of other professions, I was glad I didn't contradict my friend. For I found out she was right. If there is any trade in the world that calls for more knowledge, more tact, more patience, more imagination, more executive ability than housework or has more direct bearing on the well-being of the individual or the welfare of the nation, I should like to know what it is. I would not want to try it, however. Housekeeping calls for every ounce of gray matter and physical strength I possess, and if there is anything that demands more of a woman I don't want to take it up. Of course, there are a great many housekeepers who do not give the work the thought and attention that it demands, but one glance at their house or their children will show they are not making good.

The executive ability demanded to make a house run smoothly if directed to business ought to make a woman a millionaire. Think of the planning to be done in a well ordered household. The meals are the smallest part of it. There is the buying, and selling, too, if it is a farm home; the watching for leaks here and need of repairs there; the keeping of the household linen, seeing that the garments are mended and clean, taking care of left-over foods, watching for any hint of sickness or wrong feeding; looking after the water to see it is always pure and the milk, too, for that matter; the laying in of supplies for winter; thinking of ventilation and sanitation, and a thousand and one minor details that great, strong, brainy man wouldn't bother with. No, nor his equal, the woman who thinks that woman's sphere is too narrow for her if it is confined to housekeeping.

The question of disciplining the children alone is a weighty enough one to cause sleepless nights at times. Just what is best to be done in certain cases to correct faults which may assume gigantic proportions in future, is not easily decided. Johnny is sick and demands constant attention. He isn't very sick, but he thinks he is, and wants everyone to be on the jump from morning till night, waiting on his small self. John's aunt, on his father's side, of course, is simply awful when she is ill. She is always sure she is going to die and keeps the whole family and all the neighbors who venture in, running upstairs and down for hot and cold water, milk and tea, toast buttered and toast unbuttered. And if you rebel she cries herself into a fever.

You can just see Johnny growing up into the same abnormal mold, and have a vision of yourself, and his wife and daughters and granddaughters after you, running pell mell hither and thither to humor him. Then you shut your lips grimly and decide that "This must be taken out of him." Just then Johnnie lets out an awful "Wow!" and you run to him, excusing yourself with the thought that he is only four years old and you mustn't expect too much of a baby. Probably Grandmother Brown made the same excuses for Aunt Mary, and look at what she has on her hands today! Which is best, to follow your instinct of humoring a baby, or to take thought of that coming line of women who are to

be burdened with a tyrant if you do not do your duty today?

Housework and homemaking call for no particular talent, say many women. Anyone can do it. Perhaps anyone can, but as a matter of fact, few do it right. It always makes me angry when I hear a group of women speak in tones of contempt of the preceding generation of women, who knew little outside of the home, and plume themselves as being so much farther advanced intellectually. As a matter of fact, the successful housekeeper is better trained intellectually than the college graduate who can name every bone and organ of the body, but doesn't know how to wash and dress and feed a baby. When women and girls make up to this fact and are again trained for their real life's work the divorce and drink evils will be considerably lessened.

DEBORAH.

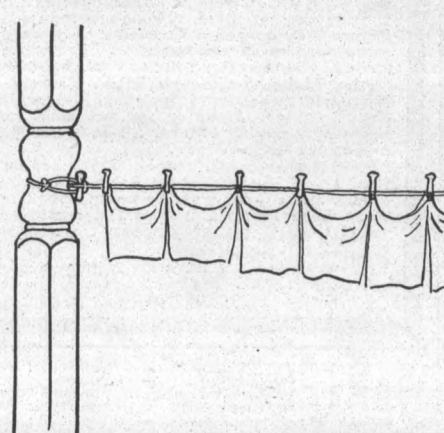
A ZERO WASHDAY.

BY ELLA L. LAMB.

Dropping her clothes basket beside the tub, Sally Gunn plunged her stiffened fingers into a wash basin of cold water at the sink and gritted her teeth at their ache.

"Where are those roomy white wool mittens I knit for you to hang up in?" queried Grandma from her mending at the south window.

"Up there," and Sally waved toward the cupboard. "I didn't think it was so



cold. But they are too clumsy to wear when I hang up those little things," she said, glancing at the piles of handkerchiefs, towels and the dozens of small things that help make up the wash of a large family.

"Where are those white canvas gloves you got by trading at Mills'?"

"Worn out; and being cotton they were worse than nothing when they got damp."

"Did you ever try dipping your fingers into vinegar before you hang up clothes in freezing weather?" asked little Mrs. Jones who had run in from across the road.

"That might be a good thing if only I could dip my toes too," remarked Sally, dancing on them to restore their circulation.

"In winter I used to hang our clothes in the attic at home," said Grandma reminiscently.

"I put my small things on the clothes bars and stand them over the register on days like this," put in Mrs. Jones's sister who was visiting her.

"Bob put up some sticks across the ends of the east porch this morning," began Mrs. Jones, "and I have put up some cotton lines. I shall hang my clothes there this winter though I do dislike seeing the lines up there all the time. Bob grows every time he forgets to duck his head and loses his cap but he prefers it to making paths under the lines in the yard. Since I dip the corners of my handkerchiefs, napkins, etc., in salt and water they don't freeze to the line and tear. Clothes do seem so much cleaner when they dry out in the sunshine and fresh air."

"Even at the expense of nipped fingers," added her sister.

"This child don't pay that price again," exclaimed Sally Gunn, as, with the freedom engendered by frequent calls between dear friends and near neighbors, she took up a cotton line and went out on the porch.

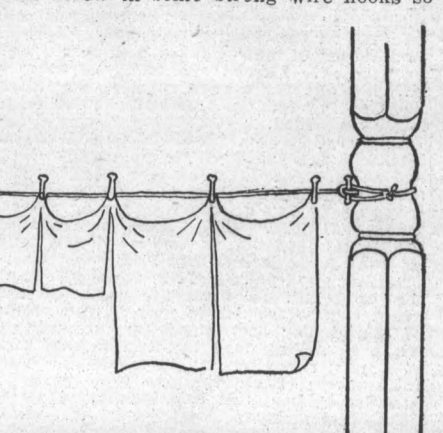
Passing the end, on which was a loop, around a pillar she fastened it with a clothes pin and measured the length required to stretch the line to the next post and around it, allowing for a loop in the end.

Coming into the house she cut the line and, measuring off three similar lengths, tied loops in both ends of each while the other women watched her curiously.

Taking up one of the lines and glancing around the kitchen, she passed one loop over the hook beside the door where hung the door key and the other one over the hook which held the kitchen towel. On the line thus suspended across the corner of the room she began quickly to hang the wet handkerchiefs. When one line was full she carefully took it down and placed it in the basket, and filled the second line, crowding them shamelessly, it must be confessed. When all were filled she carried them to the porch and again hung up the lines, with the clothes fluttering on them, between the pillars, securing the ends by clothes pins through the loops in each end of the lines.

"And we never thought of doing it that way!" laughed Mrs. Jones.

"Poor Grandma," remarked Sally from the doorway, "she has never been able to decide whether I am afflicted with laziness or ingenuity. I think Henry will put up some sticks across the ends of the porch as Mr. Jones has and I will have him screw in some strong wire hooks so



it will be an easy matter to take down the lines when we are through with them for the week."

OUR GRANDMOTHERS' HOMINY.

BY CHARLOTTE BIRD.

IN colonial days and even as late as the Civil war, when foodstuffs were comparatively scarce and very expensive, home-made hominy was very well known. But now it has been relegated to the past, along with spinning wheels and looms. Still, there is no reason why this should be. A poor make-believe can be bought in the stores but it is not worthy to be called even a first cousin of the ancient home product.

It costs some trouble and considerable time to make good hominy. But in cold weather it can be kept a week or two. It makes an appeal to the appetite which renders it well worth the trouble. And especially to the farm home, where in any case the kitchen range has to be kept going all day, the cost is practically nothing. This in a time of much expense is an additional reason why we should cultivate its acquaintance.

Here are the directions for making. Our grandmothers used a weak lye made of wood ashes in which first to boil the corn, but this is not really necessary because cooking soda will serve the purpose very acceptably. According to taste, one may use white or yellow corn. The white will look nicer, but the yellow may have the finer flavor. To one quart of the corn add two tablespoonfuls of baking soda and soak all night in just water enough to cover well. In the morning place over the fire and boil two and a half hours or till the hulls come off



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readily. As it cooks, keep adding more water as is necessary, for the corn will swell to about twice its original size.

Drain off the lye, pour over other water and rub off the hulls. Keep this up till the hulls are all gone. Boil another hour and drain again. Fill up with more fresh water and then cook slowly till the corn is tender. Salt it before it is taken from the stove and see that the salt is well incorporated. Then it will be ready for the several dishes which may be prepared from it.

It can be served plainly with sugar and cream for breakfast, but this has always seemed to me almost a waste of choice food stuff.

"Hog and Hominy."

After the ham or bacon has been taken from the frying pan and most of the nice drippings poured off, put the desired amount of prepared hominy into the frying pan and warm through. You will have an ideal breakfast food, nourishing, delicious, and it will stay by one. This is the colonial form of preparing it and the most satisfying.

Baked Hominy.

Into a cupful of cold hominy work a tablespoonful of melted butter, the yolks of two eggs beaten light, and a teaspoonful of sugar. Add two cups of milk, the stiffly beaten whites of the eggs and, beat all thoroughly together. Turn into a buttered pudding dish and bake covered for half an hour. Then uncover and brown.

Hominy Croquettes.

Into a pint of warm hominy stir a tablespoonful of melted butter, two of sweet cream, a well beaten egg, a little nutmeg and salt to taste. When cold, shape into croquettes and roll in flour. Then place in a wire basket and fry in deep hot lard. The lard should be as hot as may be without scorching. If desired, left-over bits of cold veal, lamb or chicken may be put through the meat grinder and mixed with the warm hominy in the start.

Boiled Hominy.

Hominy may be prepared very acceptably for the dinner table. Into a small pail place a pint of hominy and over it a teaspoon of sweet milk, and salt to taste. Cover tightly and steam one hour.

Hominy and Cheese.

Take a pint of cold cooked hominy, salted to taste. Into a buttered baking dish place a layer of the hominy. Over this strew a layer of grated cheese. Repeat till all is used and finish with the cheese. Into the baking dish pour enough sweet milk to come up well around the hominy and bake in the oven. Serve piping hot.

Hominy with Left-over Meats.

This is especially nice for cold roast pork, but if there are several different kinds of meat, the dish will be all the better. Into a buttered baking dish which can be brought to the table, put a cup of salted hominy. Pack it carefully around the sides of the dish. Fill the center with the meat, cut up into cubes. Over the meat, not over the hominy, place some very rich white sauce. Then put in the oven and bake. Bring hot to the table without removing from the pan. To make the white sauce, stir a tablespoonful of flour into a tablespoonful of melted, not hot, butter, and thin with a cup of rich sweet milk. This is nice enough for a company dish, as is the hominy with cheese.

BRIGHTENING THE DINING-ROOM.

BY HILDA RICHMOND.

Where the country dining-room has an eastern or northern exposure with a single window, and there is no room to put in more windows, the light question becomes a serious one on dark days at any season. While a north light is a steady one it is also a sunless one, and on dark days very little brightness can be had from the outside. For this reason the room that can not have windows added must always be treated from the inside, and artificial means used to increase the cheer. A bright dining-room is conducive to good health and good digestion.

Putting on a bright wall paper with a great deal of gold in it will do much to lighten the dark room. At the close of the season a gilt paper can be selected at moderate cost and the home folks can put it on themselves if they want to save still more. A rich border of bright grapes or autumn fruits or bright flowers even though it be not exactly the latest style, will do wonders to help out the gleam of the gold in the design and also furnish a pleasing picture for the eyes of the family. A white paper is apt to be



Anty Drudge Decries Home Soap Making

Mrs. Oldtimer—"Anty Drudge, I remember you used to have a good recipe for making hard soap with lye. I don't like my soap recipe; will you tell me yours?"

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Don't let your husband talk about his farm, his horses or his cows. You are his partner, and very likely the farm would not be his if it wasn't for the work you do. Have you ever stopped to think of ways in which you can save your strength and yet do as much work as you do now? If not, it's time you did.

Do you use Fels-Naptha Soap? With Fels-Naptha Soap you do better work in cool or lukewarm water than in the old way with wash boiler and a hot fire, and the clothes are much cleaner and whiter, without having to be rubbed to pieces.

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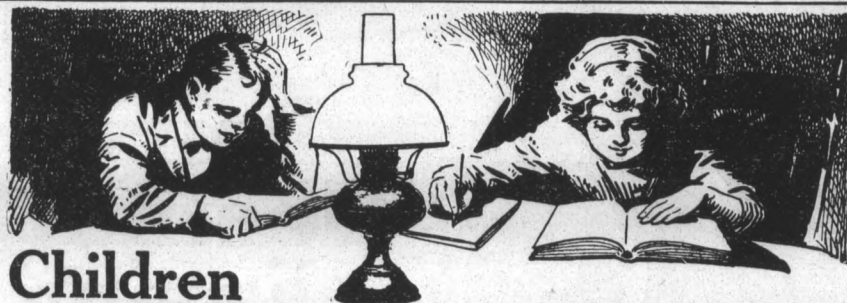
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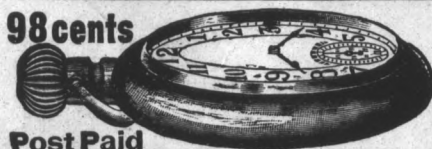
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rather cheerless, though lighter than gold or cream, so it is well to avoid the whites and select a warm tint that brings to mind the idea of sunshine.

A few bright pictures help out wonderfully, too. A little plate rack with the gayest dishes arranged on it and bright cups hanging from the rail will also help. It is never well to crowd the walls of any room with ornaments, but beautiful, warm tinted china is always appropriate in the dining-room.

It is always possible to have a bright bit of color on the table even if flowers are out of the question. A bowl filled with bitter sweet or other gay winter berries, a fern dish with its pretty green fern, a thrifty plant, a dish of rosy apples, or even the old-fashioned "everlasting" flowers can all be used in turn and all be bright and effective. Colored embroideries for the dining-table are out of style at present, but for dark days a bit of bright needle work in the shape of yellow roses or Christmas holly may well be used.

For very dark days there is always the soft light of artificial illumination which is easy and inexpensive. Almost every country home boasts a hanging lamp or some sort of overhead system of lighting in the dining-room, and the mellow glow over the table is very gratifying when the weather is dark. The light helps out the gold of the wall paper, and makes the fruits or plants appear at their best, so many country housekeepers are lighting their dining-room lamps every dismal day. For a formal dinner or for some special occasion candles are very beautiful and when shaded with delicately tinted shades give a festive air to the simplest feast. Candles are more artistic than lamps but for everyday use the lamps are more easily managed.

OPEN-AIR SCHOOLS IN MICHIGAN.

Open-air schools are becoming popular in Michigan. The first open-air school in Michigan was without shelter of any kind, and was conducted under the apple trees at the Grand Rapids sanatorium. The second open-air school, and the first one which was under shelter, was opened for anaemic children in Grand Rapids in the summer of 1911 under the direction of the Board of Education. This was so successful that it was decided to continue the open-air work during the cold weather. The results were excellent and the open-air school will be a permanent feature of the educational work in the city. At the beginning of 1912 an open-air school for consumptives was opened in one of the shacks of the sanatorium at Grand Rapids.

Until this summer Grand Rapids has borne the sole honors. However, the opening of the open-air school in Detroit in September robbed her of this boast. Detroit claims the distinction of being the first city to erect a building solely for an open-air school, most such schools having been conducted on the roof of some building, in a room with the sides knocked out, or in a tent or portable building.

The August Bulletin of the Michigan Association for the Prevention and Relief of Tuberculosis is largely devoted to the subject of open-air schools, and urges upon Michigan citizens the necessity of opening such schools in every city in the state. The experience of Grand Rapids is given in detail, as well as the reasons why we should have open-air schools and the obligation which rests upon the people of Michigan to provide surroundings which will help our children to keep well and strong even while they pursue their studies. Copies of this Bulletin will be sent free to anyone interested in learning about this work. Address Miss Carol F. Walton, Medical Building, Ann Arbor.

HOME QUERIES.

Household Editor:—What are "albuminous drinks?"—Home Nurse.

Drinks made with raw eggs, as egg-nog, albuminized milk, albuminized water, orange and egg, or albuminized orange, albuminized lemonade, etc.

Household Editor:—How do you blanch almonds?—Cook.

Cover the nuts with boiling water and let stand on the stove about ten minutes, or until the skin will slip off in the fingers. Then drain, cover with cold water, and keep under the water while removing the skin.

Household Editor:—Many of my recipes speak of blanching vegetables. How is this done?—May M.

Blanching is another name for par-boiling. Put the vegetables in boiling water and boil from five to 15 minutes ac-

cording to the length of time required to cook the vegetables. Then drain, rinse with cold water, and continue cooking according to recipe.

Household Editor:—What is the fifteenth wedding anniversary called?—M. B.

The fifteenth wedding anniversary is commonly known as the crystal wedding.

Household Editor:—Would you recommend a correspondence course for young fellow who is anxious to get an education?—Ed.

If he is anxious enough to study alone, a correspondence course will help him. It will not help him, though, unless he is able and willing to do a great deal of hard work. Most reliable schools give individual help, but getting help by mail is a slow process and the student must be willing to study hard by himself.

Household Editor:—I have learned a good many good things from our part of your valuable paper. When I saw the request of Mrs. R. B., I said I must write. A few years ago I discovered a member of our family had a bad case of head lice. I remembered my mother used Indian cockle, so I got five cents worth and steeped part of it. After it cooled I soaked the hair and scalp good. One application is enough as it kills nits and all. The nits will be a long time coming off from the hair but will not hatch. I learned afterward it could be soaked in cold water, anything to get the strength out. Tell Mrs. C. B. I cured my daughter of constipation when a baby by giving her well cooked oatmeal with cream and sugar. The cure has been permanent. I know a young mother that gives her little one, a few years old, at least one slice of bran bread a day. It is recommended highly for grownups with stomach trouble, and pretty good for those that do not complain of anything but a good appetite. Here is the recipe:

One egg, half scant cup sugar, one tablespoonful lard, one pint sour milk, two and a half cups bran, half cup flour, one rounding teaspoon baking powder, one level teaspoonful soda, salt. It must be stirred quite thick and generally requires more flour. Bake slowly about one hour.

—Mrs. A. J.

DIET.—No. 7.

Uses of Protein.

"The uses of protein in the body are to repair the waste of those tissues which contain nitrogen, that is, the muscles, nerves, brain, etc., and to reconstitute the secretions and fluids of the body and the digestive juices, to control, stimulate and support the vital processes of functional activity and nutrition, and to contribute to the development of muscular and nervous energy by splitting up into nitrogenous and non-nitrogenous elements, by the production of heat and under certain conditions by the formation of fat."—Pattee.

We can readily see how important it is that the body should have protein and how disastrous to health and physical perfection to deprive it of this valuable food principle. Milk and eggs are the animal foods most easily obtained by the farmer's wife, and these she should freely use in the daily diet. The following dinner is one easily secured and prepared:

Cream of Corn Soup
Fried Ham Boiled Potatoes
Creamed Carrots
Boiled Beets with Butter Sauce
Bread and Butter
Baked Apples and Whole Milk
Cocoa

The analyses of these foods shows the following results:

	Water.	Pro.	Fat.	Car.	Ash.
Cream of corn...	86.8	2.5	1.9	7.8	1.0
Fried ham	36.6	22.2	33.2	...	5.8
Potatoes	75.0	2.5	0.1	20.9	1.0
Creamed carrots ..	3.5	7.7	3.6	80.3	4.9
Beets	88.6	2.3	0.1	7.4	1.6
Bread	35.0	9.1	1.6	53.3	0.2
Butter	11.0	1.0	85.0	...	3.0
Baked apples	61.1	0.2	0.8	37.2	0.7
Milk	87.0	3.3	5.0	4.0	0.7
Cocoa	4.6	21.6	28.9	37.7	7.2

The analysis of cocoa is for the powder alone. This shows it to be rich in protein and with the addition of milk it becomes a still more valuable food. Whole milk is given for use with the apples instead of cream, which is richer in fat.

The cream of corn soup is made by stewing canned or dried corn until it is soft enough to go through a strainer. Then put it through and finish as for cream of tomato soup. These cream soups make a valuable food and where fresh meat can not be obtained would help out materially in furnishing a well-balanced meal.

MICHIGAN FARMERS' INSTITUTES.

(Continued from page 129).

Co., Grand Rapids, Feb. 20-21; Saginaw Co., Saginaw, Feb. 20-21; Macomb Co., Washington, Feb. 20-21.

The State Round-Up Farmers' Institute will be held at the Agricultural College, East Lansing, Mich. Feb. 25-28. Among the speakers from other states will be: Dean and Director Eugene Davenport, University of Illinois, Urbana; Dean and Director H. C. Price, Ohio State University, Columbus; Prof. C. G. Williams, Ohio Experiment Station, Wooster; Prof. O. F. Hunziker, Purdue University, Lafayette, Ind.; Prof. L. A. Clinton, U. S. Department of Agriculture, Washington, D. C., and Miss Lena Bailey, U. S. Department of Agriculture, Washington, D. C.

One-Day Institutes.

Kalamazoo Co., Damon Church, Feb. 1; Cooper, Feb. 3; Portage, Feb. 4; Schoolcraft, Feb. 5; Comstock, Feb. 6; Climax, Feb. 7.

Kent Co., Cedar Springs, Feb. 3; Sand Lake, Feb. 4; Grattan, Feb. 5; Paris Twp., Feb. 6; Carlisle, Feb. 7; Kinney, Feb. 10; Alton, Feb. 11; Ada, Feb. 12; Caledonia, Feb. 15.

Calhoun Co., Penfield, Feb. 3; East Leroy, Feb. 4; Rice Creek, Feb. 5; Stanley, Feb. 6; Ceresco, Feb. 7; Eckford, Feb. 8.

Oakland Co., Holly, Feb. 10; Clarkston, Feb. 11; Ortonville, Feb. 12; Troy, Feb. 13; Walled Lake, Feb. 14.

Wayne Co., Plymouth, Feb. 10; Redford, Feb. 11; Dearborn, Feb. 12; Canton, Feb. 13; West Sumpter, Feb. 14; Willow, Feb. 15; Eureka, Feb. 17; Flat Rock, Feb. 18.

Washtenaw Co., Salem, Feb. 10; Superior, Feb. 11; Ypsilanti, Feb. 12; Willis, Feb. 13; Webster, Feb. 14; Sylvan Twp., Feb. 5; Dexter Twp., Feb. 17.

Monroe Co., Scofield, Feb. 13; Erie, Feb. 14; Azalia, Feb. 15.

Sanilac Co., Shabbona, Feb. 18; Argyle, Feb. 19.

Newaygo Co., Hawkins, Feb. 20.

Livingston Co., Tyrone, Feb. 1.

PROGRAM STATE DAIRYMEN'S ASSOCIATION.

The following is the program for the state dairymen's meeting at Saginaw, February 4-7, inclusive:

Tuesday, February 4, 10:00 A. M.

Invocation; address of welcome, Mayor of Saginaw; response, N. P. Hull, Dimondale; president's address and report of secretary and treasurer.

1:30 P. M.—Dairy Farmers' Session.

Silo and Silage, C. A. Bullock, Lapeer; discussion, H. W. Kinney, Saginaw.

How to Build a Dairy Herd, Prof. A. C. Anderson, M. A. C.; discussion, D. D. Aitkin, Flint.

The Economy of Alfalfa and Silage for Dairy Cattle, Prof. G. A. Brown of Animal Husbandry Department, M. A. C.; general discussion.

What shall be done to get the average dairy farmer to have a more just and intelligent idea of the superior value of good cows over poor ones? H. B. Wattles, Troy; discussion, Bert Mascott, Breckenridge.

8:00 P. M.—Milk Consumers' and Producers' Session.

The Advantage of Clean Milk, Mr. Ernest Kelly, Department Dairy Husbandry, Washington, D. C.

Some Mutual Problems of the Producer and Consumer, Prof. A. C. Anderson, M. A. C. (Moving pictures).

Wednesday, 9:00 A. M.—Market Milk Producers' and Dairy Farmers' Session.

The Dairy Farmer's Place in the World, B. H. Rawl, Chief of Dairy Division, Washington, D. C.; open discussion.

The Dairy Outlook in Michigan, Prof. A. C. Anderson, Department Dairy Husbandry, M. A. C.

Is the Producer to Blame for all the Bad Results in Milk? T. F. Marston, Bay City.

1:30 P. M.—Buttermakers' and Creamery Managers' Session.

The Buttermaker's Opportunity, F. E. Stafford, Galesburg; discussion, H. D. Wendt, Big Rapids.

Illustrated Creamery Accounting, Martin Seidel, Saginaw; general discussion.

Should the Creameries Employ a Dairy Expert? F. V. Bennett, Elsie; discussion, C. E. VanSlyke, Durand.

Milk Feeding of Poultry, J. Oliver Linton, East Lansing.

7:30 P. M.

Raw Material and its Relation to the Finished Product, M. Jensen, Whitmore; discussion, C. V. Jones, Detroit.

Ice Cream as a Side Line to Butter, Glen Overton, Allegan; discussion, George Yetter, Eau Claire.

Can the Quality of Michigan Butter be Improved? W. Lockin, Shelby; discussion, C. M. Emerson, Detroit.

Thursday, 9:00 A. M. to 12:00 M.—Exhibitors' session in Exhibit Hall, Auditorium, and annual election of officers, Michigan State Dairymen's Association.

From 10:00 to 11:00 A. M.—Scoring of starters and lecture on same by Prof. S. Hagerdorn, in banquet hall.

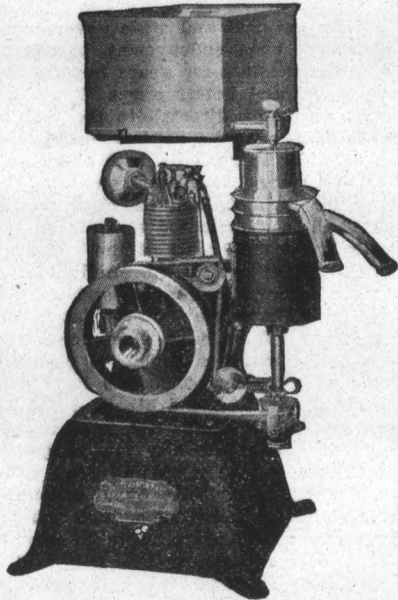
At 11:00 A. M.—Illustrated lecture from Life: "The Good Cow vs. the Scrub Cow," by Prof. A. C. Anderson, M. A. C., in Exhibit Hall.

At 1:30 P. M.—Michigan State Buttermakers' Association meet in banquet hall, Auditorium. Michigan Cheese Makers' session in Parlors A and B. Michigan Creamery Owners' and Managers' annual meeting in balcony hall, Auditorium.

At 8:00 P. M.—Michigan State Dairymen's Association annual banquet in banquet hall, Auditorium.

Friday, 9:30 A. M.—Announcement of scores and awarding of prizes, and at 1:30 P. M., special entertainment.

"The 1913" Cream Automatic Separator Compels Attention



The "Automatic" is the one great stride forward in dairy appliances since Babcock's invention. It overshadows all others. The idea of combining in one efficient unit the separator principle and gasoline power, to skim more evenly, more closely, more quickly, with no effort—was a big one. It startled the whole dairy industry.

In all parts of the world dairymen installed the Automatic to test it. Agricultural colleges and Experiment Stations tried it thoroughly. Everybody saw its possibilities, if successful. And it has been wonderfully successful. For over two years Automatics have been in steady operation in all parts of this country, in Europe, Australia, South America—wherever cows are being milked and butter made.

In point of operation the engine has worked without a hitch. It has been trouble proof. In point of close skimming, the Automatic has broken all records. No hand crank machine can possibly skim so close, because the speed of hand power varies. The Automatic skims even, absolutely even, the speed being maintained without variation. The result is more butter fat and smoother cream; to say nothing about a great saving of time and labor.

Self Powered: Engine and Separator In One.

Wherever ten or more cows are being milked hand power is doomed. No up-to-date dairyman will put up with the drudgery and expense of cranking a separator when he can have it done quicker and better with gasoline power *compactly built into the machine itself*. He won't burden his family with a backbreaking grind, if he can help it; and he won't hire extra help—not at present wages. You don't have to tell him about the advantages of gasoline power. He knows them. The prob-

lem was to build into the separator itself an *efficient* gasoline engine. This has been done. The AUTOMATIC is a perfect combination of the two. It is a smooth running unit, with a self contained motor specially designed and adapted for separator use. The design is patented: nothing like it on the market. The bowl spins *without a trace of vibration*. This is a very different matter from the makeshift of hitching up a hand cranked separator with any ordinary gasoline engine.

When the Milking Is Done, Skimming Is Done

The Automatic will handle over 700 lbs. of milk in an hour, for any number of hours. It skims faster than ten men can milk, at a high even speed. No hitches or variations. The engine requires not the slightest attention; runs continuously for six hours without re-

plenishing of fuel. Starts by the pulling of a cord. No chance to kick. The separator is simplicity itself. Crankless and gearless. No complicated parts to get out of order. Little to wear out. With ordinary care it should last a lifetime.

1913 Model Equipped With Magneto

This is our latest improvement. Makes ignition more certain. The battery and coil system has worked very well—given universal satisfaction. But it is not as scientific as a suitable magneto. The problem has been to design a suitable magneto for THE "AUTOMATIC." This has been done. The magneto perpetuates itself—never needs recharging. With this latest improvement the Automatic has been rendered more completely automatic. Not even a battery to renew, nor a coil to adjust. We are also manufacturing battery equipped machines and selling them with a Special Trade Allowance of \$15 for old separators taken in exchange.

If you are milking eight to ten cows or more you ought to know about the AUTOMATIC Cream Separator. See it in actual operation. Then you won't go on cranking a hand machine any longer. You cannot afford to.

By writing us you can obtain full information by mail. We will tell you where you can see the machine in operation—of what dealer you can buy one. Give us the name of your dealer.

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Does several men's work—at less than cost of a boy. Surprising, the amount of farm "drudgery" this marvelous little engine will get away with. Separates cream, grinds feed, cuts ensilage, saws wood, shells corn, waters stock, washes buggy—the family clothes—almost anything you want. Handy, practical, easy to operate—a quick starter and steady runner—excess power above rating—convenient, too—with trucks, located anywhere. Fuel—gasoline, kerosene, distillate or gas.

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is a REAL ENGINE—sold at far too low a price, considering quality—backed by the nearly 15 years' practical engine experience of a reliable firm—sold on a REAL GUARANTEE, gilt-edge to you and iron-clad to us. Don't struggle with the "hired man problem" this season—when the T & M will attend to it for you. LET US SHOW YOU how this "everlasting," reliable engine (1½ to 20 h. p.) will deliver you more power and greater value in every respect than you pay for. Spring work is coming—write, NOW, for catalog and prices. Termaat & Monahan Co. 235, River St., Oshkosh, Wis.



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The Steel Shoe Man

I want to send a pair to you on free examination. I want you to put your feet in them and walk around the house just to feel how much better they are than the best pair of all-leather workshoes ever made.

No More Corns, Bunions or Callouses

This shoe has absolute foot form, and the sole being of steel it cannot warp, twist, nor draw out of shape. Consequently, it is easy to be seen that corns, bunions, callouses, etc., cannot be irritated, and no portion of the foot be rubbed so as to start new miseries of this kind. No all-leather shoe can fit after it has a twisted, broken sole that allows the uppers to crease up into galling wrinkles.

Save Your Health

This steel soled, waterproof shoe is an absolute protection to your health, aside from being a comfort to your feet; for you may work all day in mud and water with your feet powder dry. You escape colds, rheumatism, neuralgia, the dreaded pneumonia, and the long list of ills that result from damp or wet, cold feet.

Saves \$10 to \$20

One pair of these light, springy, comfortable shoes will outlast three to six, or even eight pairs of the best quality all-leather workshoes. There are no repairs—and no loss of time, or trouble of any kind. The soles and sides (as shown in illustration) are stamped in one

seamless piece from light, thin, springy steel, secured firmly to uppers of the very best quality, soft pliable leather—absolutely waterproof and almost indestructible. The soles are studded with *Adjustable Steel Rivets*, which give perfect traction, firm footing, and protect the soles from wear. The rivets themselves (which take all the wear) can be replaced when partly worn. 50 rivets cost but 30 cents, and should keep the shoes in good repair for two or even three years.

These Shoes Are Lighter Than Leather Work Shoes

and the firm, yet springy, elastic tread gives you an ease and lightness of step and comfort that delights your feet, and gives your whole body a resiliency that lifts the pain and burden from the work of the day. You can walk more, stand more, do more, earn more—and live longer in perfect muscular health and strength. Men's sizes, 5 to 12—Boys' sizes, 1 to 4. Six, nine, twelve and sixteen inches high.

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I take all the risk—absolutely—and leave it wholly up to you to say from your own trial and examination, that this shoe is all or more than I claim for it—that it will preserve your feet, protect your health, and save you the money you now waste in continuously buying the old, heavy, leaky, warping, unsanitary and painful leather-soled workshoes that look bad, feel bad, smell bad and wear out every few months at the very best. I have saved over a million feet—and I want you to try a pair of these shoes to convince yourself of what they will do for you and save for you.

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Do not delay. Do not put it off. Do not think of buying a pair of workshoes without learning all about this wonderful shoe with the sole of steel. Read my free book and my fair, open, satisfaction guaranteed Free Try-On Proposition. Simply send me a postal card, and I will immediately send you free, postpaid, this book of facts, figures and illustrations, together with complete literature and my Free Ten Days' Try-On Offer. Send your postal to me personally, today.

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AUCTION

The Fairfield Stock Farm, Burton, Mich. are offering 4 High Class Percheron Stallions, ages 1 to 4 years. 20 Select Shorthorn Cows, 5 Bulls and 25 Oxford Down ewes, bred to Imp. ram
At Public Auction on or before March 1st.
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For Sale—Horses, cattle, sheep, swine and poultry, nearly all breeds. Sires exchanged. South West Michigan Pedigreed Stock Ass'n., David Woodman, Sec'y., Paw Paw, Mich.

Aberdeen-Angus.

Herd, consisting of Trojan, Ericas, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these Fairs and at THE INTERNATIONAL, Chicago, of 1912. WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of foremost dairy breeds; young bulls and bull calves for sale. Berkshire swine. All pure bred. Michigan School for Deaf, Flint, Mich.

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HICKS GUERNSEY FARM, Saginaw, W. S., Mich.

REG. GUERNSEY BULL CALVES—large improved breeding and from dams with official milk and butter records for sale at reasonable prices. Also young bull calves.
McPHERSON FARMS CO., Howell, Michigan.

HATCH HERD HOLSTEINS—Choice sires from ARO dams. Reasonable prices. HATCH HERD, Ypsilanti, Michigan.

HOLSTEIN Bull ready for service. Also bull calves. Sired by 30-lb. bull, A.R.O. dams. Duroc Jersey Boars of st breeding. E. R. Cornell, Howell, Mich.

Service Bulls and Bull Calves

Sired by Johanna Corcordia Champion,

whose sire's dam and dam's dam average 34.06 lbs. butter in 7 days, average fat 4.67%. Also cows and heifers bred to him. I can offer you bulls at bargain prices. Try me and see, and do it quick.

L. E. CONNELL,
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Holstein Bull Cal. out of grand daughter De Kol 2nd. Butter Boy 3rd. Sired by best son of Pontiac Butter Boy. Price only \$50. C. D. WOODBURY, Lansing, Mich.

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1 3-year-old Herd Bull, \$200.

Very Choice, Gentle and guaranteed.

1 12 Months old, \$150

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

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Born June 5, 1912, sire a son of the King of the Pontiacs from a daughter of Hengerveld De Kol Dam of calf, an A. R. O. daughter of Sadie Vale Concordia's Paul DeKol, her dam a 20 lb. imported cow.

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Herd headed by Hengerveld Colin Pietertje. Calves. FLOYD F. JONES, R. F. D. 3, Oak Grove, Mich.

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(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed.

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FOUR CHOICE A. R. O. HOLSTEIN BULL CALVES

from six weeks to one year old. Price \$40 to \$150. ELLIS W. DORIN, Brookside Farm, Sunfield, Mich. R.F.D. 3.

BULL CALVES

—Richest Hengerveld, DeKol and Korndyke breeding. Special prices for quick sale. YPSILANTI FARMS, Ypsilanti, Mich., Cole Brothers, Owners.

A FEW CHOICE Holstein Friesian Bull Calves

for Sale, A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

Farm Commerce.

A Need for Co-operation.

By W. H. Ingling, General Manager Monmouth Co., N. J., Farmers' Exchange.

THE national and state governments have been endeavoring to educate the farmers for years how to produce larger and better crops. Now their efforts are being directed to the training of the farmer in the next essential problem of what he shall do with them after they are grown, how they shall be prepared for market, and in what manner they shall be distributed and placed economically in the hands of the consumer, for whom they are grown. Individual effort has accomplished much, and will continue to achieve great things, but greater and larger affairs have been done when man has worked in union or co-operatively with others. This has been demonstrated so often that it is a familiar fact, and yet it seems not to have been accepted as a truth nor put in general practice by our farmers and fruit growers. They have been over jealous of their rights as individuals, and many of them are unwilling to unite in any effort of co-operation for fear they will be giving away some of their privileges.

Present System is Expensive.

The market end of this great problem has been generally neglected until recent years, and the farmer, because he had no better way, has been unconsciously building a system of distribution that is both expensive and unsatisfactory. This system is largely responsible for many of the ills that beset the producer. For every dollar the consumer pays for fruit and vegetables, the farmer seldom gets more than an average of 40 cents, the balance going for transportation and the profits of the middlemen.

In the manufacture of any other line of goods there are no such disproportionate results. The reason for this is that the farmer allows five sets of dealers to handle his products before they reach the consumer, while the manufacturer has but one, except in rare instances. The latter has cut out the jobber, and places his goods with the retailer direct. He was forced to this course because of the sharp competition in his line of business, and in doing it he was able to retain part of the profits the jobbers were making and still get his goods to the consumer at no greater, if not a lesser price.

How Price is Often Divided.

It lies within the power of the average farmer to make a shorter road to the consumer, and he of necessity must do it. He can not afford longer to encourage a system in which he pays most of the expenses. To illustrate: Suppose potatoes were selling in Chicago at \$1.00 per bushel to the consumer. The retailer will take at least 20 per cent of it for his profits; the wholesaler, from whom the retailer purchased them, will take 10 per cent; the jobber, from whom the wholesaler bought, must have at least five per cent. There is still another jobber and local or resident buyer, who must have five per cent each. In addition, the freight is 18 per cent, making a total of 63 per cent, and leaving the farmer only 37 per cent for his share of the dollar. Is not this a pernicious system? Ought there not to be a readjustment of this plan of distribution, so that the grower will get his share of the consumer's dollar? Who will furnish the remedy? We can not go, of course, to those who are benefited by the present system, but surely the one most interested in a change should be the one to bring it about. The grower has the cure in his own hands, and has only to apply it to receive the benefits.

Hope in Co-operation.

We believe co-operation offers great possibilities to our farmers and fruit growers, and is the best medium by which the farming industry can successfully cope with the problems that face the producers of farm products. It is our conviction that organized co-operation, whenever honestly and unselfishly applied, and loyally supported, will bring to the farmer, through proper distribution, the highest market value for his crops that is obtainable, providing he grows the best quality of produce, properly grades it and puts it on the market in the most attractive manner. More than this he can not ask or hope to obtain.

Proper distribution means the farmer's placing his goods as near to the consumer by his original sale as is possible, and in the market that will give him the best returns. If he does not do this he does himself an injustice, and he can not do it unless he has his own organization to make the distribution. Our conclusion, therefore, is that it is necessary for the farmer that he organize a co-operative exchange that will be entirely under his control and management, so that he may be able to place his crops in the hands of the dealers that are nearest the consumers if he desires to secure the full market price for his products.

This is becoming more and more imperative because of the continual increase in the quantity of good stuff grown in this country every year. The immense crops produced in 1912 are almost staggering in their magnitude. The early government estimate as given out for 1912, was as follows: Corn, 3,016,000,000 bu.; wheat, 720,000,000 bu.; oats, 1,417,000,000 bu.; barley, 225,000,000 bu.; rye, 35,000,000 bu.; potatoes, 401,000,000 bu.; hay, 72,000,000 tons, beside the immense quantities of oranges, apples, pears, beans, and other fruit and vegetable products, the total value of which is over \$9,000,000,000.

Notice.

In next week's issue Mr. Ingling will tell the Michigan Farmer readers how farm produce is successfully distributed through co-operative associations under widely different conditions.

THE NOMID SYSTEM—A PLAN FOR MARKETING FARM PRODUCTS.

(Continued from last week.)

Chapter VII.—Some Important Legal Topics of Interest to Direct Sellers.

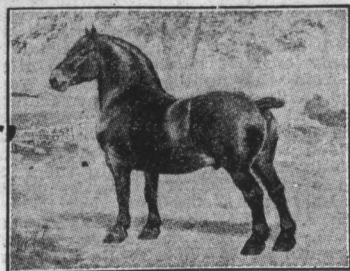
The purpose of this chapter is to set forth some of the rights and obligations of parties entering into transactions such as have been considered in the preceding chapters. Its object is to inform readers and thus prevent difficulties arising from misunderstandings.

Sales.—Definition.

A sale is the transfer of the absolute or general property in a thing for a price in money, or other recompense of value, according to Blackstone. An agreement as to price is an essential part of the sale. Both buyer and seller must assent to the sale and both must be obligated by its conditions. The persons must be legally competent to make the sale, an agreement must be reached, and the subject matter of the sale must be ascertained and identified. The intention of the parties when entering into contracts of sale is important when courts attempt to interpret such instruments. It often occurs that the courts must look to the surrounding circumstances to determine whether the title of the goods in question has passed from the seller to the buyer. Where the contract is for the selling of goods in the future then the title of the goods does not pass and the contract of sale is known as an executory one; but where the title of the goods pass to the buyer at the time the contract is made then the contract is an executed one. There is a fundamental difference here for, should the goods become destroyed the loss is that of the party who held title to them. Usually if anything remains to be done to the goods to ascertain the identity, quality or quantity, to fix the price, etc., the title still remains in the seller; but if everything has been done to determine these things then title generally passes to the buyer. Contracts of sale may be made by mail or telegraph. If an offer to sell by one party is accepted by another, then the contract of sale becomes binding, no matter how the offer or the acceptance was communicated. If, however, the offer has been withdrawn before the acceptance was made then the minds of the parties failed to meet and no contract exists. An offer, however, cannot be withdrawn after it has been accepted.

Selling of Goods in Mass.

It often occurs in the selling of farm products that so many bushels of grain



HEWO BELGIANS

NEW IMPORTATION

We have given more than a quarter century to importing breeding and distribution of the Belgian horse. We handle no other breed and believe we have now in this new importation of stallions and mares a class of horses that will please you, and all are for sale at prices not equalled by anyone in the business when merit is considered. Will be pleased to have you ask about them and to visit us at any time.

H. & H. WOLF
Wabash, Ind.
HEWO STOCK FARM

METZ BROS., NILES, MICH.

We have a fine lot of imported and American bred

Percheron Stallions

on hand and we can sell them for less money than any other importer. Write us your wants.

METZ BROS., Niles, Michigan.

A. A. PALMER & SONS

Open the season with the finest aggregation of

PERCHERON Stallions and Mares

they have ever offered to the breeding public.

60 Head to select from.

P. O. Belding, Mich. R. R. Orleans.

DUNHAMS' PERCHERONS

are today as for the past forty-seven years the

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Fresh importation. Catalogue FREE.

DUNHAMS, Wayne, Du Page County, Ill.

PERCHERONS—BLACKS and GRAYS

We can show more bone and muscle than any breeder in Michigan. Young stock for sale from mares weighing 1500 to 2000 lbs. Impotent 79403 (79835) weight 2330 lbs. at head of stud.

CHAS. OSGOOD & SONS, Mendon, Mich.

PERCHERONS—One extra good dark gray, 3-year-old Stallion, a ton horse, also yearling stud colts. **R. OVERHOLT, Dutton, Mich.**

Reg. Percheron Stallion and Mare Colts for Sale.

M. A. BRAY, Okemos, Mich.

Imported and pure bred Stallions. We make a speciality of Belgian & Percheron. A lot of Quality, Bone and Weight. **G. & H. LOCHER, Bluffton, Ohio.**

PERCHERONS

bred for utility as well as show quality. Stable stock for sale. **Young B. F. ANDERSON, R. No. 1, Adrain, Michigan.**

SOME fine young registered Clydesdale Stallions for sale from 1 to 4 years old. In the spring some will make ton horses with lots of quality and good action. Must be sold before the first of April. **F. A. PETZ, Capac, Michigan.**

Maple Grove Stock Farm—Registered Percheron Stallions, Mares and Colts for sale, with size, bone and quality. **EARL W. BARNARD, R. No. 13, Saranac, Mich.**

FOR SALE—an extra good high grade, two-year-old Percheron Stud. Weigh 1775. **W. E. HOADLEY, Niles, Michigan.**

JACKS and MULES
Raise mules and get rich. 18 Jack and Mule farms under one management, where can be seen 420 head fine large Jacks, Jennys and mules, 14 to 17 hands high. Good ones. Stock guaranteed. Write for prices to day. Address **KREKLER'S JACK FARM** West Elkton, Ohio. Branch barns: Clinton, Ind.

Best Conditioner Worm Expeller
"Guaranteed or Money Back." Coughs, Distemper, Indigestion. **NEWTON'S** \$50c, \$1.00 per can. At druggists or sent postpaid. **THE NEWTON REMEDY CO., TOLEDO, OHIO.**

BOWSER SWEEP MILLS

Different from all others. 4 or 2 horses. Grind Corn with shucks and all small grains. (Also make 10 sizes of belt mills) **FREE**—Booklet on "Feeds and Manures" **D. N. P. Bowser Co., South Bend, Ind.**

out of a certain bin, or so many barrels of apples from a certain pile or sacks of potatoes from a pit, are bargained for. The general rule is in such bargaining that the title does not pass until the amount bargained for is separated from the mass. Chancellor Kent has declared it to be a fundamental principle that if goods are sold by weight, measure or number, the sale is not complete until they have been counted, measured, or weighed, and the specific property separated from the stock and identified as the subject matter of the sale. There is a line of cases that holds a different view in certain instances. When the mass is of uniform quality throughout so that every parcel is alike and the buyer and seller agree, the title of a portion sold may pass to the buyer without separating and identifying it from the mass. This would be so where wheat of a certain grade was sold from a bin or pile of uniform quality. This doctrine is called the "American" doctrine. In spite of these holdings it is the safest practice for one who has sold goods under the conditions mentioned to weigh, measure, or count out the required amount and set the same aside as the subject matter of the sale. Then in case of damage the loss will be the buyer's.

Delivery of the Goods.

A sale of goods or chattels is completed only by the delivery of the subject matter of the sale. This delivery may be actual or it may be constructive. Actual delivery means the change of possession of the goods or chattels, from the seller to the buyer or his agent. Constructive delivery is when the title of the property goes to the buyer without his taking possession thereof. If the property is so situated that the purchaser may take possession when he wishes and his rights entitle him to do so, then there is a constructive delivery. Any act that changes the control over the property and is intended to pass the title constitutes a delivery. By the delivery of the keys of a trunk the buyer transferred the title and the act constituted a delivery of the trunk although actual possession was not taken. Where goods are held in storage the transfer of the warehouse receipt to the vendee is generally considered a delivery of the goods. Where live stock is sold from a number it is essential to point out the particular animals since all animals are not of the same value. In this instance the "American" doctrine noted above does not operate for the reason just mentioned, that the animals are not equal in value. When the buyer designates the shipment of goods by common carrier, a delivery of the goods to the carrier constitutes delivery to the buyer. The delivery is still more certain when the buyer states the particular carrier he desires the goods sent by. Although this delivery to the carrier constitutes delivery to the buyer, yet the seller may stop the goods before they reach the buyer should the latter become bankrupt or insolvent. This is known as the right of stoppage in transitu. Should the undertaking of the seller be to deliver the goods to the buyer at his, the buyer's, place of residence and it is understood that the title does not pass until it is so carried then the delivery is not accomplished until presentation is made at said designated place. When the agreement is that the goods are to be delivered "f. o. b." then the liability of the shipper ceases when the goods are delivered to the carrier.

Acceptance of Goods.

If the goods are of the kind ordered by the buyer he is obliged to receive them if delivered at the specified time. Should the buyer receive goods that are so different from those ordered that he would at the time of delivery have had a right to refuse them, then he may by acceptance be precluded from afterwards refusing to pay the price, unless by reason of some defect that was not apparent he can show good cause for not returning them sooner. Where an order has been given for a variety of things the buyer may refuse to accept a portion of what is delivered; but where this is done it is considered that a separate contract was made for each item ordered. Again, the contract agreed upon may give the buyer the option of re-delivery should the goods fail to be of certain quality, or to measure up to some standard, then it is upon the buyer to show that they are defective, or different in quality. If the buyer misuses the goods while in his hands so as to impair their value, he is bound to retain them and becomes liable for the price. If the bargain is for a certain article the buyer cannot be compelled to take another even though it be identical. (Continued next week.)

ABSORBINE

Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Cures Spavin Lameness, Allays Pain. Does not Blister, remove the hair or lay up the horse. \$2.00 a bottle, delivered. Book 1 K free.

ABSORBINE JR. the antiseptic liniment for mankind. For Synovitis, Strains, Gouty or Rheumatic Deposits, Swollen, Painful Varicose Veins. Allays Pain. Will tell you more if you write. \$1 and \$2 per bottle at dealers or delivered. Manufactured only by **W. F. YOUNG, P. D. F., 268 Temple St., Springfield, Mass.**

OUR TRAPPER'S FRIEND AND GUIDE FREE

MODERN METHODS IN TRAPPING. This GUIDE is as different from any Guide you ever saw, as an AUTOMOBILE is different from the old time STAGE COACH. \$100.00 would not buy it if you could not get another. You never saw its equal. You get the GUIDE FREE, ordered on our blanks. Write the Old Square Deal Fur House, **WEIL BROS. & CO., Box A-24 Ft. Wayne, Ind.**

FIRE PROOF HOW TO BUILD IN CEMENT. WITH MATERIAL FOUND ON FARM. WITH UNSKILLED LABOR. WHEN OUTDOOR WORK CANNOT BE DONE. IN TILE BLOCKS SHIPPED DIRECT FROM KILN. WRITE FOR BOOKLET AND SPECIAL OFFER NO. 7. **CEMENT & TILE SILO CO., KALAMAZOO, MICH.**

Breeders' Directory—Continued.

Auction Postponed—Will sell at private sale what we offer in our auction adv't this issue, page 22. **H. B. PETERS, Burton, Mich.**

Guernsey Bull Calves—two and nine months old. Splendid breeding, \$60 and \$80 if taken at once. **J. K. Blatchford, Watervliet, Mich.**

Holstein Friesian Cattle—young bulls out of A. R. O. dams and sired by a bull with a 31 lb. dam. **W. B. JONES, Oak Grove, Michigan.**

REGISTERED HOLSTEINS—Quality counts and after quality it's price that counts. \$100 bulls at \$50 each, delivered. 2 to 3 months old, only 4 left. Get pedigrees and photos. **Hobart W. Fay, Mason, Mich.**

Hereford Bulls For Sale, Also Poland China Hogs.

ALLEN BROS., Paw Paw, Michigan.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

FOR SALE, Jersey Bulls, old enough for service, sired by a grandson of Imp. Interested Prince and from cows that produce 400 to 500 lbs. butter annually. **A. Newman, Rt. Marlette, Mich.**

JERSEYS—Five heifers (three fresh) coming three and four years old and one bull two years old. **ALEX. FORSYTH, Standish, Michigan.**

BUTTER BRED JERSEY BULLS FOR SALE **CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.**

Scotch Shorthorn Bulls and Heifers For Sale. **W. W. KNAPP, Howell, Michigan.**

Dairy Bred Shorthorns—Two yearling heifers for sale. Price \$100 each. Bulls all sold. **J. B. HUMMEL, Mason, Michigan.**

Dairy Shorthorns—Large Cattle—Heavy Milkers. No stock for sale at present. **W. W. KNAPP, R. No. 4, Watervliet, Mich.**

SHEEP.

SHROPSHIRE AT AUCTION

On WEDNESDAY, Feb. 12th, 1913,

I will sell at the 10 cent barn at Flushing, my entire flock of Registered Shropshires consisting of 75 bred ewes, 35 ewe lambs, 25 yearling rams, 25 ram lambs and 2 Choice imported stock rams.

FRED R. OTTAWAY, Flushing, Michigan.

Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berk shire swine. **Elmhurst Stock Farm, Almont, Mich.**

"OXFORDOWN SHEEP"—Descriptive and illustrated article sent free. **PARSONS, "The Sheep Man of GRAND LEDGE, MICH."**

OXFORDS—Choice young registered ewes for sale at \$10 each. **B. B. REAVEY, Akron, Michigan.**

Reg. Rambouillet Sheep, Pure Bred Poland China Hogs and PERCHERON HORSES. 2 1/2 miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. OOK.

WOOL—MUTTON Shrop. Ewes bred to imported ram. Bargains. Also P. O. Brood sows. Write today for price list. **Maplewood Stock Farm, Allegan, Mich.**

HOGS.

BERKSHIRE BOARS May and June farrow, large size, heavy bone, \$18 and \$20 each. **GEO. E. LAPHAM, St. Johns, Michigan.**

Quick Maturing Berkshires—Best breeding; best type. Satisfaction guaranteed or money refunded. **C. S. BARTLETT, Pontiac, Mich.**

O. I. C.—TWO BOARS fit to head any herd. Fall pigs ready to ship. **C. J. THOMPSON, Rockford, Michigan.**

Improved Chesters—Young breeding stock, either sex. Also a few tried sows to be bred for spring farrow and early fall pigs. **W. O. WILSON, Okemos, Mich.**

O. I. C. SWINE—Write me for Pigs, pairs and trios, not akin. Have a number of service males of good type. Write me describing of your wants. **A. J. GORDEN, R. No. 2, Dor, Mich.**

O. I. C. Swine, both sexes. Males weighing 100 to 225 lbs. Herd registered in O. I. C. Association. **GEO. P. ANDREWS, Dansville, Ingham Co., Mich.**

DUROCS OF QUALITY AND BREEDING

Will hold my bred sow sale the last of February. Will sell 30 head of extra good ones. Watch for ad later. Just one last of April board for sale.

H. G. KEESLER, Cassopolis, Michigan.

O. I. C. Extra choice bred gilts, service boars and spring pigs, not akin from State Fair winners. **Avondale Stock Farm, Wayne, Mich.**

O. I. C. Pigs of September and October farrow for sale cheap. **JOHN BERNER & SON, Grand Ledge, Mich.**

O. I. C's—All ages growthy and large, sows bred. Males ready, 100 to select from. Attractive prices on young stock. **H. H. Jump, Munith, Mich.**

Reg. Chester Whites—Both sexes and bred gilts, also serviceable registered Holstein bulls. Bargains. **RAY PARHAM, Bronson, Mich.**

O. I. C's—A fine lot of last spring stock for sale, big growthy type, either sex, pairs not akin. Sired by Grand Champion boar, Scott No. 1. Half mile west of depot. **OTTO B. SCHULZE, Nashville, Mich.**

O. I. C's—Bred sows all sold, choice young sow pigs and boars. Holstein Bull Calves sired by Pontiac Burke 2nd. **FRED NICKEL, R. No. 1, Monroe, Mich.**

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. **SPECIAL BARGAIN** in summer pigs. **Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.**

Duroc Jerseys—for sale; 20 fine service boars of fancy breeding and individual quality. Prices reasonable. **John McNicoll, North Star, Mich.**

DUROC JERSEYS—A Few Gilts for Sale **CAREY U. EDMONDS, Hastings, Michigan.**

DUROC GILTS—\$20 to \$30. Shropshire Ewes \$20 to \$30. **KOPE-KON FARM, Kinderhook, Michigan.**

Duroc Jersey SWINE. Spring and summer pigs for sale, both sexes. I pay express. 25 years experience. **J. H. BANGHART, Lansing, Mich.**

Butler's Big Bone Poland Chinas.

We don't claim to own all the good hogs in the U. S., but we do claim to have bred and sold more big type Polands in the last ten years than any two other breeders in Michigan. If you want a good fall boar write **J. C. BUTLER, Portland, Michigan.**

POLAND CHINA Brood Sow Sale Friday, Feb. 7, 1913

35 Sows, 5 Boars. Drop Postal for catalog.

WM. WAFFLE, Coldwater, Michigan.



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

POLAND CHINAS—Both Western and Home Bred. Either sex, all ages. Prices right. **W. J. HAGELSHAW, Augusta, Mich.**

POLAND CHINAS—Either sex, all ages. Something good at a low price. **P. D. LONG, R. No. 8, Grand Rapids, Michigan.**

POLAND CHINAS—Spring boars ready for business. Extra good length and bone. Prices right. **L. W. BARNES & SON, Byron, Michigan.**

LARGE styled Poland China spring and fall pigs from strong, healthy, prolific breeders, either sex at low prices. **ROBERT NEVE, Pierson, Mich.**

P. C. BOARS AND SOWS—large type, sired by Expansion. **A. A. WOOD & SON, Saline, Michigan.**

POLAND CHINA SOWS—bred Single Comb Black. Minorca cockerels. Satisfaction guaranteed. **R. W. MILLS, Saline, Mich.**

LARGE TYPE P. C. HOGS—Largest in Mich. Boars all sold. A few fall pigs. Also some extra large spring gilts to be bred to two of the best young boars I could buy in Iowa. Come or write. Free livery. **W. E. LIVINGSTON, Parma, Michigan.**

MULE FOOT HOGS—Fall pigs, service boars and bred sows for sale. Best quality, price right. **G. C. KREGLOW, Ada, Ohio.**

Mule Foot Hogs At Public Auction

SALE, FEBRUARY 15th, 1913

Fifty head of bred gilts. Young stock for sale at all times. Breeding stock recorded in the National Mule Foot Hog Record. Write for catalog and information.

JOHN A. WILLIAMS, R. R. 6, Box J, Eaton Ohio.

LARGE Yorkshires—Choice breeding stock, all ages, not akin from State Fair prize-winners. Pedigrees furnished. **W. C. COOK, R. 42, Box 22, Ada, Mich.**

CHOLERA PROOF HOGS.

I keep from 4000 to 6000 grade Yorkshire and Poland China cholera immune hogs and am selling prolific brood sows, also shoats weighing from 50 to 150 lbs. at prices that make them desirable on cholera infected farms. Sows weighing more than 100 lbs. are several thousand pigs from immune sows and boars for sale next spring.

ALVAN BROWN'S PIG FARM, Grand Rapids, Michigan.

As Good As The Best!—Yorkshires. Gilts bred for spring farrowing. **WATERMAN & WATERMAN, Meadow Land Farm, Ann Arbor, Mich.**

LARGE YORKSHIRE SWINE—August farrowed gilts \$20 each. No males in stock. **Geo. S. McMullen, Clitz, Phone, Grand Ledge, Mich.**

Lillie Farmstead YORKSHIRES

A splendid lot of fall pigs at reduced prices, pairs and trios not akin. Young sows and gilts bred for April farrow. Your money back if you are not satisfied.

COLON C. LILLIE, Coopersville, Mich.

Markets.

GRAINS AND SEEDS.

Wheat.—This trade is conducted on a lower basis than a week ago. Prices have declined about 3c. Since Saturday, however, quotations have been steady and it appears that the bulls have a chance to at least hold values where they are. The bearish features are the large world's supply, the removal of the Balkan trouble as a price-making factor, the free selling of South American wheat and the large amount afloat; while the bulls are effectively using the reduced primary receipts of this country, the exposure of the new crop of winter wheat and the decreasing supply in America. There is a fair cash demand and flour is enjoying an ordinary trade. One year ago the price for No. 2 red wheat was \$1 per bu. Detroit quotations are as follows:

	No. 2	No. 1	White	May	July
Thursday	1.12	1.11	1.16	95%	
Friday	1.11	1.10	1.14	95%	
Saturday	1.10	1.09	1.14	95%	
Monday	1.10	1.09	1.14	95%	
Tuesday	1.10	1.09	1.14	95%	
Wednesday	1.10	1.09	1.14	95%	

Chicago, (Jan. 28).—No. 2 red, \$1.09@1.12; May, 92½c; July, 90½c per bu.
New York, (Jan. 28).—No. 2 red, \$1.10 f. o. b. afloat; May, 96½c; July, 96½c per bu.

Corn.—This deal is a little easier. Values are off a fraction from a week ago and trade is not conducted on a very large scale. The foreign support has weakened, prices offered from Europe being slightly lower and crop conditions in Argentina being much improved by rains, a drouth having recently threatened the crop of that country. Primary receipts last week amounted to 1,736,000 bu., as compared with 1,598,000 a year ago. Wheat, of course, had a depressing effect upon this cereal. One year ago No. 3 corn sold on the local market at 66½c per bu. Detroit quotations are as follows:

	No. 3	Yellow
Thursday	50	51
Friday	50	51
Saturday	50	51
Monday	50	51
Tuesday	49½	50½
Wednesday	49½	50½

Chicago, (Jan. 28).—No. 2 yellow, 49c; May, 51½c; July, 52½c per bu.

Oats.—Business has been maintained at prices on a level with the closing figures of last week. The influence of the wheat was felt here, but the inside situation was such as to overcome the influences from other grains. Receipts of oats at primary elevators amounted to 816,000 bu. last week, which is over 50,000 bu. less than for the previous week but nearly 200,000 bu. more than for the corresponding week a year ago. Shipments were 250,000 bu. greater than for the corresponding week last year. One year ago standard oats were quoted at 53c locally. Detroit quotations for the week are:

	Standard	No. 3	White
Thursday	35	34	
Friday	35	34	
Saturday	35	34	
Monday	35	34	
Tuesday	35	34	
Wednesday	35	34	

Chicago, (Jan. 28).—No. 2 white, 35½@36¼c; May, 33¼c; July, 33¾c per bu.

Beans.—Farmers are not altogether satisfied with the condition of the bean market. This, of course, comes partly through the poor condition of the product, there being scarcely a consignment that grades high. There is also complaint of the rules adopted by the buyers' association for picking and settling for consignments. The deal is very slow. Prompt, immediate, January and February are quoted at \$2.10 per bu. on the local market.

Chicago, (Jan. 28).—Prices have declined here 5c for pea beans, but advanced for red kidneys. Pea beans, hand-picked, are quoted at \$2.30 per bu; do. prime, \$2.20; red kidneys, \$2.30@2.35 per bushel.

Clover Seed.—There is a splendid demand for clover seed which, with the small supply, is strengthening the trade and forcing prices upward. The change on the local market amounts to 20c over last week's values. Prime spot quoted at \$12.35; prime alsike, \$13.40.

Toledo, (Jan. 28).—Prime cash and Feb. \$12.45; prime alsike, \$13.40; March, \$13.50.

Rye.—This grain is inactive with the price advanced one-half cent over last week's quotations, cash No. 2 now being 62½c per bu.

Chicago, (Jan. 28).—No. 2, 63@64c per bushel.

Barley.—Chicago.—This grain is quoted at 50@70c per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ¼ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.60; second, \$4.90; straight, \$5.20; clear, \$4.90; spring patent, \$5.10; rye flour, \$4.90 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$24; coarse middlings, \$23; fine middlings, \$28; cracked corn \$24; coarse corn middlings, \$21.50; corn and oat chop, \$20 per ton.

Hay.—Holders of hay are not having an easy time disposing of the product at satisfactory prices. The surplus is larger than the crop would ordinarily warrant

because of the open winter and late fall. No change in the deal. Carlots on track at Detroit. No. 1 timothy, \$14.50@15; No. 2, \$13@13.50; light mixed, \$13.50@14; No. 1 mixed, \$12.50@13 per ton.

Chicago.—Prices unchanged; movement slow. Choice timothy, \$17.50@18.50; No. 1, \$14.50@16.50; No. 2 and No. 1 mixed, \$12.50@14; No. 3 and No. 2 mixed, \$10@12; clover, \$7@11; alfalfa, choice, \$15@16; do. No. 1, \$13.50@14.50; do. No. 2, \$10@12 per ton.

New York.—Market steady; standard \$20.50@21 per ton; No. 1, \$22; light clover mixed, \$20@21.

Straw.—Car lot prices on wheat and oat straw on Detroit market are \$8.50@9 per ton; rye straw, \$10@10.50 per ton.

Chicago.—Steady. Rye, \$6.50@7.50; wheat straw, \$6@6.50; oat straw, \$6@7 per ton.

New York.—Rye straw, \$19@20 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—The downward trend noted last week has been checked and the situation everywhere seems more favorable to sellers. The Elgin quotation is 1c higher. The local market is steady at values which have ruled several weeks. Jobbing prices in the Detroit market are: Fancy creamery, 33c; firsts, 31c; dairy, 22c; packing stock, 21c per lb.

Elgin.—Market firm at 33c.

Chicago.—In this market prices show a little improvement, but the change is confined almost entirely to the better grades. In fact, the poorer lots of almost any grade are moved with more or less difficulty. Receipts holding up well and demand just about sufficient to prevent accumulations. Quotations are: Extra creamery, 33½@34c; extra firsts, 30@32c; firsts, 26@28c; seconds, 24c; dairy extras, 30c; firsts, 26c; seconds, 23c; packing, 12@21c as to quality.

New York.—Values generally about 1c higher than last week. Market reported firm. Creamery extras, 34½@35c; firsts, 31@34c; seconds, 27@30c; thirds, 25@26c; state dairy, best, 31@34c; good to prime, 27@30c; common to fair, 24@26c; packing 17@21½c as to quality.

Eggs.—Conditions everywhere continue favorable to unusual winter production, creating an easy feeling in all markets. Only a marked change in the weather can now stop the gradual decline in values. Locally the loss since a week ago has been a full cent. At Detroit current offerings, candled, and cases included, are quoted at 23c per dozen.

Chicago.—A weaker feeling rules here and prices are off ½c@1c or more. Ordinary receipts are still extremely variable as to quality. Miscellaneous receipts, cases included, are quoted at 15@22c; do. cases returned, 15@21½c; ordinary firsts, 17@20c; firsts, 22@24c; refrigerators, firsts, 16@16½c per dozen.

New York.—Irregular; most qualities showing a loss of a full cent. Fresh gathered, extras, 26@27c; extra firsts, 24½@25c; firsts, 23@24c; seconds and lower grades, 21@22c; western gathered whites, 26@30c.

Poultry.—Detroit.—Receipts are comparatively light and market not very active. The satisfactory values which have ruled of late are still in force. Quotations are: Dressed.—Spring chickens, 15½@16c; hens, 15@15½c; turkeys, 20@21c; ducks, 18@19c; geese, 15@16c per lb. Live.—Spring chickens, 15@15½c; hens, 14@15c; No. 2 hens, 10@12c; old roosters, 9@10c; turkeys, 18@19c; geese, 12@14c; ducks, 16@17c per lb.

Chicago.—Chickens are fractionally higher while ducks are up a full cent. Demand only fair. Quotations on live are: Turkeys, good weight, 15c; others, 10c; fowls, good, 13½c; spring chickens, 13½c; ducks, large, fat, 16c; do., Indian runners, 14c; geese, full feathered, 13c; do. plucked, 8@10c per lb.

New York.—Dressed stock steady. Fresh killed western chickens, 14@20c; fowls, 13@17c; turkeys, 14@23½c per lb.

Cheese.—Market steady; values unchanged. Quotations: Wholesale lots: Michigan flats, 16@16½c; New York flats, 18½@19c; brick cream, 16½@17c; limburger, 17@18c.

Veal.—Detroit.—Easier. Fancy, 13½@14c; choice, 10@12c per lb.

Chicago.—Fair to choice, 80@110 lbs., 11½@13c; extra fancy stock, 13@13½c; fair to good chunky, 10½@11½c per lb.

FRUITS AND VEGETABLES.

Apples.—A general improvement in all the leading apple markets of the country brings cheer to the growers who are holding. Detroit prices are a little higher for good grades. Fancy, per bbl., \$2.50@3.50; ordinary, \$1@1.50.

Potatoes.—This deal is slow and easy, due to the fine weather for moving the tubers and the good supply. Demand is fair. Michigan stock in car lots, 50c in sacks, 46c in bulk.

Chicago.—Receipts this week steady with last week but over 100 cars less than a year ago. Fancy Michigan stock 48@50c per bu.

New York.—Should the strike on the B. & A. R. continue, shipments of Maine potatoes will be hindered and a larger demand for western stock result. Prices about steady. Michigan potatoes are quoted at 61@62c per bu.

Onions.—Local market is dull with quotations for home-grown at 50@55c per bushel.

Chicago.—Market over-supplied and demand slow. Reds and yellows quoted at 35@40c; whites, 75@80c.

New York.—Nothing is being done to relieve this trade and prospects are rather discouraging. Good western reds are selling at 40@50c and yellows at 65@75c per bushel.

MISCELLANEOUS.

Provisions.—Ruling prices in Detroit are higher. Quotations: Detroit.—Family pork, \$23@24; mess pork, \$19.50; clear, backs, \$20@22.50; hams

15½@16½c; briskets, 11@12½c; shoulders 12½c; picnic hams, 11½c; bacon, 15@17c; pure lard in tierces, 11½c; kettle rendered lard, 12½c per lb.

Chicago.—Mess pork, May, \$19.37½; lard, do., \$10.30; short ribs, do., \$10.32½.

Honey.—Detroit.—Steady. Choice to fancy comb, 16@17c; amber, 14@15c; extracted, 9½@10c per lb.

DETROIT RETAIL PRICES.

Detroit Eastern Market.—Apples, cabbage and potatoes made up the bulk of the offerings on the market this week. Apples rule from 50c@1.00 per bu., according to grade and variety. Cabbage is plentiful, white being quoted at 20@25c per bu., and red at 50c per bu. Onions are selling at 50c per bu; carrots, 25c; potatoes in fairly liberal supply, 50c per bu; parsnips, 35c; celery around 20c per bunch. Pork was quoted at \$10.50@11 per cwt. Eggs that were guaranteed strictly fresh were selling at 35c per dozen. Poultry, live, 15c per lb. Loose hay is selling slow at \$16@20 per ton.

In Detroit retail stores apples are quoted at 80c@1.10 per bu., according to variety and grade; potatoes, good quality, 75c; best eggs, 35c. Best creamery butter is quoted at 42c; dressed chickens, 20c per lb.

Grand Rapids.

Potato receipts are very light and prices at buying stations range from 30@38c this week. Farmers are not free sellers at these prices. Jobbers are paying 22c for fresh eggs and 24c for dairy butter. In live poultry hens are worth 11@12c; ducks, 11c and turkeys 15@17c. Dressed hogs are bringing 9½@10c. Wheat at the mills is worth \$1.10; oats, 36c; corn, 51c. Beans are off to \$1.70 basis to farmers.

THE LIVE STOCK MARKETS.

Buffalo.

January 27, 1913.
(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Receipts of stock here today as follows: Cattle, 150 cars; hogs 100 double decks; sheep and lambs, 82 double decks; calves 1000 head.

With 150 cars of cattle on our market here today, and 17,000 reported in Chicago, the market is dull, sluggish and lower on all grades weighing over 1,150 lbs. Butcher grades of all descriptions are selling steady to strong, and in some instances 10c per cwt. higher than last week.

We quote: Best 1350 to 1500-lb. steers, \$8.25@8.50; good to prime 1200 to 1300-lb. do., \$7.50@8; good to prime 1100 to 1200-lb. do., \$7.25@7.75; coarse, plainish, 1100 to 1200-lb. do., \$6.75@7.50; medium butcher steers, 1000 to 1100, \$6.50@7.25; butcher steers, 950 to 1000, \$6.50@7.25; light butcher steers, \$5.75@6.25; best fat cows, \$5.50@6; butcher cows, \$4.50@5; light do., \$4@4.25; trimmers, \$3.60@3.80; best fat heifers, \$7@7.25; medium butcher heifers, \$6@6.50; light do., \$5.50@6; stock heifers, \$4.50@5; best feeding steers, dehorned, \$6.25@6.50; light common stockers, \$4.50@5; prime export bulls, \$6.25@6.75; best butcher bulls, \$5.75@6; bologna culls, \$5@5.50; stock bulls, \$5@5.50; best milkers and springers, \$6.5@7.5; common to fair kind do., \$4@5.00.

Receipts of hogs today were about 100 double decks; demand good and all grades strong to shade higher than the close of last week; bulk selling at \$7.75. Some heavy grades from \$7.50@7.65; yorkers, \$7.75@7.80; pig stuff up to \$7.85. Trade active and a good clearance was made, and the close full steady.

The sheep and lamb market was active today, with prices about 15c higher than the close of last week; most of the choice lambs selling at \$9@9.15; few at \$9.25; yearling wethers, \$7.50@8. Look for about steady prices the balance of the week with moderate receipts.

We quote: Choice lambs, \$9@9.25; cull to fair do., \$6@9; yearling wethers, \$7.50@8; yearling ewes, \$6.50@7; wethers, \$6@6.35; handy ewes, \$5.25@5.50; heavy ewes, \$5@5.25; cull sheep, \$3.75@4.50; bucks, \$3@4; veals, choice to extra, \$11.50@12; fair to good do., \$8@11; heavy calves, \$4.50@6.

Chicago.

January 27, 1913.
Cattle. Hogs. Sheep.
Received today 18,500 50,000 25,000
Same day last year.. 23,193 68,645 35,298
Received last week.. 52,258 198,129 95,961
Same week last year.. 65,970 212,905 85,223

It was thought by most traders early this morning that the meager Monday run of cattle meant stiff advances all along the line, but buyers were slow to bid for beef steers, preferring to purchase butcher stock, and these cattle averaged higher, with a demand from speculators, as well as from slaughterers. Stockers and feeders also sold higher under small offerings and a good demand. In some instances sellers thought desirable killing steers sold a little higher, but the general report was a rather slow and merely steady market. Hogs were active and only a nickel lower at best, with sales at \$7.10@7.60 and one car load at \$7.62½. Hogs received last week averaged 226 lbs., compared with 213 lbs. one year ago, 228 lbs. two years ago and 209 lbs. three years ago. An early sale was made of prime lambs at \$9, but the sheep and lamb market was extremely slow, packers bidding much lower prices than prevailed at the close of last week, although the Buffalo market was decidedly higher. There was a very fair showing here of Colorado lambs of prime grade.

Cattle are much more inclined to go lower in price than higher, and after the occasional little rallies, they quickly slip off again, this applying far more to the better class than to the cheaper kinds of steers, cows and heifers, which are decidedly the favorites with the packers and

other butchers. At the same time prices of cattle are much higher than in former years, as is almost inevitable, with an estimated reduction of 1,838,000 head in the supply of beef cattle in the United States from the number owned a year ago, and while the best beefs are lower than several weeks ago, the commoner lots are higher than then. A similar comparison with a year ago shows that the advance is much heavier in the rank and file of the offerings than in choice kinds. Beef steers sold last week largely at \$7.25@8.40, the best steers going at \$8.50@9.15, and the commoner to fair light-weights at \$6@7.25, while short-fed steers brought \$7.30@7.95, good steers selling at \$8 and over. Good to choice yearlings brought \$8@8.65, and there was a good trade in butchering cows and heifers at \$4.60@6.60, a very few fancy lots selling at \$6.75@7.50. Cutters sold at \$4@4.50, canners at \$2.70@3.95 and bulls at \$4.35@6.85. The demand for stockers and feeders was, on the whole, as large as could have been expected at the high prices asked, although values averaged lower than a short time ago, stock steers going at \$5@7.25 for inferior to prime offerings, while most feeders carrying much weight went on the basis of \$6.50@7.70 for ordinary to prime kinds. The cattle market suffered from slow railroad service, partly arising from storms and cold weather, and packers complained of unsatisfactory conditions existing in the dressed meat trade. Choice beefs sold at the lowest prices seen for a long time, and common and medium stockers sold much lower. There was a good market for calves at \$4@11 per 100 lbs. for coarse heavy to prime light vealers, but milch cows were slow sellers on a basis of 35@85c per head. The close of the week saw the bulk of the cattle selling around 25c lower than a week earlier, stockers and females included.

Hogs were in good local and shipping demand last week, and prospects continued excellent for the future, about the only temporary unpleasant factor being storm-delayed receipts, which enabled buyers at times to force declines in prices. Published statistics showing a decrease of about 5,560,000 hogs in the country's supply compared with a year ago could not fail to exert a strengthening influence, with the decline mostly in the seven great corn states, and it is believed that most farmers will realize the absolute necessity of breeding every sow possible in order to restore as soon as it can be brought about the normal hog supply. Hogs coming to market have averaged well in quality, and packers have continued to show a marked preference for prime light medium weights. The enormous consumption everywhere of fresh pork absorbs a liberal proportion of the hogs marketed, and there is also a big demand for hogs to maintain the stocks of cured meats and lard, so much depleted at the present time. The week closed with hogs selling at \$7.10@7.60, and rumors of a few sales at \$7.62½@7.65. Prices were nearly the same as a week earlier.

Sheep and lambs have fluctuated back and forth, advancing and declining during the past week, in accordance with the volume of offerings and the demand, but always sold much higher than in former years, due to the liberal consumption of mutton throughout the country and the reduced production. According to reliable estimates the sheep and lamb supply of the country is 2,373,000 head less than a year ago, and Colorado, Utah and Idaho are the only states where more feed is carried on than last winter. Sheepmen are still anxious to buy feeders, but very few are offered, and even then the killers are apt to outbid country buyers. About the only disturbing element that seems to loom up in the near future is the gradually increasing receipts of Colorado lambs, most of which are of a high grade. Killers still want lambs more than anything else in the live mutton line, and they discriminate severely against heavy weights of both lambs and yearlings. After prime lambs climbed to \$9.50 last week there was a big break in prices all along the line, closing values being much the same as a week earlier. Lambs closed at \$6.50@9, yearlings at \$6.50@8.20, wethers at \$5.50@6.25, ewes at \$3.25@5.75 and bucks at \$3.50@4.25. Feeding lambs sold at \$7.75@8.40.

Horses were in fairly good demand last week, but buyers were discriminating and cared little for the inferior animals, even when they were offered at lower prices. The spread in prices was wide, with a low grade quoted down to \$75@100 per head, while good to prime heavy drafters brought \$225@275 and now and then more. Farm mares were in good demand at \$140@215, with sales mainly at \$180@200. Recent sales at the smaller markets, such as Galesburg, Lafayette and Oskaloosa, have drawn a good many farmers and this drew trade away from Chicago.

LIVE STOCK NEWS.

Charles Escher, president of the Iowa Beef Producers' Association, said recently that some time ago he invested in 200 pure-bred cows at an average price of \$200 per head, and they are producing a profit for him on high-priced land. He believes thoroughly in growing high-grade beef cattle.

Our meats are too dear to render them acceptable to John Bull, and of the 19,000,000 cwt. of foreign meats imported by Great Britain in 1912, 83 per cent of the beef and 34 per cent of the mutton came from Argentina, Australasia supplying 13 per cent of the beef and 61 per cent of the mutton.

MICHIGAN FARMERS' INSTITUTES.

Announcement of the following one-day institutes were received from Supt. Taft too late to be included in the list published on page 129 of this issue:

Jackson Co., Springport, Feb. 3; Tompkins Center, Feb. 4; Henrietta, Feb. 5; Horton, Feb. 6; Brookline, Feb. 7; Hanover, Feb. 8.

THIS IS THE LAST EDITION.

In the first edition the Detroit Live stock markets are reports of last week; all other markets are right up to date. Thursday's Detroit Live Stock markets are given in the last edition. The first edition is mailed Thursday, the last edition Friday morning. The first edition is mailed to those who care more to get the paper early than they do for Thursday's Detroit Live Stock market report. You may have any edition desired. Subscribers may change from one edition to another by dropping us a card to that effect.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

January 30, 1913.

Cattle.

Receipts, 1540. Market steady at Wednesday and last week's prices; trade a trifle slow.

We quote: Extra dry-fed steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$6.50@7.50; do. 800 to 1000, \$6@7; do. that are fat, 500 to 700, \$5@6; choice fat cows, \$5.50@6.25; good fat cows, \$4.75@5.25; common cows, \$4.25@4.50; canners, \$3@4.25; choice heavy bulls \$6@6.50; fair to good bolognas, bulls, \$4.50@5.25; stock bulls, \$4.50@5; milkers, large, young, medium age, \$5@6; common milkers, \$3@4.50.

Sundry Sales.—Mich. B. Co. 1 steer weighing 1100 at \$8.25, 4 butchers av 915 at \$5.75, 10 do av 736 at \$6.25, 3 do av 770 at \$6.40, 3 cows av 1127 at \$5.75, 3 do av 1010 at \$4.50; to Nagle P. Co. 4 do av 1140 at \$5.75; to Sullivan P. Co. 2 bulls av 1235 at \$6; to Wyness 5 butchers av 770 at \$5.75; to Nagle P. Co. 9 cows av 990 at \$5.90; to Wyness 7 do av 810 at \$5.90; to Bresnahan 5 heifers av 666 at \$5.35; to Mich. B. Co. 1 cow weighing 1200 at \$5.75, 2 do av 775 at \$4.65; to Mason B. Co. 4 steers av 980 at \$7.10.

Sundry Sales.—To Mich. B. Co. 16 steers av 864 at \$6.40, 3 oxen av 1660 at \$6, 11 cows and oxen av 1050 at \$5.50, 1 bull weighing 1490 at \$6; to Wyness 1 steer weighing 660 at \$5.50, 4 cows av 1037 at \$5; to Nagle P. Co. 2 do av 885 at \$4, 8 do av 1066 at \$5; to Sullivan P. Co. 4 butchers av 545 at \$5.50, 9 do av 855 at \$6.50, 7 do av 704 at \$6, 2 bulls av 1565 at \$6, 3 cows av 1123 at \$5.50, 2 steers av 775 at \$5.50, 4 do av 1062 at \$5, 5 cows av 1094 at \$5.50, 3 do av 937 at \$4.25, 1 bull weighing 1570 at \$6.10, 2 do av 1300 at \$6, 8 cows av 1077 at \$5, 10 butchers av 710 at \$6.10, 6 cows av 863 at \$4, 14 do av 877 at \$4, 10 do av 937 at \$4.75; to Mason B. Co. 3 steers av 932 at \$7.50, 4 do av 752 at \$6.35; to Thompson Bros. 4 cows av 825 at \$4, 4 do av 1032 at \$4.85; to Breitenbeck 8 do av 927 at \$4.30, 4 do av 930 at \$5.25; to Goose 5 butchers av 746 at \$4.75; to L. Rattkowsky 5 cows av 1016 at \$4.65, 4 butchers av 462 at \$4.65; to J. Rattkowsky 11 do av 976 at \$5; to Hirschleman 14 steers av 770 at \$6; to Kamman B. Co. 4 do av 952 at \$6.50, 11 do av 812 at \$6.50; to Mich. B. Co. 8 do av 812 at \$6.35.

Bishop, B. & H. sold Newton B. Co. 21 steers av 930 at \$6.75, 1 bull weighing 890 at \$5.50, 9 butchers av 847 at \$6.50, 4 cows av 865 at \$4, 1 do weighing 750 at \$3.75, 2 heifers av 795 at \$6, 2 steers av 1000 at \$6.75, 1 cow weighing 950 at \$3.75, 6 do av 880 at \$5, 10 do av 906 at \$4.25; to Mich. B. Co. 2 do av 1275 at \$5.75; to Nagle P. Co. 4 do av 1022 at \$4.75; to Sullivan P. Co. 6 do av 1080 at \$5; to Mason B. Co. 4 steers av 712 at \$6.35, 1 bull weighing 1060 at \$6, 2 steers av 970 at \$7.25, 1 cow weighing 900 at \$5; to Parker, W. & Co. 1 bull weighing 1650 at \$6.25; to Hammond, S. & Co. 1 heifer weighing 690 at \$6, 6 cows av 1065 at \$5; to Nagle P. Co. 1 do weighing 1220 at \$6.25, 1 do weighing 1170 at \$5.75; to Bresnahan 7 butchers av 614 at \$5.75, 11 do av 583 at \$5.40; to Goose 8 cows av 909 at \$4.65, 6 do av 970 at \$4.75; to Sullivan P. Co. 3 steers av 827 at \$6, 2 do av 645 at \$6, 5 cows av 840 at \$4.50; to Mich. B. Co. 2 bulls av 955 at \$6, 1 cow weighing 920 at \$5.75, 6 butchers av 610 at \$5.75, 4 do av 765 at \$6.25; to Hostetter 4 cows av 1007 at \$4.25; to Mich. B. Co. 3 steers av 860 at \$6.50, 4 cows av 1050 at \$4.70.

Roe Com. Co. sold Sullivan P. Co. 3 steers av 910 at \$6.50, 2 canners av 710 at \$4, 2 cows av 1170 at \$4.75, 2 heifers av 810 at \$5; to Nagle P. Co. 8 steers av 937 at \$7.25, 7 cows av 1060 at \$5.40; to Wyness 4 do av 1035 at \$4.25; to Goose 3 do av 816 at \$4.60; to Nagle P. Co. 10 do av 1062 at \$5.25; to Newton B. Co. 1 do weighing 740 at \$3.75, 2 do av 805 at \$3.75, 8 butchers av 682 at \$5.90, 10 do av 784 at \$4.25, 1 bull weighing 1150 at \$5; to Sullivan P. Co. 6 butchers av 715 at \$5, 6 cows av 808 at \$4, 4 do av 827 at \$5, 3 do av 897 at \$4, 22 butchers av 712 at \$6.15; to Mich. B. Co. 5 cows av 1108 at \$6.65; to Kamman B. Co. 1 bull weighing 600 at \$6.50, 10 butchers av 843 at \$6.60; to Thompson Bros. 5 cows av 1028 at \$5.25.

Veal Calves.

Receipts, 514. Market strong at last week's prices. Best, \$9.50@11; others \$4@9.

Sundry Sales.—To Sullivan P. Co. 2 av 125 at \$9.25, 5 av 120 at \$8.50, 3 av 140 at \$9.50; to Goose 4 av 155 at \$11; to Mich. B. Co. 5 av 120 at \$9.

Bishop, B. & H. sold Parker, W. & Co. 1 weighing 150 at \$10.50, 2 av 130 at \$10.50, 1 weighing 150 at \$10.50, 4 av 155 at \$10.50; to Goose 3 av 150 at \$11; to Hammond, S. & Co. 3 av 140 at \$8, 5 av 145 at \$10, 1 weighing 200 at \$10.50, 4 av 135 at \$8, 1 weighing 130 at \$8.50, 5 av 160 at \$10.50; to McGuire 9 av 140 at \$11, 3 av 150 at \$11, 9 av 140 at \$10.25, 4 av 140 at \$11; to Hammond, S. & Co. 2 av 125 at \$9, 3 av 140 at \$10, 6 av 155 at \$10.50, 1 weighing 190 at \$7, 1 weighing 140 at \$9.50.

Sheep and Lambs.

Receipts, 5418. Market opens steady at last week's prices; few choice at \$8.50. Best lambs, \$8.25@8.50; fair lambs, \$7.50@8; light to common lambs, \$4.50@6;

fair to good sheep, \$4.50@5; culls and common, \$3@3.50.

Bishop, B. & H. sold Costello 113 lambs av 81 at \$7.35, 16 do av 55 at \$7, 24 do av 75 at \$8, 20 do av 65 at \$8; to Mich. B. Co. 82 sheep av 97 at \$4.90, 98 do av 100 at \$4.50, 34 lambs av 92 at \$8.50, 23 do av 52 at \$6.50, 55 do av 48 at \$5.50; to Thompson Bros. 8 sheep av 85 at \$4.50; to Chapman 49 do av 125 at \$4.50; to Hammond, S. & Co. 12 do av 95 at \$4.50, 13 do av 120 at \$5.25; to Hayes 35 lambs av 50 at \$6.50, 9 sheep av 115 at \$4.75, 48 lambs av 57 at \$6.50; to Sullivan P. Co. 11 sheep av 100 at \$4, 17 do av 80 at \$3, 30 do av 82 at \$3.50; to Bray 166 lambs av 73 at \$8.25, 204 do av 63 at \$7.75, 67 do av 67 at \$8; to Parker, W. & Co. 84 do av 70 at \$8.25; to Thompson Bros. 13 sheep av 100 at \$4.75; to Hammond, S. & Co. 6 do av 125 at \$4.75; to Eschrich 8 lambs av 75 at \$7, 9 do av 50 at \$5; to Newton B. Co. 112 do av 65 at \$7.35.

Sundry Sales.—To Young 63 lambs av 55 at \$6.75, 35 do av 73 at \$8.25.

Roe Com. Co. sold Bray 2 lambs av 80 at \$6, 41 do av 77 at \$8.40, 16 do av 70 at \$8, 6 sheep av 110 at \$4.50; to Barlage 50 lambs av 70 at \$8.

Hogs.

Receipts, 4200. Market steady at Wednesday's prices; 15@20c higher than last week.

Range of prices: Light to good butchers, \$7.60@7.75; pigs, \$7.70; light yorkers, \$7.60@7.75; stags one-third off.

Roe Com. Co. sold Sullivan P. Co. 425 av 200 at \$7.55.

Bishop, B. & H. sold Hammond, S. & Co. 1500 av 175 at \$7.55, 1010 av 210 at \$7.70.

Sundry shippers sold Parker, W. & Co. 200 av 180 at \$7.80, 750 av 190 at \$7.55, 450 av 200 at \$7.70.

Friday's Market.

January 24, 1913.

Cattle.

Receipts this week, 1817; last week, 2114. We quote: Extra dry-fed steers and heifers, \$7.50; steers and heifers, 1000 to 1200, \$6.50@7; do. 800 to 1000, \$6.25@6.75; do. that are fat, 500 to 700, \$5.50@6.25; choice fat cows, \$5.50@6; good do., \$4.50@5; common do., \$4@4.25; canners, \$3.75@4; choice heavy bulls, \$6@6.50; fair to good bolognas, bulls, \$5.25@5.75; stock bulls, \$4.50@5.25; milkers, large, young, medium age, \$5@6.50; common milkers, \$3.5@4.5.

Veal Calves.

Receipts this week, 575; last week, 605. Best grades, \$9.50@10.50; others, \$4@9.

Sheep and Lambs.

Receipts this week, 4959; last week, 6080. Best lambs, \$8.25@8.50; fair to good lambs, \$7.50@8; light to common lambs, \$6.50@7; yearlings, \$7@7.50; fair to good sheep, \$4.75@5.50; culls and common, \$3@4.

Hogs.

Receipts this week, 6194; last week, 6499. Light to good butchers, \$7.50; pigs, \$7.45@7.50; light yorkers, \$7.50; stags one-third off.

Large quantities of adulterated butter stored in Chicago cold storage warehouses have been discovered by agents of the United States Internal Revenue. Eight storage houses have been under scrutiny, and the twenty million pounds of butter stored in that city are to be tested. According to Internal Revenue Commissioner Cabell, the production of butter and oleomargarine is passing into the control of a powerful trust, which is dominated by the oleo packers. Mr. Cabell says this trust, taking advantage of imperfect laws, is reaping millions of dollars in profits from selling adulterated butter and is putting the small creameries out of business by the hundreds. The trust, he adds, is opposing legislation regulating butter and oleo making.

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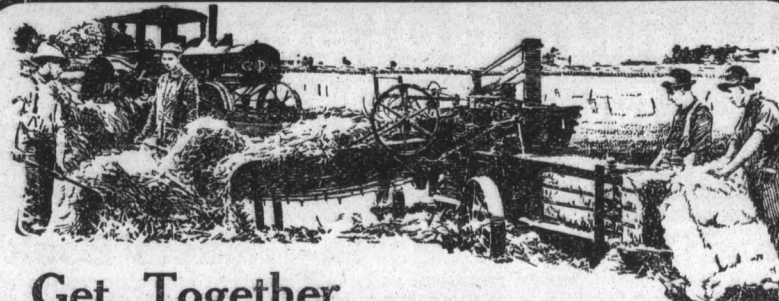
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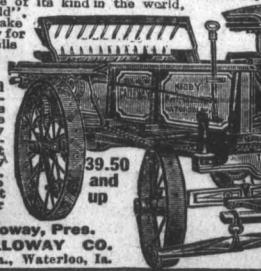
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Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same 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.

Feeding Cattle.—We have 19 head of steers coming three years old to fatten and we have ensilage, bean pods and clover hay for roughage; oats and corn for grain ration and would like to know if you would advise me to purchase cottonseed meal at \$30 a ton to mix with the corn and oats? A Subscriber, Rosebush, Mich.—Feed equal parts by weight of ground oats and corn with ensilage, corn fodder and clover hay, and your stock will fatten well. If you own plenty of corn, I do not believe it will pay you to buy cottonseed meal as well as to fatten with your own grain.

Partial Paralysis of Hind Quarters.—I have read the veterinary column of the Michigan Farmer with a good deal of interest and have gained much useful information from it. Will you kindly tell me what ails my sow and how to treat her? The first of August she had eight nice pigs, but for three weeks before she farrowed she seemed to wobble when walking and ever since has had poor control of hind quarters. I feed her plenty of corn and her appetite is good. This is a valuable sow and I am anxious to have her cured. F. J. S., Dowagiac, Mich.—Hogs fed too much corn for too long a period of time are likely to suffer from partial loss of power or weakness of hind quarters; it is too fattening and is not a balanced ration. Feed oats, oil meal, tankage and roots. Give her 10 grs. of ground nux vomica and 10 grs. potassium iodide at a dose three times a day in feed. Feed a good quality of food; exercise her daily, keep her dry and warm. Food will do more for her than drugs.

Sow Eats Her Pigs.—I would like to know the cause of sow eating her own pigs and if it can be prevented. F. A. K., Angola, Ind.—I have thought feeding brood sows meat before farrowing prevented them eating their pigs; but it may not be so. When sows have a high temperature and become insane from it, they sometimes eat their pigs and never again repeat the act.

Wart on Teat.—I have a Holstein heifer that came fresh six weeks ago that has a smooth wart on end of teat. C. T. B., Fremont, Mich.—Apply acetic acid to wart once a day and when you milk her use a milking tube.

Poor Appetite.—I wish you would tell me what to give to pig that will give him an appetite and strength. I would like to fatten him. A. H., Kingsley, Mich.—Give him a teaspoonful of fluid extract of gentian at a dose three times a day.

Nervous Spasm.—I have a sheep that is now well, but as her case was a very interesting one I would like to know what ailed her. A sheep in good health suddenly became twisted, head to one side and well pulled around as if in a cramped condition, but without medical aid get well. E. B., Merle Beach, Mich.—Your ewe suffered from a nervous spasm and it is not unlikely to have been caused by sudden change of temperature, food or water supply. This is not an infectious or contagious disease.

Unthrifty Horses—Barren Mare.—For several years I have read the veterinary column of the Michigan Farmer and find it very useful. We have six horses ranging from three to 20 years old that are not thriving; are thin with, rough coat. Have noticed them pass a few worms; also, my 20-year-old mare has failed to raise a colt the last two years. Subscriber, Marine City, Mich.—Give them all a thorough grooming once or twice a day and mix together equal parts powdered sulphate iron, ground wormseed, ground gentian, ground anise seed and ginger; give each horse a tablespoonful at a dose in feed twice a day. They should be well salted and their grain supply increased. If your mare has a vaginal discharge inject her with the following lotion daily: Dissolve 1 dr. permanganate of potash in a gallon of water.

Mange.—I have four-year-old colt that has several sores under belly and between fore legs, which itch. This young horse is not sick and his appetite is good. S. S., Morley, Mich.—Give your horse a desertspoonful of Donovan's solution at a dose in feed two or three times a day. Apply one part oxide of zinc and four parts vaseline to sore parts of skin once a day.

Lousy Horses.—I have three horses, all of which are lousy and have little sores which are not easily noticed. I have applied insect powder and Scotch snuff which seemed to give temporary relief. One of my colts has not thrived since coming off grass and she is fed four quarts of ground oats and two quarts of bran with timothy hay two or three times a day. G. T. L., Gagetown, Mich.—Put 4 or 5 ozs. of crushed stavesacre seed in a gallon of boiling water, let it simmer for two or three hours, then strain and fill to original gallon, then apply to lousy horses three times a week. Two or three applications will be all that is required to kill the lice. You should feed your filly some roots and give a tablespoonful of tincture gentian at a dose three or four times a day. The colt should be salted often and groomed twice a day.

Spinal Disease.—Have a growthy yearling colt that weighs 1,200 lbs., which I am quite certain has not a weak back, but travels with a swinging, peculiar gait in hind legs. L. I. A., Meridian, Mich.—Your colt suffers from imperfect development of spinal cord and will be benefited by giving him 1 dr. of ground nux vomica and 1 dr. potassium iodide at a dose in feed twice a day for 20 days, then give the nux vomica three times a day until he is well.

Puffy Hock.—I have a colt coming three years old that has puffs in both hock joints which appear to cause some stiffness after a drive. First noticed them early last fall and they have gradually increased in size since. M. Z., Coopersville, Mich.—Apply equal parts tincture iodine and spirits of camphor three times a week.

Roarer.—Have a horse which I thought had heaves, but our local Vet. tells me I am mistaken. This horse makes a wheezing noise when breathing and is worse before a storm. Have tried several remedies without benefit. R. M. B., Grand Rapids, Mich.—The trouble is perhaps in throat and if he fails to get relief by applying equal parts tincture iodine and camphorated oil or by blistering throat with cerate of cantharides occasionally, you might have him operated on for roaring.

Sluggish Kidney Action—Worms.—Have a horse that had a severe attack of kidney trouble four years ago and his kidneys have not acted right since. Buchu and juniper berries seem to relieve him, but fails to permanently cure him. I also have a horse that is troubled with worms. Miss F. T., Midland, Mich.—Give your horse a teaspoonful of powdered nitrate of potash at a dose in feed two or three times a day when you believe his kidneys are not acting right. For worms give 1 dr. santonine, 1 oz. ground gentian at a dose three times a week for two weeks.

Partial Loss of Power.—Have a five-months-old pig that weighs about 60 lbs. which has been ailing. She is fed wheat middlings and nothing else. She has been growing pretty fast and is now losing flesh rapidly. She has very poor control of fore legs and is neither gaining or losing in flesh. I find the Michigan Farmer a great help in every line of farming and management of live stock. W. M., Big Rapids, Mich.—You have been feeding your pig an unbalanced ration. Give her some oats, a little corn, some tankage and roots. She should also have more exercise and be kept in a dry, clean comfortable place. Give her 10 grs. sodium salicylate at a dose in feed three times a day.

Indigestion.—A litter of pigs which we raised the early part of last summer, began, when young, to grit their teeth and did not seem to thrive; the sick one would elevate head, holding it over back of well one and grit teeth. These pigs were in a clean, dry pen which opened out into a nice pasture, with plenty of pure water. Now, lately, my shoats seem to be developing this same habit of holding up head and gritting teeth. What is the cause of this ailment and how should it be treated? W. O. H., Big Rapids, Mich.—I am inclined to believe your pigs and shoats have worms. Give each hog a teaspoonful of fluid extract of spigelia and a teaspoonful of fluid extract senna at a dose once a day for a few days and they will soon get rid of the worms and commence to thrive.

Bog Spavin.—Last summer I bought a horse that had a bunch and scar on inside of hind leg which our local Vet. calls bog spavin, but it causes no lameness. W. G. M., Muir, Mich.—Apple one part iodine and ten parts fresh lard to bunch three times a week.

Mange.—Have a stallion that must itch for he bites his hind legs almost continually. One of his hind legs stocks. Have been feeding some molasses to my horses and believe it is doing them good, but have been told that if it was kept up long, it would be harmful. F. L. M., West Branch, Mich.—Dissolve one-quarter pound acetate of lead, 3 ozs. of sulphate of zinc and 3 ozs. carbolic acid in a gallon of water and wet his hind legs twice a day. I regard molasses, if fed in moderate quantities, and of good quality, a good food for horses and not at all injurious. Unthrifty horses should be fed molasses with their feed twice a day.

Indigestion—Surfeit.—I have a pair of horses five and six years old that are not thriving. I had their teeth floated last July and our local Vet., who done the work, said I would soon notice a difference in them. One of them has a few pimples on skin which cause them to rub a little. J. L., Monroe, Mich.—Mix together equal parts powdered sulphate iron, ground gentian, ginger, bicarbonate soda and charcoal and give a tablespoonful at a dose in feed three times a day. Groom them well twice a day and increase their grain ration.

Eczema.—Have a three-year-old filly that has an itchy condition of skin and some pimples. A. B. C., Buck Run, Mich.—Groom her well twice a day and apply to sore parts one part bichloride mercury and 1000 parts water until sores heal, then apply one part oxide of zinc and six parts vaseline. Give a dessertspoonful of Donovan's solution at a dose in feed or water three times a day.

Swollen Sheath—Stocking.—My 14-year-old horse is generally troubled with swollen sheath and a stocked hind leg every winter, but in summer he appears to be all right. His leg occasionally pains him. E. L. A., Seney, Mich.—The sheath of a horse frequently swells for want of exercise and it is often cause of the hind legs stocking. Give him ½ oz. nitrate potash, 1 dr. ground nux vomica and 1 dr. fluid extract digitalis at a dose in feed two or three times a day and keep up this treatment until relief comes. Bandage hind leg in cotton, but remember the bandage should be left loose. The horse should have plenty of exercise and the bowels kept open.

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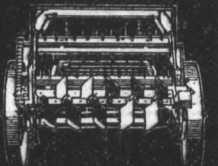
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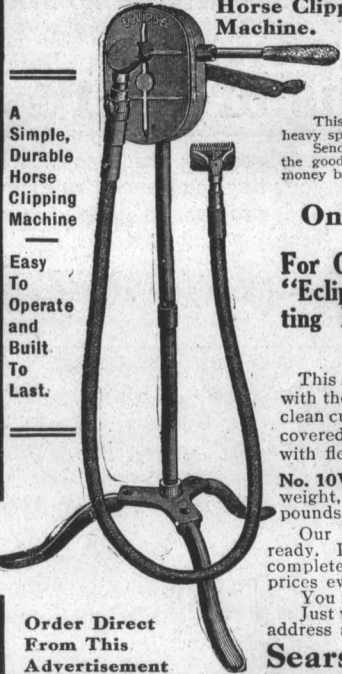
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For Our Big Value "Hathaway" Single Buggy Harness with Nickel Buckles, Solid Nickel Hook and Terrets.

Blind bridle, 5/8-inch box loop cheeks, overcheck or round side reins, 7/8-inch by 1-inch lines, V shaped breast collar, 5/8-inch split neck strap with line rings, 1 1/2-inch single strap traces; 1 1/2-inch single strap breeching; 5/8-inch split hip straps; 7/8-inch side straps; 7/8-inch scalloped turnback with crupper sewed on; gig saddle, flexible tree. Griffith style bellyband and shaft tugs.

No. 10W47108 1/4 Shipping weight, 21 lbs. Price, \$13.68

No. 10W47109 1/4 Imitation rubber trimmed, genuine rubber hook and terrets. Price, \$14.69

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Sears, Roebuck and Co., Chicago

Money From Poultry By-Products.

A source of income to the poultry keeper which is frequently overlooked entirely, or at least partially, lies in the by-products. The extent to which these yield good returns varies with the locality in which the poultry farm is located, but as a general thing the two chief ones—droppings and feathers—can be relied upon to add materially to the income.

There is much misconception as to the fertilizing value of poultry droppings. Much of this is due to a lack of knowledge as to how to handle them, as well as ignorance as to how and when to use them. A well-known writer recently gave, in a paper, what he said was their chemical analysis, and, on the basis of this analysis, placed them last in the list of barnyard manures. I would not dispute his analysis any more than I would another's figures as to the amount of droppings received per bird per year, and for exactly the same reason, viz., that the character, analysis and amount of droppings vary with the feed. As a matter of fact, fresh poultry droppings from pens in which an extensive and well balanced ration is fed, are many times as strong as the best and richest of all barn manures. By the most advanced market gardeners they are eagerly sought. From experience I can say that no other manure will produce as sweet or juicy green stuff, particularly during droughts, or grow clover so well as poultry droppings. In the east, where the grower is within reach of good city markets for garden truck, droppings are worth \$1.50 per barrel, by which I mean that a market gardener can, and many do, pay that price for droppings in preference to commercial fertilizers or barn manure.

My experience has been that each 100 fowls will produce about 25 barrels of pure droppings in a year. That quantity has been collected annually from the dropping boards in my pens, making no allowance for the amount that goes into the bedding on the floor. That would make a cash value, per 100 fowls, of \$37.50 per year. One frequently hears the question, "Will hens pay \$1.00 per year each?" Here is part of the answer.

I think that many poultry raisers are throwing away an opportunity to save a dollar by neglecting to utilize their hen manure. The best way to save it is the question that confronts many, so I will tell how I do it. My henhouses are all equipped with dropping boards under the roosts, from which the manure is shoveled every few days and placed in a large dry room. Here it is shoveled over occasionally and land plaster mixed with it. This process is continued until the manure is well dried, when it is placed in barrels or boxes and left until wanted. Plaster is applied to the dropping boards; besides drying out the manure it makes a good fertilizer in itself.

I use the manure for many purposes. It can be put in the grain drill and applied to oats, buckwheat, etc.; it can be used in the garden or spread on the meadows, and as a potato fertilizer I find it the best I can use.

Next to hen manure, feathers form the bulk of by-product of the larger poultry plants. In the Boston feather market, dry-picked white broiler and hen's feathers, minus the wing and tail quills, bring from 20 to 30 cents per lb. Many hens of the Wyandotte type will yield as high as 7 to 9 cents worth of feathers; especially is this true of fowls housed for generations in open-front houses.

I have been told by one of the largest manufacturers of Philadelphia that he generally can buy western feathers, mixed as to colors, in carload lots, at about six cents per lb. I do not believe, however, that dry-picked, well-cured hen's feathers can be purchased at so low a price, and even my Philadelphia friend said it would not always be wise to examine them too closely. But, in any event, we have, under eastern conditions, a return from by-products of over 40 cents per fowl per year.

For those who have a summer retail trade in dressed fowl and broilers there are several extras, especially if they are near a city in which is located a rendering plant. Nearly every such plant is glad to buy, even in comparatively small lots, the heads, feet, and "innards" or offal from poultry. The fat is rendered out for soap grease and the residue either used for tankage (fertilizer) or in the cheaper grades of beef scrap. They generally pay from 1/2c to 1c per lb. for this.

I had one woman customer who liked chicken fat for use in general cooking in

place of olive oil in some salad dressings. Consequently, I now remove the layer fat surrounding the lower abdomen from all birds drawn. This is tried out (it is nearly pure) and is sold at 15 cents per lb. This year fowl brought as high as 25 cents per lb. dressed, and as my old hens had been well fattened, I was satisfied to remove this fat, and the other customers were more than pleased, for to most of them that fat would have been a waste.

Besides these there are a lot of other little things that can be turned into cash, and, although seemingly small, they count up fast, especially in a large flock.

New York. A. E. VANDERVOORT.

INCREASING BEES VS. BUYING.

This is an important question to those who have but a few colonies and wish to secure a larger number as soon as possible; also to those who wish to make more of a specialty of bee culture. And well this might be, for honey the past year has been higher in price than ever before and indications point to an extra good crop of clover honey for 1913.

Bees of a good honey-producing strain of Italians are hard to obtain at a fair price and, in most cases, not at all near home. Bees owned by farmers are in hives of various sizes and shapes having immovable combs. Variance in size makes interchanging of hives and supers impossible. Disease, too, is liable to be in some of these hives. The way to buy, when need be, is to send to a supply dealer who can furnish standard hives and any kind of queens you care for.

The best way, however, is to increase from bees you have. Following is an excellent plan for early spring increase that will bring both a good increase and a good honey crop. I give it at this time so that hives and supplies may be ordered and put in readiness by those who care to increase. Colonies should be kept warm in spring and everything done to build them up. Feed a little thin warm syrup every day for 30 days after bees commence to fly.

When colonies are nearly full enough to swarm naturally, and you wish to divide them so as to make two from one, go to the colony you wish to divide, lift it from its stand and put in its place a hive containing frames of comb or foundation. Now remove the center comb from the empty hive and put in its place a frame of brood, either from the hive you wish to divide or from some other that can spare it. Put queen from removed hive on this comb in new hive, first seeing that frame contains no queen cells. If it does, destroy them. A queen excluding or honey board is put on top of new hive, and the old queenless colony on top of this. Put the empty frame from new hive in the vacant space in the old.

Leave this way for five days, then look over and destroy all queen cells, unless they are of good strain that you wish to breed from. Leave for ten days, during which time a fine lot of brood is started in the lower hive and every egg in the upper is capped. Then separate them, putting old hive on a new stand. It will be full of young bees and capped brood, and in about 24 hours will accept a ripe queen cell, virgin or laying queen. Would advise giving them a laying queen, as brood rearing will start that much sooner.

In this way you have made two strong colonies from one, lost not a particle of brood nor checked the laying of your queen. The old hive that has been set away can usually spare 15 or 20 lbs. of honey, which can be taken with an extractor, giving the queen plenty of room to lay.

N. F. GUTE.

ARE YOU GETTING WINTER EGGS?

The winter thus far has been unusually favorable to egg production and if you are not getting a paying yield there must be some good reason for the failure. Are your hens in comfortable quarters to which fresh air and sunlight have access? Are they free from lice? You cannot expect winter eggs if they are annoyed by lice; successful feeding for eggs and lice at the same time is an utter impossibility. It is an unpleasant sensation to feel chicken lice playing hide-and-seek in your hair every time you go into the hen-house, but hold! How do you suppose the fowls that stay there all the time like it?

Filth and its animated attendant, lice, are responsible for four-fifths of our poul-

PFIELE'S 65 Varieties
Land and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1913. Write Henry Pfiele, Box 676, Freeport, Ill.

48 BREEDS Fine pure bred chickens, Northern raised, hardy and very beautiful. Fowls, eggs and incubators at low prices. America's greatest poultry farm. Send 4c for large, fine, Nineteenth Annual Poultry Book.
R. F. NEUBERT, Box 867, MANKATO, MINN.

55 BREEDS Pure-Bred Chickens, Ducks, Geese, Turkeys, also Incubators, Supplies, and Collie Dogs. Send 4c for large Poultry book Incubator Catalog and Price List.
H. H. HINIKER, Box 56, Mankato, Minn.

WON SWEEPSTAKES
at Battle Creek Diamond Crystal Poultry Show Dec. 17-22-1912 on solid Am. varieties also 1, 2, 4, hen, 1, 2, 4, chl. 2, 3, pul. 4, ck. 2, pen and several specials on 12 birds, 8 breeders exhibiting W. Wyandottes. Stock for sale, Eggs and chicks by parcels post. Circular free.

Barred Rock Cockerels—Big, sturdy fellows, hatched from great layers. Prices reasonable. W. C. Coffman, R. 6, Benton Harbor, Mich.

MAMMOTH White Holland Toms, only \$4 a piece while they last—none better. Satisfaction guaranteed. Mrs. Mae Whitbeck, Montague, "Two Pines" Mich.

COLUMBIA Wyandottes, Winners at Chicago, Grand Rapids, South Bend and St. Joseph. Stock and eggs RICHARD SAWYER, Benton Harbor, Michigan

BARRED ROCK COCKERELS of the Bradley strain, at \$2 and up while they last. A. A. PATTULLO, Deckerville, Mich.

WHITE Wyandottes—25 May and June hatched cockerels weighing from 7 to 8 lbs. from my famous winter laying strain. L. M. OLDS, Ypsilanti, Mich.

MAMMOTH Bronze Turkey toms & hens, Silver & Partridge Wyandotte cockles, Ind. Runner drakes. Prices reasonable. E. H. & J. A. Collar, Coopersville, Mich.

CRYSTAL WHITE ORPINGTONS—A few choice cock-eggs after January 15th. Mating list sent. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Mich.

Silver, Golden and white Wyandottes, a fine lot of young stock. New circular ready in February. A. FRANKLIN SMITH, Ann Arbor, Mich.

White Wyandottes—Noted for size, vigor and egg production. 1913 circular ready in February. A. FRANKLIN SMITH, Ann Arbor, Mich.

White Wyandottes—April and May hatched cockerels for sale. Send for 1912 circular. DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.

Prize Winning Barred Rocks, R. I. Reds, Mammoth Pekin and I. Runner ducks Stock for sale. Eggs \$1, \$2, \$3 per set. Utility \$5 per 100. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

DOGS,

HOUNDS FOR HUNTING Fox, Coon, Skunk and Rabbits. **FERRETS** Send 2c stamp. W. E. LECKY, Holmesville, Ohio

FOX AND WOLF HOUNDS of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale. Send stamp for Catalogue. T. B. HUDSPETH, Sibley, Jackson Co., Mo.

FERRETS.

6000 FERRETS FOR SALE—Price list free Book on ferrets C. J. DIMICK, Rochester, Ohio.

2,000 FERRETS They hustle rats and rabbits. Small, medium and large. Prices and book mailed free. N. A. KNAPP, Rochester, Ohio.

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HATCH OUT DOLLARS

If you are thinking of going into the poultry business—1913 is the year to start. If you are already a poultry grower, this is the year to broaden out. Go after a larger share of the poultry and egg profits this year is sure to bring. For in 1913 it is a case of high prices and lower cost of production.

But the way to win poultry profits is to know the latest and best methods. Our 1913 FREE Book, "Profitable Poultry and Egg Production" is a reliable poultry growers' guide. Eight special chapters of vital interest: Chapter I—What is Possible in Poultry Meat Production; Chapter II—What Can Be Done in Way of Egg Production; Chapter III—Deep-Litter Feeding Experiments of 1912; Chapter IV—Quick Maturity in General-Purpose Fowls; Chapter V—Ages and Weights of Chickens for Table Use; Chapter VI—How to Establish Prolific Egg-Yield Flocks; Chapter VII—Today's Best Chance in the Poultry Business; Chapter VIII—Small-Scale Poultry Keeping on a Practical Basis. Write for the Book today.

CYPHERS Incubators and Brooders

are the right poultry equipment for real results—uniformly high percentage hatches of chicks that live—and no heat or moisture troubles. You can't afford to experiment! Be rightly prepared—get the whole good out of your 1913 opportunity, But

Get Our Free Book

It tells also about Cyphers Company's "Free Bulletin and Personal Letter Service" which keeps us in constant touch with our customers—helps them win success. Write today—244 big pages—500 illustrations. CYPHERS INCUBATOR CO., Dept. 35, Buffalo, N. Y.

HATCHES ON A GALLON RAYO Incubator

Fill oil tank once with one gallon of oil, then light lamp—the RAYO, with automatic regulator, will complete the hatch. Cheap, easy.

Saves big oil-money

Lamp underneath—perfect radiation—even temperature. Turn eggs without removing tray. Clean lamp without removing tank or chimney. See eggs and thermometer through glass top. Regulator adjusts exactly. Double heating system saves heat. Automatic ventilation. Roomy nursery. Big hatches certain—fine, strong chicks. Low direct price, freight prepaid. Ask for Free Catalogue No. 10.

Rayo Incubator Co.

946 South 13th Street Omaha, Neb.

99 CHICKS FROM 100 EGGS

\$39.60 profits from \$2.50 worth of eggs! That's the record of one of our customers. Hundreds of men, women and children coining money from the

"SIMPLICITY" COMBINED HATCHER & BROODER

All metal. Sanitary. Economical. Nothing to get out of order. Averages better than 85 per cent. hatches. 50 and 100 egg sizes. Fully guaranteed. To start you we will lend you a Simplicity for your first setting. Try it. Count your chicks. Send it back if you are not delighted with it. Failure impossible. Experience not necessary. Write today.

Indianapolis Corrugating Co. 104 E. St., Indianapolis, Ind.

LILLIE FARMSTEAD POULTRY

B. P. Rocks, R. I. Reds, and S. O. W. Leghorn eggs for sale. 15 for \$1.26 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

Here's What I'll Do—For Every Michigan Farmer Reader Who Writes Me a Postal Card



Mrs. Laura J. Clark of Illinois, winner in the Missouri Valley Farmer and Nebraska Farm Journal contest, hatching 140 chicks from 140 eggs.

Mr. George W. Black of Indiana, winner in Successful Farming's 1911 contest with two 100 per cent perfect hatches.

Mrs. M. J. Clifton of Oklahoma, winner in the 1910 Successful Farming Contest by hatching 140 chicks from 140 eggs, 100 per cent perfect.

Mrs. F. H. Osman of Ohio, winner of the "Tycos" cup shown below, offered participants in contests by manufacturers of Tycos Thermometers.

F. E. Bennett of Ohio, winner in the 1912 Successful Farming Contest—with record of three 100 per cent perfect hatches.



You Can be a Winner. Let Me Tell You How.

If you write me a postal card I will send you the most remarkable hatching facts ever published. I will make you the **lowest priced proposition you ever heard of**. I will show you how to make championship hatching records and prove to you that you can make **greatest success right from the start** with a World's Championship Belle City—**prove with facts and figures its money-making power**. I will send you the reasons why the Belle City won six World's Championships and why no other hatcher has equalled its records. Won't you write me? I will send you my valuable collection of

World's Championship Hatching Facts—FREE

I have been advertising in Michigan Farmer eight years. I am proud to number thousands of Michigan Farmer readers among my **195,720 customers**, which also includes the **U.S. Government**. The remarkably low price I am making this year is sure to bring me hundreds of new Michigan Farmer customers, because you can't buy a better hatcher or a better brooder, no matter what you pay.

I am proud of the fact that Belle City customers have won so many World's Championships; that the Belle City has won in contests totaling 10,000 hatches, against every other incubator made, many of them costing from two to five times more than my low price.

I am not asking you to take my word for it. Just write me and I'll put the facts, proof, figures and all information right in your home so you can judge for

yourself. I want to tell you about the folks who won the World's Championship prizes—send you their letters telling how they did it and what they think of the Belle City.

I want to tell you how to be in a position to win Championships yourself and the prizes and benefits that go with the title.

I will send you proof that will leave no question in your mind as to the remarkable hatching value of the Belle City. I will tell you the secrets of construction and the advantages in design, that have made my Belle City the **Championship Hatcher of the World**. I leave nothing unsaid. I tell you everything because I am proud of everything connected with the Belle City. I will send you all of these astounding facts, proofs and information so you can compare the Belle City, point by point, feature by feature, and record by record with any other incubator in the world.

I Want to Send You My 1913 Low Price On My 6-Time World's Champion Belle City Incubator

You have nothing to lose and everything to gain by writing me. Whether you buy of me or not, you ought to get my **portfolio of World's Championship Hatching Facts**. It will give you just the information you need to start you and keep you right in the poultry business. You will see where the World's Champion Belle City differs from others and why the difference is all in favor of the Belle City. I don't just say so—I **prove it to you by the records and the testimony of owners**. Isn't that the kind of proof you want? And I give you the chance to prove it yourself, in your own home—at my risk. I will show you positively that my 6-time World's Champion Belle City

Has Everything Worth Having In and On an Incubator

Yes, the World's Champion Belle City is a double-walled machine, with dead air space all over. Yes, it has the best self-regulator money can buy. Yes, it has a pure, cold-rolled copper heating tank and boiler. Yes, it has a real safety lamp. Yes, it has a big, roomy nursery. Yes, it has the famous "Tycos" thermometer. Yes, I furnish a strong egg tray, a reliable egg tester and a complete book of instructions. What more can any other incubator possess? What else can be put in or on an incubator that will help it hatch more eggs? Nothing! I've proved it. My World's Championships were won with 100 per cent hatches—by people who **never owned any incubator before they bought the Belle City**. What more can you ask? What more can anyone else give?

I will explain my manufacturing, selling and shipping plan, that cuts out all the frills and fancies, cuts out all the useless expense that makes it necessary for others to charge from two to five times my price in order to make a profit.

I'll tell you about my **World's Famous Belle City Brooder**, too. It's worthy of the Belle City Incubator. It is the only **Double-wall, Hot-water, top heat brooder made**. My price will surprise you.

Then, after you have read all the facts—should you decide to try a Belle City Incubator and Brooder—I will let you have them on

One, Two or Three Months' Test in Your Own Home. Money Back, if You Want It—And 10 Years Absolute Guarantee.

I want you to be the judge and jury and decide the merits of the Belle City by the evidence of your own eyes. I want you to try a Belle City outfit at my risk. I will send one to you on one, two or three months' home test. If it doesn't come up to what you expect—send it back and I'll return your money. If you decide to keep it, you are protected by my personal 10-year guarantee.

Write Me That Postal Now

All the information I want to send you is placed in convenient form—big type—lots of pictures—easy to read and easy to understand. **Don't miss my World's Championship Hatching Facts**. There is no charge, no obligation. You will be in the best position to select the **right incubator and brooder**, after you have read **Hatching Facts**. My sensational low price offer goes with my letter. Write me now—before you forget. Address Jim Rohan, Pres.

Belle City Incubator Company

Box P14

Racine, Wis.



1, 2 or 3 Months Home Test

10-Year Guarantee

Freight Prepaid Everywhere

Be Sure to Get My 1913 Low Price—Before You Buy Any Hatcher

Just Send Me a Postal Card

We Ship Quick From Buffalo, Kansas City, St. Paul or Racine

Your Winter Harvest in Eggs

There's not the slightest reason why every poultry raiser shouldn't have a harvest in eggs right now when eggs are high. Hens, your own hens, have a tendency to grow fat and lazy and the egg organs to become sluggish. This may be due to lack of exercise, the absence of green food and to other causes. But whatever the cause, remember that

Dr. Hess Poultry Pan-a-ce-a

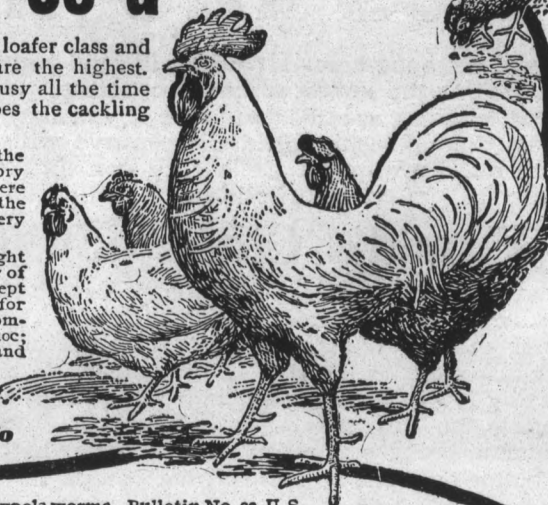
positively tones up the dormant egg organs and takes the hens out of the loafer class and makes them lay eggs for market right when prices are the highest. It keeps hens hungry for their grain, so they remain busy all the time scratching for a living—and it's the busy hen that does the cackling and the more cackling the more eggs.

Dr. Hess Poultry Pan-a-ce-a contains:
Potassium Nitrate. An Eliminant.
Nux Vomica. A Nerve Tonic.
Quassia. A Bitter Stomachic and Appetizer.
Hypophosphite of Soda. An Internal Antiseptic.
Iron (Sulphate). A Blood Builder.
Iron (Red Oxide). A Blood Builder.
Carbonate of Lime. An Antacid and shell forming.
Sodium Chloride. An Appetizer and Cleanser.
Under the supervision of Dr. Hess (M.D., D.V.S.) the above is carefully compounded and blended, with just enough cereal meal to make a perfect mixture.

Note the formula for Pan-a-ce-a in this advertisement; the definitions of ingredients are taken from U. S. Dispensary and our best writers. With the formula on the label there can be no exaggeration of claims. You can look up the ingredients in any medical dictionary, and besides every Hess & Clark preparation is guaranteed.

Our Proposition:—Feed your hens Poultry Pan-a-ce-a right now when eggs are scarce; if you have the least shadow of doubt that it has not made your hens lay more eggs and kept them free from disease at a cost of only a penny a day for 30 hens—take to the dealer the empty package and he is compelled to refund your money. 1½ lbs. 25c; mail or express 40c; 5 lbs. 60c; 12 lbs. \$1.25; 25-lb. pail \$2.50; except in Canada and extreme West. If your dealer cannot supply you, we will. Send us for Dr. Hess 48-page Poultry Book, free.

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Ashland, Ohio



DR. HESS STOCK TONIC improves digestion, increases the appetite, expels worms. Bulletin No. 22, U.S. Department of Agriculture, says: "Only 60 per cent. of the food taken by stock is digested." You know yourself that you can fatten hogs on the corn that passes through the steers undigested. "The Dr. Hess Idea" is to save a part of this wasted feed by increasing digestion. The formula is on every package and the U. S. Dispensary, or even a medical dictionary, will tell you whether the ingredients will produce the results claimed. And, besides, it's sold only on a written guarantee. 100 lbs. \$5.00; 25-lb. pail \$1.60. Except in Canada and extreme West and South. Send 2 cents for Dr. Hess Stock Book.

FREE. Dr. Hess (M.D., D.V.S.) will at any time prescribe for your ailing animals free of charge if you will send him full details. Mention this paper and send 2-cent stamp. 96-page Veterinary Book also free.

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Tells Why Farm Folks Make Big Money With The Old Trusty Incubator

400,000 people—most of them farm folks—have made big money with the Old Trusty. The Johnson's new book tells why. It also tells why the Old Trusty costs less than \$10, freight prepaid—and why anyone else would have to charge \$15 to \$20 for it.



Under \$10 Now

Johnson Pays Freight E. of Rockies

30 to 90 Days Free Trial And 10 Years Guarantee

You can read all about the Johnson's and their 400,000 customers and friends in this



Free Poultry Book—now ready for 1913. The Johnson's price is lower than \$10 complete—freight paid East of the Rockies, that far if you live beyond. Let Johnson tell you his price and send you his Big New 1913 Poultry Book, with over 300 photographs FREE. Address

JOHNSON—Incubator Man, Clay Center, Nebr.

YOUR HENS YOUR FARM YOUR MONEY

The Story of 25 Years with Poultry and Farmers and Farmers will help many Farmers get more eggs—better prices; make more and save more money; tell things few folks know on making money with hens. Find out about America's Largest Line of Incubators and Brooders, and get six poultry chapters written by Robert Essex himself—It's all in our Free Catalog—Write today. Address Robert Essex Incubator Co., 113 Henry St., Buffalo, N. Y.

You Can Earn a Good Living Raising Poultry

Out down living expenses—raise poultry for your own use and for sale to neighbors. Thousands make money this way with **SUCCESSFUL INCUBATORS** and **SUCCESSFUL BROODERS**

Life Producers—Life Preservers Why don't you do the same? Learn how easy it is to start. Booklet "How to Raise 48 out of 50 Chickens"—10c. Catalogue FREE. Write today. Address Des Moines Incubator Co., 368 Second St., Des Moines, Ia.

120PAGE POULTRY BOOK FREE

Tells how to succeed with poultry on the ordinary farm. How to make a first-class brooder out of an old piano box. What breeds lay best. Plans for poultry houses, how to feed, brood, etc. Describes **PRAIRIE STATE Incubators and Brooders** You will be surprised at the valuable information it contains. It's free. Write a postal for a copy today. (21) Prairie State Incubator Co., 413 Main St., Homer City, Pa.

Wisconsin Victorious in 3 BIG Hatching CONTESTS

Winner in Mo. Valley Farmer Contest in 1910. Also a winner in the Successful Farming Contest in 1911 and 1912. Read the record of results below, then bear in mind you can get this Prize Winning Incubator and the genuine Wisconsin Brooder—both for \$10.



30 Days Trial

Freight Paid East of Rockies

BOTH For Only \$10

WHY PAY MORE?

I stand ready to prove to you there are no better machines on the market for anything like my low price. I stand ready to let you prove it in your own home—to your own satisfaction (not mine), and pay the freight charges both ways. You take no risk—no chances. I will ship you one of my 125 Egg Hot Water Wisconsin Incubators and a 125 Chick Brooder on 30 days trial, and if you don't find it the best hatching outfit after 30 days trial, ship it back, and back comes your money. Machines that win in the Big Hatching Contests year after year, surely must have unusual merit. But remember, they must win your satisfaction or I take them back—return your money—pay all freight cost. Here's my offer.

125 Egg Wisconsin Incubator Both Prepaid \$10.00

Mrs. Jerry McMahon, Veederburg, Ind., won in the 1910 Mo. Valley Farmer Hatching Contest, hatching 125 chicks from 125 eggs with her Wisconsin Incubator.

Mr. C. B. Armitage, Atwater, Ohio, hatched 88 chicks from 88 eggs and 93 chicks from 93 eggs in the 1911 Successful Farming Hatching Contest, making two 100 per cent hatches.

Mrs. J. W. Mize, Vaughns Mill, Ky., won in the 1912 Successful Farming Hatching Contest, hatching 105 chicks from 105 fertile eggs.

Can you equal such records—certainly they can't be beaten. Where can you buy such hatching efficiency for the money? The reason is because Wisconsin has double walls, dead air spaces, double glass doors, copper tanks and boiler, nursery, Tyco's Thermometers, are self-regulating, well made of California Redwood, natural finish, complete—set up ready to use. Brooders equally well constructed, hover, safety oil lamp, wire yards—both the best in every way. Order a pair on my liberal 30 day trial—5 year guarantee and be convinced. Or write for catalog. The publishers of this paper vouch for my responsibility. (14)

WISCONSIN INCUBATOR CO., T. J. COLLIER, Mgr. Box 126, Racine, Wis.

\$7.35 FOR 155 EGG INCUBATOR

Biggest guaranteed incubator at price—155 egg capacity. Has hundreds of dead air cells—only incubator with this special construction—well made—cold rolled copper tank, hot water heat, double disintegrator, deep nursery, high legs, double doors, egg tester, safety lamp. Special price \$7.35. Incubator and Brooder together \$9.85. Frt. pd. E. of Rockies. Order direct from this ad (money back if dissatisfied) or send today for our interesting big free book. **PROGRESSIVE INCUBATOR CO. Box 164 Racine, Wis.**

BANTA

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and Almanac for 1913 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. **C. C. SHOEMAKER, Box 911 Freeport, Ill.**

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Before buying any kind of an incubator, at any price, from any factory, you don't have to be an expert to run it. **Miller's "Ideal"**—the greatest hatcher that ever came out of a factory. You don't have to be an expert to run it. **I'm Going to Pay the Freight—Give You An Unqualified Guarantee—Include Everything FREE.** When writing, tell me what size incubator you are interested in and I'll send you my **BIG ILLUSTRATED POULTRY BOOK FREE.** Describes Standard Bred Poultry, tells how to become successful and other valuable information. Easily worth \$1.00. Because it contains advertising, you get it FREE. Ask for copy. **J. W. MILLER CO., Box 300 Rockford, Illinois**

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try not being profitable. Prevention is much more simple than cure, and so, as a matter of fact I think it inhuman and disgraceful to have dirty, lousy coops. Lice and absolute cleanliness never exist at one and the same place, so, if your fowls are lousy, you are at fault.

Also, you are the remedy. Keep their house clean and dry, and supply a good dust bath. I find sifted coal ashes, placed in a receptacle in the house in the sunshine, cannot be beaten. The dust stirred up by the hens dusting themselves, is just what you want to enter every crack and crevice of the building. Then assist them by giving two hand dustings with some good prepared lice powder, at intervals of a week or ten days.

The All-important Feeding Problem.

I do not want to suggest what you shall feed, for most every poultryman has his own formula. If you expect your hens to lay they must have the right kind of food to make eggs from. A variety is what it takes. You often hear people say they do not get eggs in winter but have plenty of them when eggs are low—est during the spring and summer. You ask them what they feed and almost all answer, "I feed all the corn they will eat." Well, corn is the best poultry food we can find, but if we feed corn and nothing else we cannot expect much in the way of egg production.

At present there are two general methods of feeding, known as wet and dry mash feeding. I am somewhat in favor of the latter, for I find it much easier than the former and, from experience, I know it to be just as good. The following is a good formula to feed from hoppers at all times: Bran, 100 lbs.; linseed meal, 50 lbs.; corn meal, 50 lbs.; middlings, 50 lbs.; charcoal, 5 lbs.; salt, 3 lbs.

In the morning feed whole grains, such as, wheat, oats, millet, etc., scattering same in litter on the floor and making them work. If it is not well covered by the litter, take a fork and throw litter into piles and see how vigorously the hens will work to tear them down.

At noon I feed green foods, such as cabbage, mangolds, potatoes, turnips, sprouted oats, etc. If you have sour milk give them a pan of same at noon; if not, try some beef scraps.

The evening meal is fed about two hours before sundown in winter and consists mostly of shelled corn, wheat and oats, this also being thrown in litter to make them exercise before going to roost. Grit, oyster shells and charcoal are kept in separate hoppers. Warm water should be given at least four times a day, the receptacle being placed high enough so they cannot scratch litter into it.

Never feed anything but good sound grain; food that is the least bit mouldy will cause you to have sick hens sooner or later. And do not neglect the green food, for if you do you will not have a full egg basket.

The last point is care and attention. We get out of anything just what we put into it and nothing more. If we give our hens careful thought and time, and place our whole will power behind them, we will no doubt make a success of the business, just as we would of any other. It is very fascinating to care for poultry and you will learn to love your fowls and to take an interest in them. And right now is the time to reap a harvest from them.

Livingston Co. W. B. OPDYCKE.

Handbooks for Poultrymen.

"Profitable Breeds of Poultry," and "Practical Poultry Keeping," are the titles of two members of a series of 200 handbooks being issued by the Outing Publishing Co., of New York. The first named is by Arthur S. Wheeler who presents, in an interesting and readable way, the peculiarities and possibilities of the leading business breeds of poultry, including with the four great general-purpose breeds—Rocks, Wyandottes, Reds and Orpingtons—the Mediterraneanans and the Cornish. The book also contains a chapter on housing and management. "Practical Poultry Keeping" was prepared by that well known poultry writer, R. B. Sando, and is designed to satisfy the needs of the beginner who would secure the essentials quickly and without deep study or costly experience. Practically every phase of the business of breeding, rearing and handling chickens for profit is covered, very concisely but clearly, making the little volume essentially a handbook for the busy poultry owner. These books, as well as all others of the series to which they belong, are substantially bound in flexible cloth, and they sell at the fixed price of 70 cents per copy. They may be ordered through the Michigan Farmer.

Lessiter Bros., of Oakland county, write: "We have a car load of steers and lambs feeding for the spring market. Very few cattle and lambs being fed in this locality and we look for a good market the coming winter and spring."

Grange.

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

THE FEBRUARY PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Song, by quartette.
Roll call, responded to by a valentine sentiment.
"Sing as You Work," a paper.
What are the essentials of co-operation in business?—a talk or paper.
Ten minutes in charge of "Surprise Committee."
Singing strength: 1. On the farm. 2. In the house.
Recitation.
Question box on "Duties of State Officers," conducted by lecturer.
Song.

PASSING OF "FATHER OF THE GRANGE."

Oliver H. Kelley, known to farmers throughout the entire country as the "father" and founder of the Patrons of Husbandry, died at his home in Washington, D. C., on Monday of last week, after an illness lasting but 24 hours.

Our Washington correspondent had the pleasure of calling on Bro. Kelley in October last at which time he pronounced him a very well-preserved man for one of 87 years. While no longer actively engaged in work of the Grange, Bro. Kelley's interest in the order never diminished. In fact, but two years ago he began the task of writing a ritual for its highest degree that would embody his earliest ideas upon the subject. His last appearance at a meeting of the National Grange was at its session in the Capital three years ago.

Bro. Kelley was a man of indomitable will and energy. Today he is affectionately called, by the members of the big order which he founded, "Father Kelley." Many times has it been remarked that for so old a man he was very conversant with the trials and tribulations that beset him when he was attempting to interest agriculturists all over the country in the formation of a secret agricultural society. He was not a theorist, but a practical farmer—a pioneer farmer of Minnesota during the trying days when the Indians roamed freely over that "far northwest territory."

In 1864 Bro. Kelley accepted employment in the Department of Agriculture—then only a bureau of the Department of the Interior—and, while on an official tour, found conditions in the south which actually exist to this day—the use of crude implements for tilling the soil and of crude methods in planting and caring for crops. He was a firm believer in farm demonstration as a means of educating the farmer and may be said to be the pioneer of the plan of holding farm institutes where agricultural scientists in the employ of the government could lecture on modern farming. This was one of his purposes in organizing the Grange.

Bro. Kelley was born in Boston, Jan. 7, 1826. When twenty years of age he was a newspaper reporter and later moved to Minnesota and engaged in farming. He was the first person in that state to operate a reaping machine. Three daughters and a brother survive him.

MORE THAN 100 NEW SUBORDINATES FOR PAST QUARTER.

National Secretary Freeman reports the number of Granges organized and re-organized from Oct. 1, 1912, to Dec. 31, 1912, both inclusive, as follows:

Organized.	
California	1
Connecticut	1
Idaho	6
Illinois	1
Indiana	2
Iowa	1
Kansas	3
Kentucky	2
Maine	1
Massachusetts	7
Michigan	6
Total	106

Re-organized.
Kansas

Average Age of Farmers.—At a recent meeting of Barry County Pomona the fact was emphasized that a recent census of the farmers in the adjoining county of Kent showed that the average of the men who are doing the farm work in that county is above 50 years. This so-called census was taken under direction of the government agricultural expert recently assigned to that county, and the surprising fact disclosed appears to prove, indisputably, that the modern system of education is turning the boys away from the farm.

Farmers' Clubs

CLUB DISCUSSIONS.

Favor County Bridges.—The Peach Grove Farmers Club at their regular meeting, Saturday evening, Jan. 18, rendered a very good program of music and recitations, with talks on the re-submitting of equal suffrage at the spring election. At the business session of the meeting they brought up the question of bridge building, by townships or counties and worked out the following resolutions: "Whereas, many townships in the state are overburdened in the building and keeping in repair of necessary bridges for public use; and,

Whereas, many of these are of more benefit to other parts of the county than to the townships building them; and,

Whereas, some other states, as Ohio and Indiana, have laws making the building and repairing of public bridges the business of the county; and,

Whereas, that plan seems to be the just solution of the bridge question;

Therefore, be it resolved that Peach Grove Farmers' Club use its good influence and labors to the end that a state wide bill, providing for the building and maintenance of bridges by the county, be presented to the present legislature for enactment; and be it further

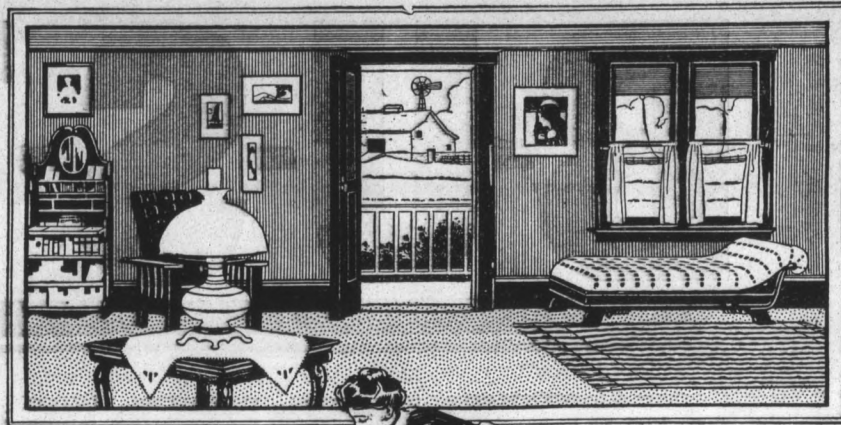
Resolved, that we ask and urge the co-operation of the State Association of Farmers' Clubs and all local Clubs in urging this on our legislature.

Gentlemen's Day.—The January meeting of the Indianfields Farmers' Club was held at the pleasant home of Mr. and Mrs. J. L. Truax, their farm being known by the name of "Walnut Corner." About 65 members and invited guests were present. This date being known as "Gentlemen's Day," they took entire charge. A sumptuous dinner was served by S. G. Ross and his able assistants, promptly at 12:00 o'clock. After a brief social hour the Club was called to order by President William L. Eldridge. Meeting opened by members singing, and prayer by Rev. E. Warren. A good literary and musical program was then given. A paper by S. G. Ross, "Can our present system of agricultural credit be improved upon for the farmers?" The topic for debate was, "Resolved that special farming is more profitable than general farming," was led by R. W. Black for the affirmative, and R. Park for the negative, who were ably assisted by others. The judges as to the best arguments were Mesdames Ida Smith, Mary Park and Lovey Taggett, who decided in the negative. The question box was well patronized. The gentlemen closed the meeting by singing Annie Laurie, and by an enthusiastic encore gracefully responded by singing Auld Lang Syne.—Mrs. Margaret Arnold, Sec.

Discuss Bonding for Good Roads.—The first meeting of the year of the Washington Center Farmers' Club was held at Elmwood, the pleasant home of Mr. and Mrs. S. N. French. The president-elect, Mr. W. C. Long, brought out some very important subjects which will take effect during the year, such as giving premiums at the Club fair to make it worth while for the younger element to take more interest in raising different crops, such as grains, vegetables, etc., also poultry. At about 12:30 p. m. the hostess, assisted by the waiters, served an elaborate dinner, to which everyone did more than ample justice. The program included a paper, "Township highway problems," led by C. N. Curren. Question, "Bonding the county or township for good roads. Would it be best?" by W. C. Long. This was followed by a lively discussion from other members. Mr. George Long expressed his ideas very forcibly as to bonding the township and let the coming generation pay for it, while others were not in favor of the plan. The next meeting will be held at Old Homestead, with Mr. and Mrs. James DeMott, Feb. 13. Everybody come.

Favor a Farm Expert.—The January meeting of the North Shade Farmers' Club was held at the residence of Mrs. Nettie and Valois Todd. A goodly number were in attendance and much interest was taken in the subjects presented for discussion. The question of securing an advisory expert from the department of agriculture was discussed at some length at the morning session. A sumptuous dinner was enjoyed by those present and added to the inspiration of the afternoon program. The music by the male quartette was greatly enjoyed by those to whom music hath charms. Among the many fine numbers on the program was the paper by Mrs. Edward Edwards on the subject, "What kind of company should young ladies keep?" Every young lady and her mother should have heard it and its truths would not hurt the fathers of the young ladies and the young ladies' "best fellows." C. E. Bond discussed the question, "Should the farmers of Michigan organize a bean growers' association?" The following officers were elected for the ensuing year: President, Ray Salisbury; first vice-president, Wm. T. Hill; second vice-president, C. E. Bond; recording secretary, Mrs. Ray Salisbury; corresponding secretary, Mrs. Bert Stonebrook; organist, Mrs. E. Edwards.

Organize New Club.—A banquet, at which the enthusiasm ran high, was given at the W. and A. hall in Climax, Jackson county, for the farmers surrounding that village. Mr. Jason Woodman, of Kalamazoo, agricultural expert for Kalamazoo county, also gave an address in which he outlined his future work. L. J. Bradley, secretary of the Michigan Corn Improvement Association, addressed the assembly on "Corn Improvement." Following the banquet a Farmers' Club was formed, to be known as the Climax Farmers' Club. A temporary president and secretary were elected, viz.: Jud Pierce and J. W. Sherman, Jr.



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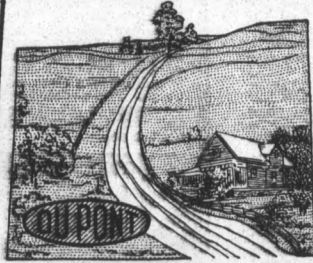
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Our stock includes practically "everything under the sun". It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket".

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