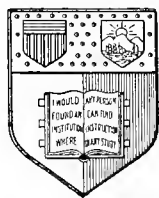


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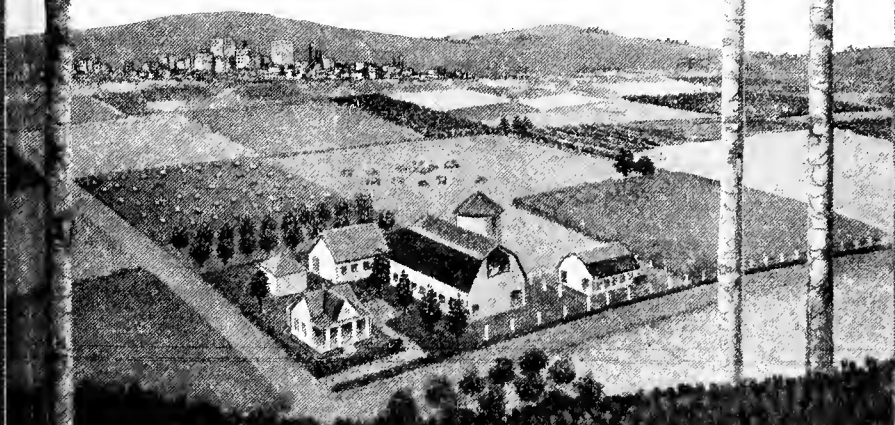
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The
COW
THE **MOTHER** *OF*
PROSPERITY



INTERNATIONAL HARVESTER COMPANY

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AGRICULTURAL EXTENSION DEPARTMENT

HARVESTER BLDG. CHICAGO



*For better cows,
better cared for.
Ralph Stayne*

THE cow—one of the greatest blessings to the human race.

No nation or people has become highly civilized without her.

She produces the best human food on earth.

She makes this health-building, strength-giving food from grass and coarse plants.

She provides not only food for her young and her keeper's family, but a surplus, besides, to sell.

Without her agriculture is not permanent or prosperous, people are not healthy or happy.

Where the cow is kept and cared for, civilization advances, lands grow richer, homes grow better, debts grow fewer.

Truly, the Cow is the Mother of Prosperity.

The
COW
the **MOTHER** *of*
PROSPERITY

By RALPH A. HAYNE
OF THE AGRICULTURAL EXTENSION DEPARTMENT

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P. G. HOLDEN FIELD DIRECTOR
HARVESTER BLDG. CHICAGO

THERE IS A PLACE FOR THE COW IN THE AGRICULTURE OF EVERY COUNTRY

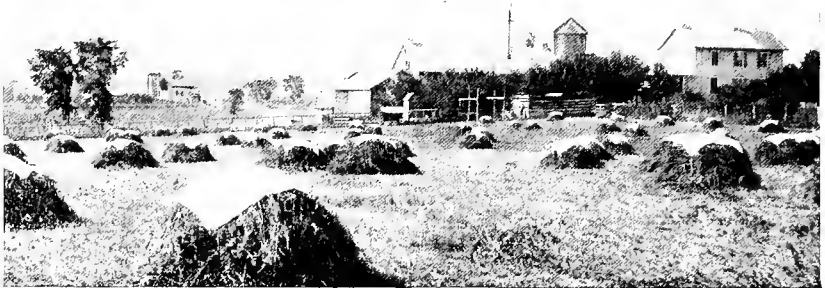
Wherever the cow has taken her rightful place, and man has done his part, we find the highest type of farming; we find farmers living on their own farms, raising crops in rotation, which is the way the Lord intended us to farm.

We find on the farms, barns with mows and bins and silos—regular factories working the year 'round, getting the very most from the farm's crops and furnishing an income every week of the year.

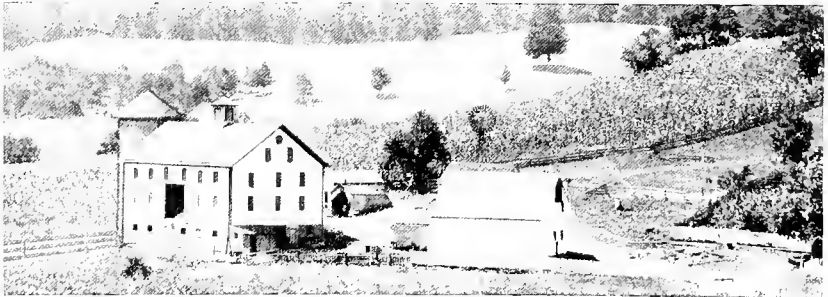
We find homes with conveniences.

We find intelligent, thrifty, debt-free people with minds and hands alert from steady employment.

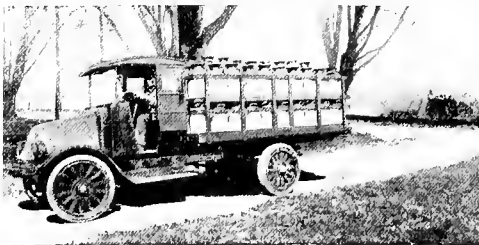
We find a good citizenship, a good agriculture.



The best methods of farming, the largest crops and the greatest steady return on investments are found on the well regulated dairy farm.



The dairy cow has made many hilly farms into comfortable country homes surrounded with grass and alfalfa and prosperity.



Here's a truck load of cream right fresh from a dairy neighborhood. The load is worth \$1,125 and it's only taking away \$7.20 worth of fertility.

THE COW HAS NOT TAKEN HER RIGHTFUL PLACE IN EVERY COUNTRY

OUR GREAT SOUTH NEEDS MORE COWS

Cows to furnish milk for people who have long done without it.

Cows to furnish milk and butter for boys and girls who have starved for muscle-making, bone-making food.

Cows to cure a one-crop agriculture.

Cows to eat crops that should be growing in place of cotton.

Cows to furnish a year 'round income, without which no people are prosperous or happy.

Cows to help build and maintain a fertile soil.

Our great South needs more cows.

There are right here in this civilized country thousands of boys and girls; undersized, diseased, with weak bones, bad teeth, dull intellects, starving for the cheapest and best food on earth—MILK.



This old cotton crop is all right to sell one month in a year but it's treacherous and disappointing when we depend on it the other 11 months.



Here's a cream crop that we can sell every week, 52 weeks of the year, winter and summer; it pays the bills and keeps the money jingling in our pockets.



These old southern fields that have been leached and gullied and robbed under the curse of a "one crop" farming can still be patched with Bermuda and lespedeza into valuable cow pastures.

Our great South needs more cows.

OUR GREAT WHEAT-GROWING WEST NEEDS MORE COWS

Cows to break the monotony of countless acres of "one-crop" in summer and months of inaction in winter.

Cows to furnish a plentiful home supply of milk and butter instead of the scanty supply that is now shipped in cans and packages across the continent to these Wheat Belt farms and towns.

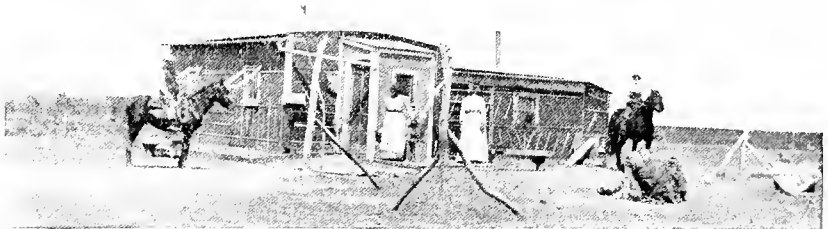
Cows to furnish something to sell when money is needed, and money is always needed.

Cows to make homes of the farms, not just places to stay.

Our great West needs more cows.



This great wheat-growing country will suffer for the sins of "one crop" farming until more alfalfa, sweet clover, corn and sunflowers are grown and stored in mow and silo to feed cows and steers and farm stock.



This place will never be a real home until cows browse the blue stem in summer and eat from the pit silo in winter.



We don't need to wait until we can build a fancy barn before we have cows; build a straw shed for them and keep it clean, ventilated and light.

Our great West needs more cows.

OUR GREAT CORN BELT NEEDS MORE COWS

Cows to eat silage made from thousands of fields of corn stalks now going to waste.

Cows to help the tenant farmer buy a farm for himself.

Cows to change the grain farmer's winter idleness to profitable work.

Cows to help stay the mighty drain each year of Corn Belt fertility.

Cows to change the many one-story, dingy Corn Belt barns to real buildings with paint and silos.

Our great Corn Belt needs more cows.

The rich, black lands of many parts of the Corn Belt will never be "garden spots of the world" until these squatty little stables are replaced with big barns and silos, housing and feeding the Corn Belt's share of cows.



Every year millions of loads are hauled off the Corn Belt farms and not a thing put back to keep up the fertility.

***We need more cow farmers
and fewer crop farmers***



Millions of dollars' worth of good Corn Belt feed wasting, burning, clogging the plow and harrow. Some day cows will eat these stalks out of silos — monuments to progress.

Our great Corn Belt needs more cows.

We need cows, good cows, well cared for cows wherever folks live and fields are farmed and grasses grow.



It makes no difference
whether we have but one family
cow—



or whether we have three or four “farm” cows to furnish the family with milk and butter and “sell what we don’t need”—



or whether we have a regular dairy herd of 20 or 40 cows.

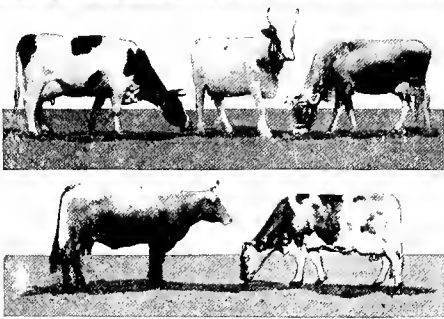
It makes no difference which we have, we want to get

The most and best milk,
The most and best cream,
The most and best butter,
The most and best profit

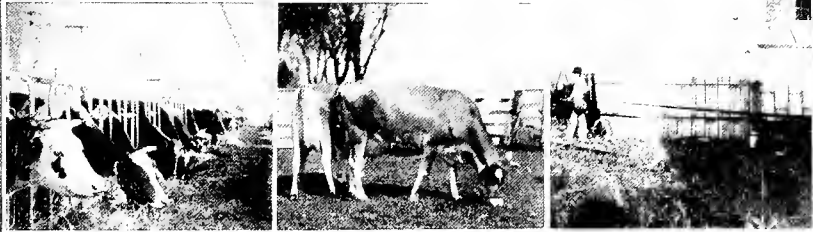
from our cows.

If we don’t want all this and if we don’t do our best to get it, there is something wrong with us.

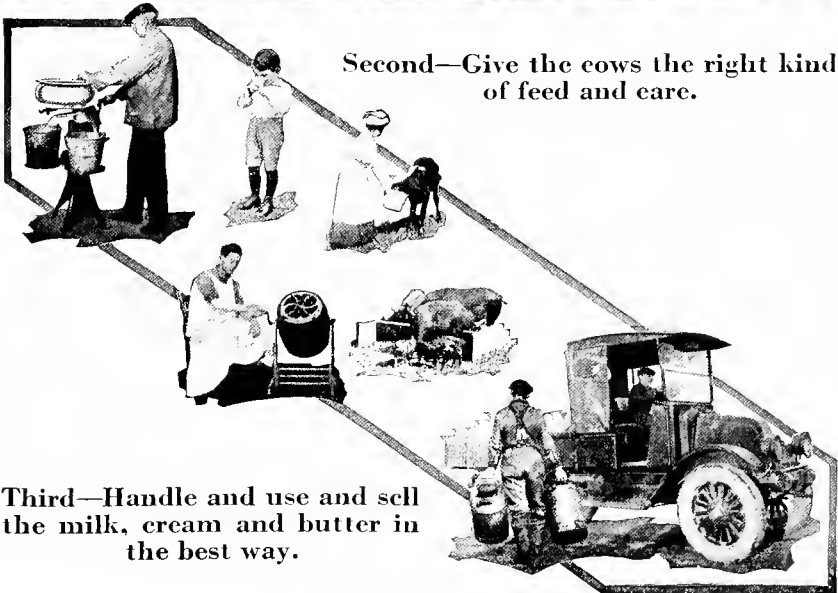
TO GET THE MOST AND BEST MILK, CREAM, BUTTER AND PROFIT FROM OUR COWS, WE MUST:



First—Have the right kind of cows.



Second—Give the cows the right kind of feed and care.

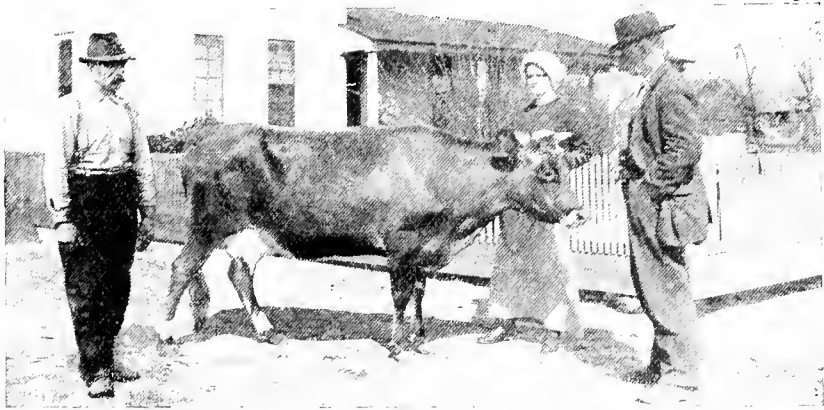


Third—Handle and use and sell the milk, cream and butter in the best way.

HOW WILL WE GET THE RIGHT KIND OF COWS?

THERE ARE TWO WAYS TO GET COWS

One way to get cows is to buy them.



There's uncertainty in buying cows even from our neighbors.

The other way to get cows is to raise them.



When they are born and raised on our farm, we know all about them.

The man who wants to start dairying and has no cows, of course, must buy cows to start with.

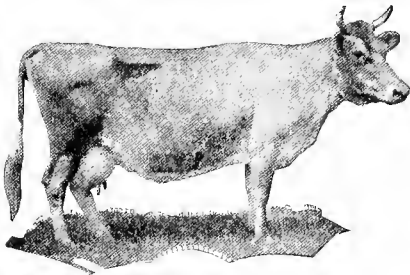
There may be cases where it is good business to continue to buy cows to keep up the herd, but remember:

Few men ever make a success of dairying when they depend always upon buying cows. (Read pages 11 and 20.)

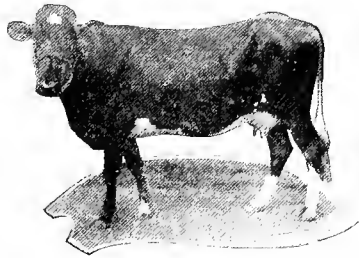
The best and cheapest way to get good cows is to raise them.

WHEN WE BUY COWS TO START DAIRYING LET'S GET THE BEST COWS WE CAN

It is not always necessary to pay big prices to get good cows but we will have to pay more for good cows than for common ones.



**Better pay \$150 or more for a
good cow—**

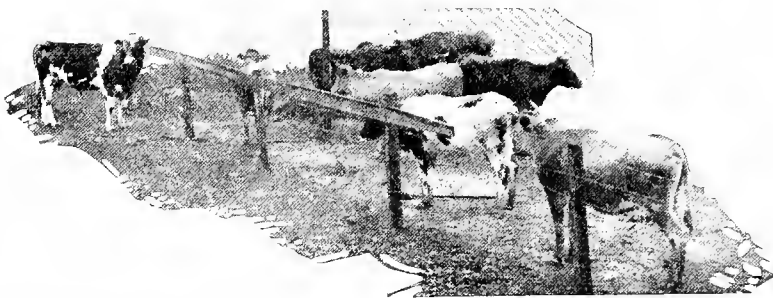


**than to pay \$75 or less for a
poor one.**

The good cow's milk and calf will make up the difference in price the first year, besides she should continue to be a source of profit and satisfaction, while the poor cow is apt to make us poorer the longer we keep her.

If we already have common cows and can't arrange to get better ones to start with, then **let's take care of those we have** so that they can do their best, and by the use of good sires raise calves that will make better cows than their mothers, and get started in that way.

Starting with mongrel, low-producing cows is a pretty slow way to get a high-class dairy herd, yet by continued use of good sires a good herd can be developed from the commonest kind of foundation. Read page 63.



A good bull with a long line of high producing ancestors is about 75 per cent of the herd when the cows are mixed mongrels, but it takes more than one cross of good blood to change a herd from bad to good.

**HOW CAN WE TELL A GOOD COW FROM A POOR ONE?
THERE ARE TWO WAYS TO JUDGE A DAIRY COW**



Weigh the milk.



Test the milk.



Weigh the feed.



Look at the cow.

First way: By weighing her milk, keeping a daily record of the amount she gives, testing her milk to find out how much butter fat there is in it, and keeping a record of the feed she eats so we can tell whether or not she is paying for her feed with milk and butter fat.

This is the sure way to judge a cow.

When we can buy cows that have had records kept by honest men, then we know what we are buying. (Read page 48.)

Not so many cows have had records kept, so at present we must depend largely on the second way to find good cows.

Second way: By examining the cow and judging by certain shapes and characteristics whether or not she is a good one.

There are "good points" of shape and appearance and feel that almost always go with good milk production.

WHAT ARE THE SIGNS OF A GOOD COW?

We can't always tell a good cow by her shape or "good points."

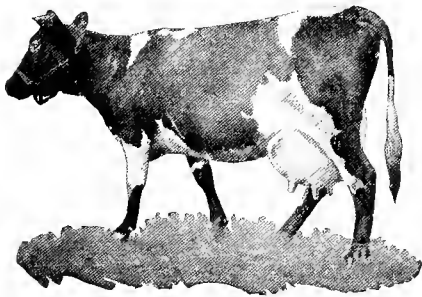
Occasionally a cow with very few "good points" turns out to be a good milk producer.

Occasionally a cow with about all the "good points" is a poor milk producer.

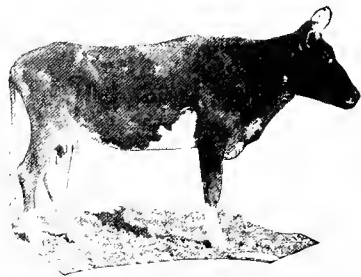
Most dairy cows have the "good points" described on the following pages; so in selecting dairy cows let's get as many of the "good points" as we can, but remember that after all, the milk and feed scales, the tester and a carefully kept record furnish the only **sure sign** for judging the worth of a cow.

If we already have or want to start a herd of "dual-purpose" cows like the cows on page 72, to furnish milk and maybe raise calves for beef, we can't get all the good dairy points shown on the following pages. Dual-purpose cattle are a combination of beef and milk and while many cows of the dual breeds are great milk producers, we can't expect them to be so lean and meatless as the strictly dairy breeds. (See dual breeds, page 72.)

FIRST, WALK AROUND THE COW, A FEW STEPS AWAY FROM HER, AND LOOK HER OVER.



A good dairy cow usually has a neat head and neck, her eye is bright, her middle or barrel is deep and roomy to hold lots of feed. She is wide across the hips and her udder is large.



If she has a dull eye, coarse head, thick neck, slim body, steep rump, little udder, is narrow across the hips and stands with front and hind legs close together, better not buy her.

WE CAN FIND OUT A LOT ABOUT A COW BY LOOKING AT HER HEAD

GOOD POINTS



Here's a good head; large, bright eyes, indicating health; face medium length free from flesh; broad nose, large nostrils that take in plenty of air, big mouth that goes with a good feeder.



Another good head; notice the large nostrils to furnish oxygen for the lungs; the strong jaw that can chew a lot of feed to make milk.



The ears, like the skin on the cow's body, should have a velvety feel. Most good cows have a yellow, waxy coating on the inside of the ears.

BAD POINTS



A bad head with dull eye, pointed nose, small nostril, small mouth and weak jaw; such a head indicates a weak constitution and is rarely found on a good cow.



A big, coarse, "steer" head on a cow indicates poor dairy qualities, although some high-yielding cows have big, rather coarse heads.



When a cow hangs her head and her eyes are dull and ears droopy, look out—she may have tuberculosis. Anyway she is not a good cow to buy or own.

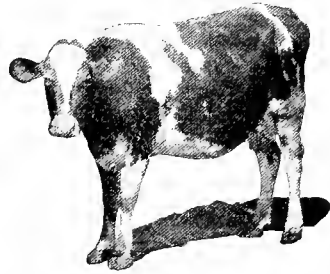
STAND IN FRONT OF THE COW, A FEW STEPS AWAY FROM HER, AND TAKE A LOOK AT HER FRONT END. IN THIS WAY WE GET ANOTHER LINE ON HER CONSTITUTION.

GOOD POINTS



We want the cow's legs like this one's, square under her and wide apart, making room for a good chest.

BAD POINTS



We don't want a cow that stands with front legs close together, indicating lack of chest and heart room.



This good cow, we can see from in front, is thick through the girth, has well sprung ribs, and big roomy barrel that will hold great quantities of feed.



This inferior cow is narrow through the girth, has flat ribs and small middle. Such a cow hasn't heart room or room for feed. She is a poor milk producer.

STEP TO ONE SIDE AND LOOK AT HER NECK.



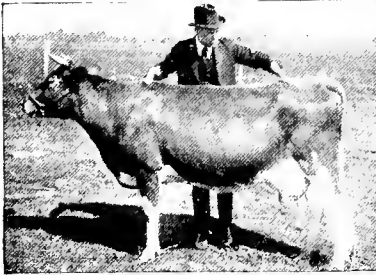
A good dairy cow's neck is usually neat, rather slim and curved down a bit on top. This cow has an exceptionally fine head and neck.



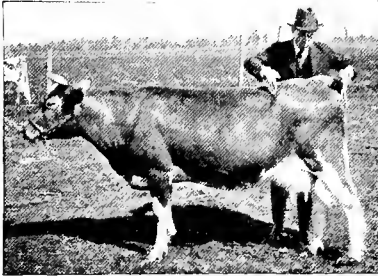
Don't select a cow having a coarse thick neck with a lot of extra skin or dewlap under the neck; she's apt to be a disappointment.

STEP BACK A FEW PACES AND TAKE A SIDE VIEW OF THE COW

GOOD POINTS



Her back should be straight from shoulders to root of tail and she should have good length of back to make room for her big middle.

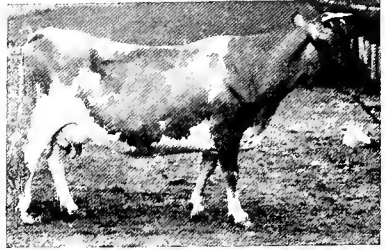


The top line of her rump should be straight when viewed from the side and long from hip bones to pin bones.



Two important things in a cow are a strong constitution and great capacity for feed. This good cow has both; note how deep she is down through the big barrel that will hold feed to make 70 pounds of milk a day.

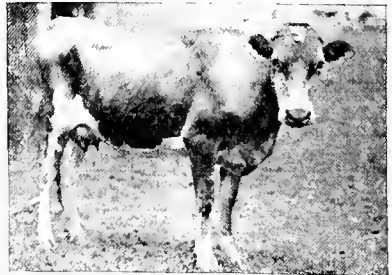
BAD POINTS



A good milk producer may have a low back but it indicates weakness. She had better have a straight back. Cows with big middles may sag a little in the back when they get old.

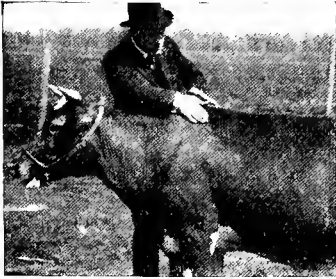


This short ugly, steep rump spoils the looks of the cow. Such cows usually have poorly shaped udders.



Don't select a cow with a small middle. This cow has a little "tucked up" middle showing that she is not a big eater, and her udder indicates that she is a poor milk producer.

ALWAYS TAKE A CLOSE LOOK AT THE COW

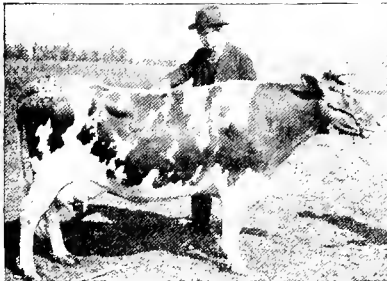


Some good dairy cows, especially when they are milking heavily, have shoulders that taper up to the withers on top.

A good cow when dry, or a heifer, may have round withers and still be a good milk producer. However, thick shoulders and withers may indicate a tendency to make meat instead of milk out of the feed.



We can't disqualify a cow if her withers are not sharp. This good cow is soon to freshen. She's round and smooth over the withers.



Run the hand over her back bone. Many good cows have prominent back bones with the sections or vertebra not closely joined. The loin should be level and wide.



Look down on her back and get a view of her thickness through the heart, note the spring of her ribs. The ribs must be well sprung to make a roomy middle.



The skin should be soft and pliable. Hard, tight skin indicates poor blood circulation or that the cow is out of condition.



A good cow's ribs are usually far enough apart so that a person can lay two or three fingers between them.

STAND BEHIND THE COW AND NOTE THE WIDTH AND SHAPE OF HER HINDQUARTERS



GOOD POINTS

This good Guernsey cow is wide across the hips.

BAD POINTS

Don't select a cow with narrow hips like this one has.



She is wide between pin bones.

Nor one narrow and pointed across pin bones.



This Holstein's thighs are wide apart, making room for a large udder.

The cow with thighs thick and close together has not room for a large udder.



This Jersey's hind legs stand wide with plenty of room for udder between the hocks.

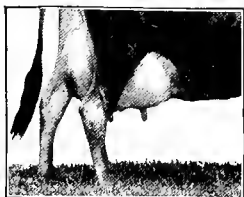
Hocks that stand close together take up room that should be given to the udder.



EXAMINE THOROUGHLY THE UDDER, TEATS AND MILK VEINS

Never buy a cow without first milking her to be sure that her udder is healthy and sound and every teat working.

GOOD POINTS



Good udder; large, smooth, hangs level, reaches well out in front and well up between thighs in the rear.



Good teats; right distance apart, large enough to be easily milked.



Should be large veins over the udder to carry a full supply of blood.



Milk veins in front of the udder should be large and prominent. The amount of milk depends on the blood going through these veins.

BAD POINTS



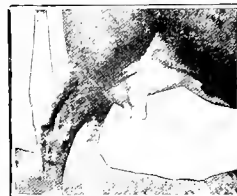
Low-hanging udder; gets bruised and dirty. A good cow may have it, but it's not the right kind.



A bad-shaped, pointed udder like this one won't hold much milk.

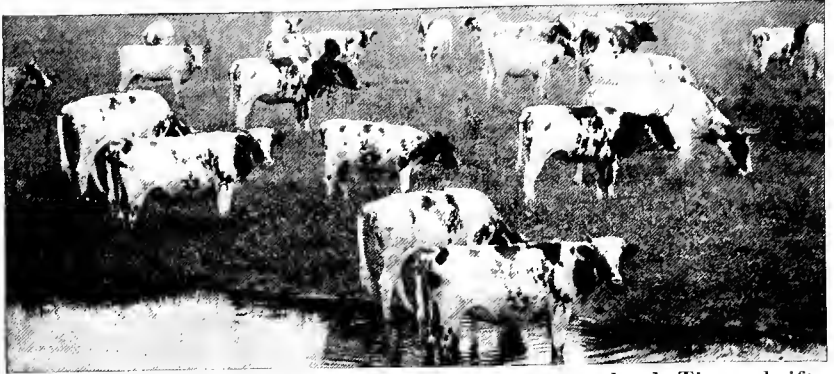


Teats so small we can't get hold of them are mighty hard to milk.



We don't want a cow with one or two big teats and the others small. We don't want a cow with an irregular shaped udder of any kind.

SELECTING DAIRY HEIFERS



One way to get cows is to buy heifers that have been bred. These thrifty Ayrshires are a good kind to buy. They will make good cows. Or we might buy heifer calves about weaning time and raise them for cows.



These Cuernsey heifers are about old enough to wean and should develop into fine cows. We would not go wrong buying them.

The safe way to select calves or heifers is to buy them from breeders who we know have good-producing, well-bred stock.

In selecting heifers to develop into cows, the same points should be observed as in selecting cows, but keep in mind that the well-fed heifer will be more plump than the milking cow and her udder will be smaller, yet a good judge can tell from her appearance how she will develop.

THE DANGERS OF BUYING COWS

Good cows can be bought, but don't forget that there are 50 or more common cows for sale for every good cow that is for sale.

A good dairyman usually doesn't sell his best cows nor heifers from his best cows.

Here are the cows that are apt to be for sale:

The old cow.

The tubercular cow (see page 73).

The cow that aborted (see page 73).

The irregular breeder.

The kicker.

The hard milker.

The poor producer.

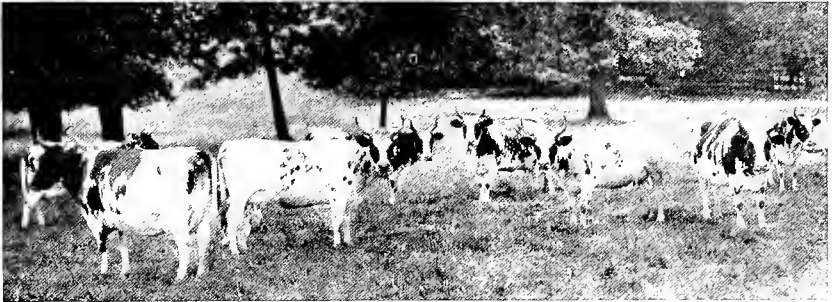
Here are seven good reasons why we should raise our own cows. Besides, we can raise good cows cheaper than we can buy them.

HAVE THE COWS ALL OF ONE BREED

When selecting cows to start a herd or to add to the herd, try to get them all of one breed. The herd will be better looking, the calves will be more uniform, we will think more of them, take better care of them and make more profit from a uniform herd than from a mixed lot.



It's pretty hard for anybody to take much interest in a bunch of cows with as many sizes, shapes and colors as has this herd.



A man is pretty cold-blooded and lifeless if he can't take interest in a herd like this one. These Ayrshire cows look alike, act alike and show good breeding.

Have One Breed in the Neighborhood

When a neighborhood gets interested in dairying and needs cows, it is good business for the neighborhood to send a reliable man to a community where the dairymen are working together and all have one breed of cattle, and buy from them well-bred, healthy cows or heifers. We can buy a car load in such a community and get them uniform and of good breeding. Such cattle make reliable foundation stock for the new dairy neighborhood.

There are communities and counties where practically all farmers have the same breed of cattle. This is good for the community and it's usually a good place to buy cows.

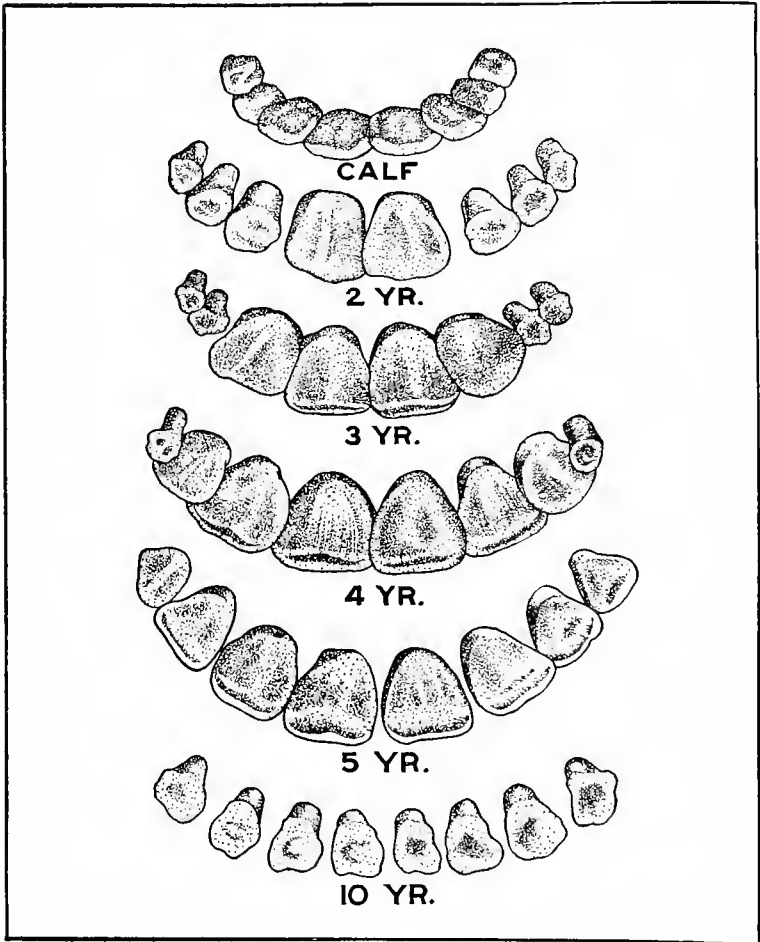
BREEDERS' ASSOCIATIONS

A neighborhood or county of the right kind of stockmen all having one breed of cattle can organize a breeders' association and put themselves on the map, and every member of the association will profit thereby in a way that would be impossible when working alone. (Read page 67.)

WE CAN TELL A COW'S AGE BY HER TEETH

The pictures below show the changes in the teeth from a calf to 10 years old.

Note that the heifer sheds two of her "milk teeth" when 2 years old and gets in their place two big new permanent teeth. When 3 years old she gets two more big teeth, and two more each year until at 5 years she has a "full mouth" or all large teeth. After 5 years the teeth gradually become smaller and more like pegs. The last set below are of a 10-year old cow.



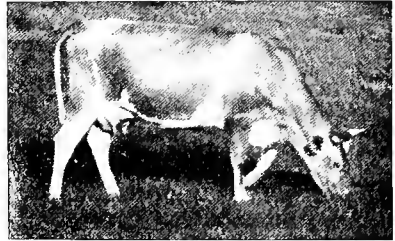
When buying a heifer or cow, better look at her teeth.

BIG, RUGGED COWS ARE BEST

In selecting cows and breeding for milk production **don't get cows that are too fine and neat.**

We want the cows to be good looking and show good breeding but small fine-boned stock is apt to be delicate and low in production.

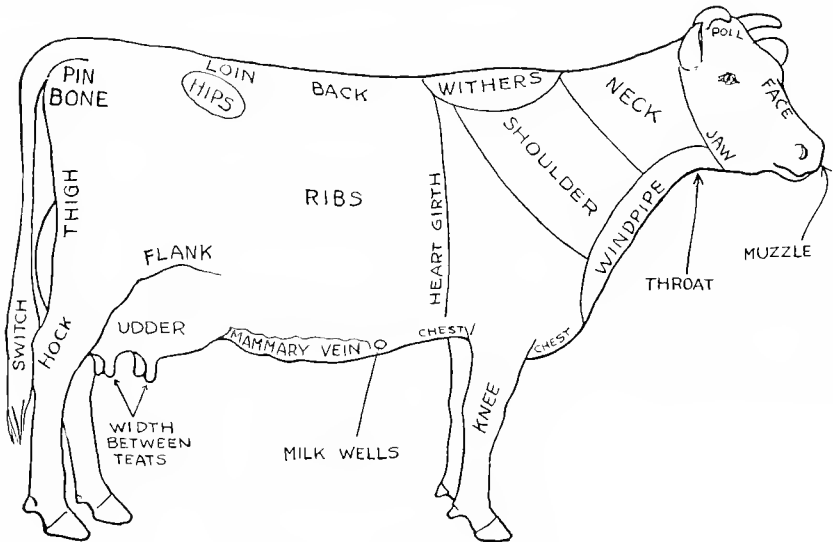
We don't want the cows coarse and beefy but we do want them strong and substantial, able to grind up a lot of feed and make it into milk.



Here are two beautiful, young pure-bred cows that are almost as fine and neat appearing as deer. We would like them a little better if they were somewhat more rugged. They will probably get stouter as they grow older.

THE PARTS OF A COW

We can look over the outline below and get fixed in our minds all the different parts of the cow.



THE SUREST WAY TO HAVE GOOD COWS IS TO RAISE THEM

Select our best cows to start with.

Weigh and test the milk to find which are the best cows. (See page 48.)

Use only high class sires. (See pages 63 and 64.)

Save the best heifer calves from the best cows.

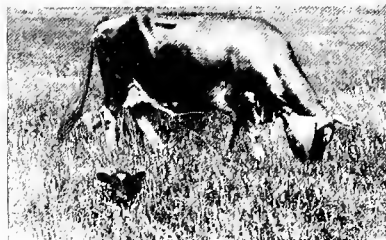
Raise and train the calves right.

When we do all this we are real dairymen and we can have a herd that we know all about and are proud of.

If the calf isn't good enough to raise for a cow, read page 62.

Let's start a few days before the calf is born and grow it to a good cow.

Here are two places for the calf to be born:



There is no better place for the calf to be born in the summer time than in a clean grassy lot, or field.



Another good place is a clean, well-bedded box stall that has been thoroughly disinfected.



Here is a bad place for the calf to arrive. In such a place the calf is almost sure to get infection that will make it sick, maybe kill it.

THE FIRST DAYS OF A GOOD CALF'S LIFE ARE MIGHTY IMPORTANT DAYS

Many a calf has struggled through the first part of its life suffering from scours and digestive troubles, losing a lot of time and growth and developing into a pot-bellied stunted little thing, because it had careless treatment its first days on earth.

Disinfect the navel cord with tincture of iodine, or other disinfectant, as soon as the calf is born, to prevent infection through the navel which causes scours and swelling of the joints. It is a good plan to disinfect the cord again in a few hours and dust with alum powder or powdered boric acid to dry the cord.



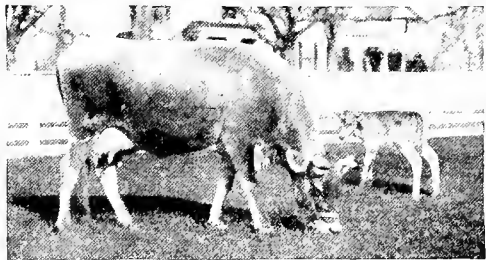
Disinfecting the navel.

Examine the teats. When the calf is a day old a good judge can tell much about its possibilities for making a good cow. If the teats are large and placed well apart, indicating udder development, the calf with good care will likely make a valuable cow if it is well bred. If there are "extra" teats that will be in the way of milking when the calf becomes a cow, we can clip them off and disinfect the spot when the calf is a day or so old.



Examining the teats.

If the cow is healthy it is usually best to leave a good calf with her about four days after it is born, although some dairymen take the calf away from its mother in from 24 to 48 hours. Better leave the calf with its mother about four days because it needs to take milk frequently the first few days, its suckling is good for the cow's udder, and the milk should not be used for human food for five days anyway.



Four days with its mother.

It may help to prevent milk fever if the cow is not milked out thoroughly for two or three days. The calf will usually take out enough milk if it sucks from each teat.

TEACHING THE CALF TO DRINK



When the calf is separated from its mother, put it in a clean, dry, sunny pen or stall. Do this in the morning and in the evening give its first feed from a bucket. The calf will be hungry and the right kind of a man will soon teach it to drink. It will learn to drink better if it is kept a wee bit hungry the first day or two. If it is given too much at one feed it will get scours.

(See page 74.)



Giving the calf its first feed from a bucket. Put about three pints of its mother's milk, fresh and warm, into a perfectly clean bucket and have the feeder's hands perfectly clean. Don't scare the calf; push it gently into a corner, stand to one side of it and place two fingers in its mouth; it will suck the fingers, then lower its nose to the milk. When it tastes the milk it will drink.

A man who can't teach a 5-day old, hungry calf to drink isn't making use of the brains that an ordinary man should have.

Better not give the calf more than three pints of milk the first feed.

When the calf learns to drink give it from 8 to 10 pounds of whole milk a day to start with, depending on its size. Increase the amount of milk as the calf grows.

Many good dairymen feed their calves three times a day the first three or four weeks, giving the feeds at periods equal time apart. This is fine for the calves if the milk is always fed at the right temperature.

On the busy farm it is not always convenient to warm the milk at noon; it is better to feed the calves only twice a day than to give them cold milk at noon.

Good calves can be raised by feeding them milk twice a day.

Don't feed calves the foam on milk that comes from the separator, it might bloat them or cause scours.

Feed the calves regularly. Don't feed at 6 one morning and 8 the next morning. *Irregularity in feeding causes scours.*

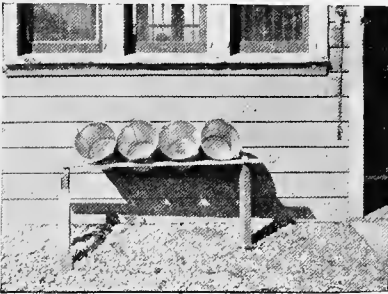
WE CAN'T MAKE A GOOD COW OUT OF A POORLY-FED, STUNTED CALF



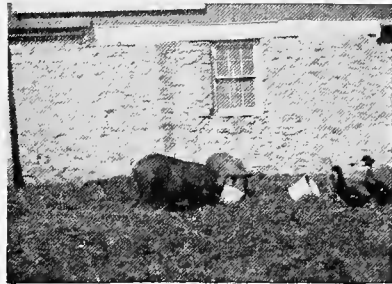
Arrange a little manger and give the calf some bright alfalfa or clover hay.



A swampy pen and damp shed will keep a calf from growing. Give it sunlight and a dry bed.



Wash, scald and sun the feed buckets—just as necessary in raising good calves as it is furnishing good milk for folks. (Read page 53.)



Feeding from "calf buckets" like these will make sorry, stinking, rough-haired little animals out of the best calves on earth.

CHANGING TO SKIM MILK

The calf will grow better if it gets whole milk until it is about 3 weeks old. Then begin to substitute skim milk fresh from the separator in place of part of the whole milk. Change the milk gradually until the calf is drinking all separated milk.

Big, vigorous calves can be changed to skim milk a week earlier than smaller ones.

By the time the calf is 5 weeks old it can be fed from 15 to 20 pounds of milk a day, if milk is plentiful.

Buttermilk or sour milk can be fed when the calf is from 6 weeks to 2 months old. Make the change gradually.

Never change suddenly from sweet to sour milk or from warm to cold milk. Sudden changes of feed and overfeeding cause scours.

Feeding milk at varying temperatures and from dirty buckets has made many a calf sick even after it was 6 weeks old.

Never allow a calf at any age to gorge itself with milk.

Remember, there is no better feed on earth for a calf at any age than skim milk, fresh and warm from the separator.

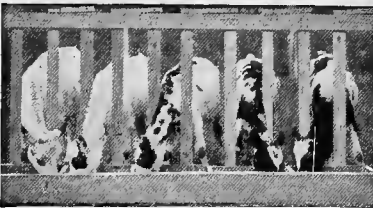
THE YOUNG CALF WILL EAT GRAIN, SILAGE AND HAY



When two or more calves are together, arrange stanchions to keep them apart while drinking milk and eating grain. They won't upset the buckets or rob each other.



Here's what happens when a bunch of calves are fed without stanchions. A waste of milk, time and patience, and the calves are losing growth.



Commence feeding grain when calves are about 2 weeks old. Feed the grain in boxes or a divided trough after they have finished drinking milk—this will keep them from sucking each other. Don't mix the grain with the milk, feed it dry.

Corn, bran and a little oil meal mixed together make good calf feed. At first the corn can be ground or cracked, then changed to whole corn.

Barley can be used in place of corn; also oats and other grains and meals can be added or substituted in the ration.

One-half pound of grain a day will help to keep a calf growing until it is 2 months old, then increase the grain to about one pound a day. When milk is not plentiful feed a little more grain.

Calves that are to be vealed can be fed more grain than calves being raised for cows. (See page 62.)

Silage can be fed to calves when they are 3 weeks or a month old. Feed only sound, clean silage, and better pick the pieces of cob and big butts of stalks out of it. Start feeding silage lightly and increase gradually. Feed some hay and dry grain with the silage.

WHEN WILL WE WEAN THE CALF?

To do a real good job of calf raising and make the heifer calves grow into big, strong cows that we will be proud of, milk should be fed until they are 6 months old, or better still until they are 8 months old.

Many calves are weaned much younger than 6 months, and if they are fed "substitutes" and carefully handled they do fairly well, but **it's a long ways better for the calf to have milk.** Besides there is no better use to make of skim milk than to feed it to well-bred calves.

WHAT ABOUT PASTURE?

Calves born in the fall and winter should have pasture the next summer. Calves born in the spring and summer had better be kept in the stable until they are 3 months old.

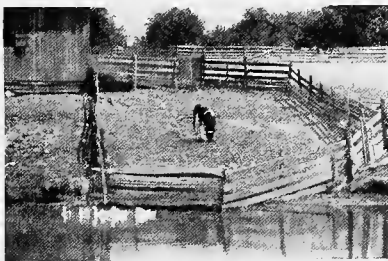


A calf pasture should have real grass in it and plenty of shade and water.



An old orchard or hog lot of bare ground and weeds isn't a calf pasture—it's a calf penitentiary.

Heat and flies are things that keep the young calf from growing in summer.



This little calf is out in a bare lot blistering and suffering from sun and flies.



Put the young calf in a stall in fly time. The gunny sack curtain will brush off the flies.

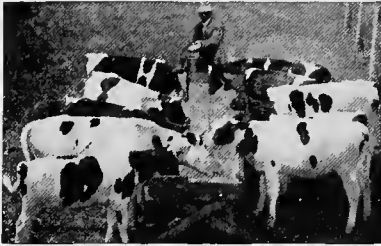
AFTER THE CALF IS WEANED NEVER LET IT STOP GROWING

Many good calves have been well fed until they were weaned and then turned out, neglected and stunted. Wean the calf gradually. Don't feed it a big mess of milk every day and then stop all at once.

MAKING GOOD COWS OUT OF GOOD HEIFERS



In the summer give the heifers good pasture with plenty of water and shade. These Guernseys are enjoying good grass and growing into high-class cows.



Put a trough in the pasture like these Holstein heifers have, and give a small grain feed each day the first summer.

Heifers over 8 months old can be wintered on good silage and alfalfa or clover hay; younger heifers should have some grain.



In winter provide good shelter and feeding yard such as these Guernseys have. Feed alfalfa, clover or pea hay, good silage and some grain.

TIME TO BREED HEIFERS

A well fed, thrifty heifer can be bred when from 14 to 20 months old. Early maturing breeds like Jerseys can be bred when 1 year old—better wait two more months. Later maturing breeds like Holsteins should not be bred so young as Jerseys.



Here is the way well bred, well fed 2-year old Holsteins should look.



These 2-year old Milking Shorthorn heifers have been poorly cared for. They are small and will produce weak calves and be poor milkers.

DEHORN THE CALF



The time to dehorn cows is before they are 1 week old. Clip the hair from the little bump or horn "button" where the horn starts and rub the button with a stick of caustic potash until a spot about the size of a dime is red but not bleeding. Put the potash only on the horn button. Don't put too much on, it may spread and injure the calf. Don't turn the calf out in the rain immediately after putting on the potash, the rain will wash the potash into the calf's eyes. The caustic potash can be bought at a drug store. Don't handle it with the bare hands. Keep it in a tightly corked bottle.

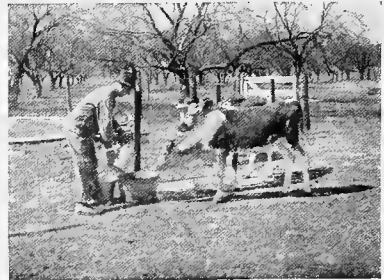
TEACH THE CALF TO LEAD

The time spent teaching this Jersey heifer to lead while she is young and easily held will be repaid many times when she becomes a cow. It's a wonderful satisfaction to have a cow that can be haltered and led quietly.



PROVIDE WATER AND SALT

Provide water and salt for the calves when they are 3 or 4 days old and keep a supply always before them. Calves need water even when they are getting plenty of milk and there is no better way to "salt" them than to have the salt, like the water, where they can get it when they want it.



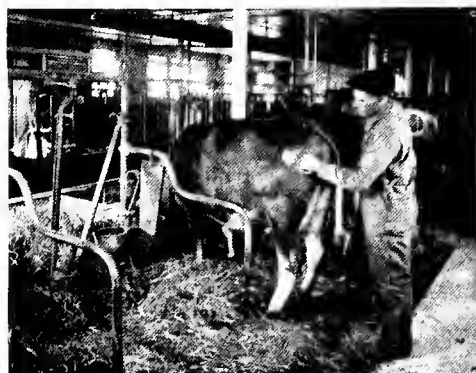
THE HEIFER'S FIRST CALF

Two or three months before the heifer freshens, she should begin getting some training. It will make her more easily handled, after she freshens, if we teach her to come into the stable and stand in a stall with the cows.



These Ayrshire heifers walk into their stalls and behave like old cows.

Handle the heifer's udder and brush her so that everything will not be new to her when she becomes a cow.



This Guernsey heifer, soon to freshen, is getting some valuable lessons.

Keep a record of breeding dates so we will know when to expect the little calf. Don't depend on memory, *keep a regular record.* There are breeders calendars and special record books that are very convenient and worth having. You can keep a record without them, *but be sure to keep it.*

A healthy, normal cow will freshen from 280 to 290 days after being bred.

Provide a grassy lot or stall like that shown on page 24 for the arrival of the little calf.

Be quiet and patient when milking and handling the heifer.

The first week after she is fresh we can make her into a gentle, reliable cow or we can mistreat her and teach her vicious tricks that will stay with her as long as she lives.

Within a few days after the heifer is fresh, if she has been trained right, she should take her place peacefully with the cows, and her calf should be happy in its clean stall, drinking milk from a bucket.

LET'S GIVE OUR COWS A SQUARE DEAL

Give them the right kind and plenty of feed. Give them the right kind of care.

A dairy cow should go dry from six weeks to two months before freshening.

Usually there is no trouble in drying off a cow.

Always milk her clean when drying her; if she is a persistent milker commence drying her by first skipping one milking, then skipping a day, then two days, **but always milk her dry.**

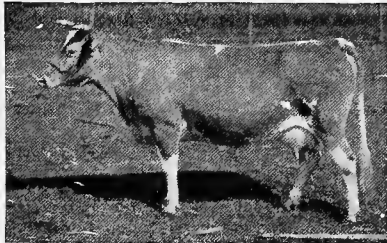
Continue this until only clear water comes from the teats and the cow will not likely have milk fever.

A heifer never has milk fever, neither is the cow apt to if she is thoroughly dried off.

If the cow can't be dried off, milk her right up to the day she freshens.

Be sure and do not let a heifer go dry the first time until about six weeks before the second freshening. If we let her go dry too soon the first time, she will always try to go dry early and it will greatly lessen her milk production.

Have the cow in good condition when she freshens.



This Guernsey cow and this Ayrshire cow, both soon to freshen, are not any too fat.

It is a good thing to have the mature milk cow in condition that might be termed "fat" when the calf arrives. The good cow will soon turn the fat into milk and butter after she freshens.

Feed very lightly for several days after calving, give laxative feed, like bran and ground oats mixed with a little oil meal.

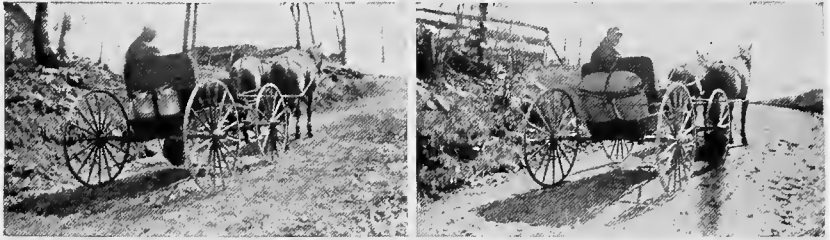
Take the chill off the water that the fresh cow drinks.

If the cow retains the afterbirth, "fails to clean" within 24 hours, get a competent veterinarian to remove the afterbirth and prescribe treatment. (See page 73.)

Keep the fresh cow in a roomy stall or pasture by herself for a few days even after the calf is separated from her. Read pages 24 to 30 for caring for calf.

LET'S GROW ALL THE FEED FOR OUR COWS THAT WE CAN

Remember, all feeds must be grown on somebody's farm. We may be able to grow our feeds cheaper than anybody can grow them for us.



There are dairymen who keep themselves poor hauling milk, cream or butter to market, and then hauling back home feed that costs about as much as the milk and cream brings. This is bad business.

Let's use home-grown feeds.

There is nothing better than pasture for cows in summer.

Grasses and pasture crops can be grown in every country. No country is complete without pastures and no pasture is complete without cows. Let's make our pastures better.

There is nothing better than silage and legume hay for cows in winter.

Silos can be built and silage crops grown wherever people and cows live, and there are one or more legumes that will grow and make hay in every country. We can't do the best cow feeding; we can't do the best farming without silos and legumes. We can have both.

There are thousands of dairymen who, if they would spend a part of the money they are paying for feeds, in tile draining and liming their fields and improving their pastures, could grow big crops of grass, alfalfa, clover, soy beans, cow peas and other feeds that would take the place of much of the feeds they are now buying. Besides they would be doing better farming and making more profit.

There are high-class dairy feeds and meals on the market that can be purchased and fed at a profit. There are times when practically all dairymen can and should buy feeds. There are times when it is good business to sell part of the home-grown crops and buy feeds for the cows.

But nobody ever got very far in dairying by buying most of the feed.

READ THE FOLLOWING PAGES.

WHAT SHALL WE FEED THE COW?

Every dairyman must work out his own feed ration, using first the feeds he can grow; buying only that part of the feed that he can't grow, and buying it in the best and cheapest form.

GRASS FOR SUMMER



In spring, summer and early fall nothing beats good pasture for cow feed.

Most pastures do not produce one-half of what they should. Lime, fertilizer, a coat of manure and re-seeding will change a lot of pastures from desolate stretches of land to bountiful feeding grounds.

Thousands of dairymen turn their cows out on poor pasture and buy feed for them all summer. Wouldn't it be wiser to spend some of that money to re-seed and build up the pasture so that cows could get their own feed?



It is a crime to expect these Jerseys to make milk and dig a living from a chewed-out pasture like this.

In many parts of the country, farmers would be better off if more of the land was made into real pasture and less of it cultivated.



The whole farm under cultivation and no pasture. Many a farmer plows 60 acres to put into cultivated crops, only half tends it, and grows about what he should on 30 acres. He would be better off, and so would his cows had he plowed less and let the rest grow grass so the cows could feed themselves.

FEEDING GRAIN ON PASTURE

Good pasture supplies about all the cow needs.

Cows fed grain while on good pasture will give about enough more milk as result of the grain feed to pay for the grain. However, many dairymen feed grain to their cows while on pasture—from 3 to 10 pounds per day to each cow depending on the pasture, the cow and the amount of milk she gives.

Cows fed grain on pasture keep in better flesh and are apt to do a little better when the pasture season is over.

SILAGE AND SOILING CROPS FOR SUMMER FEED

In dry countries and "short grass" countries and in any country where pastures get dry and short during the grazing season, there is nothing equal to the silo to furnish succulent feed to take the place of pasture and, also, there is nothing equal to the silo to furnish feed for winter.



A silo is almost as necessary in dairying as the cows themselves. If we can't have a silo and a complete barn at the same time, then build the silo first.

"Soiling," or growing crops to furnish green feed for cows in summer, is practiced by some dairymen. Such crops as oats and peas, clover, sweet corn, field corn, millet, and sorghum are grown and cut daily and fed to the cows. This system is good for the cows but means hard work for the man. It is not always convenient or agreeable on a busy farm to cut and carry a lot of green feed after the man has worked hard all day. It may be O. K. when there is a special man for the job.



When the pasture is dried up, green corn hauled out to the cows daily will keep up the milk supply.



Feeding alfalfa hay to cows to take the place of pasture burned out by drouth.

The extra summer feed to help out the pasture had better be in the silo, where it is handy, easy to feed and cheaper than when supplied in any other way.

FEED FOR WINTER

Silage and legume hay should furnish most of the feed for the cow in winter.



Good corn silage and alfalfa hay make a pretty complete cow feed.

Attention, every dairyman, where corn and alfalfa will grow:

Do you know that if we had corn silage made from well-matured corn with big ears on it and alfalfa hay cut before it gets woody and loses the leaves, and give our cows all they will eat of these two feeds, we have a good cow ration with very little else added?

Do you know that half the cows in the United States, if they were fed in winter all the corn silage, made from matured, big-eared corn, and all the alfalfa hay that they would eat, would give nearly twice as much milk as they now give with the feed they are getting?

Corn will not grow in some places but sunflowers, sorghum, feterita, milo, cane, millet and Sudan grass will grow and furnish silage.



Sunflowers promise to make a great silage crop.

Feterita, milo or sorghum makes silage where it's too dry for corn.

Alfalfa does not grow in some places until conditions are made right for it, but there are legumes that will grow in every section.



ALSIKE CLOVER
Early-cut, well cured, red or alsike clover is a close second to alfalfa.

COW PEAS
Cow pea or soy bean hay furnishes high-class protein roughage.

LESPEDEZA
The South has a wealth in lespedeza, almost equal to alfalfa.

FEED A BALANCED RATION

There is no satisfactory cow ration without legume roughage of some kind.

The expert dairyman doesn't need anyone to tell him how to mix rations for his cows.

These general rules are to help the beginner get started; then he should study feeds and watch his cows until he knows more about feeding them than anyone else does.



This great big, late-maturing corn that so many people grow for silage seldom gets ears on it, is full of water, hard to handle and makes sour silage with little feeding value.

A cow is made to handle bulky feed.

Give her all the roughage (silage and hay) that she will eat up clean in winter.

Give her from 30 to 50 pounds of silage daily, depending on her size and the amount of milk she gives, and give her all the alfalfa, clover or other good hay she will eat up clean.

When feeding common silage made from immature corn, or corn with small or no ears, and the roughage is of only fair quality, give her about one pound of grain daily for each three pounds of milk she produces.

A better rule for feeding grain is to feed one pound of grain daily for each pound of butter fat produced per week.

When the silage is made of well-eared, mature corn and the roughage is of fine quality alfalfa or clover and the cow is given all she will eat of the silage and hay, *the grain ration can be lessened.*

The kind and amount of grain to feed depends on the amount of grain in the silage, the kind grown on the farm and the kind that can be bought.

Where corn is grown, **corn meal or corn and cob meal**, mixed with protein feed like cottonseed meal, oil meal or bran, makes a good ration to feed with silage.

Ground barley, ground oats or cottonseed hulls, mixed with cottonseed meal, oil meal or other protein feed, makes a splendid grain ration to go with silage.

There are various commercial protein feeds that can be substituted, one for the other, depending on location and price—cottonseed meal, oil meal, gluten feeds, bran, cocoanut meal and peanut meal.

There are also high-grade, ready-mixed commercial dairy feeds.

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HAVE THE BARN IN THE RIGHT PLACE

Every barn should be located so water will drain away from it, then the yard is more easily kept dry and the barn more easily kept clean.



This barn is well located, the yard sloping from the building on all sides.

SIZE OF BARN

Have it large enough to stable the cows, and it may be best to keep the young calves in the same barn so they will be convenient to feed. Have extra stalls to use in training heifers. (Read page 32.)

Have mow room to hold enough hay for the feeding season and feed bins to hold a supply of grain.

We want the barns large enough to house the herd without crowding, yet we don't want a roof over a lot of space we don't need or can't use.

SIZE OF SILO

This table shows the size of silo to furnish silage six months at rate of 40 pounds a day to each cow.

No. of Cows	Pounds Required Daily	Size of Silo Needed		
		Diameter, Feet	Height, Feet	Capacity, Tons
6	240	9	20	22
9	360	10	21	31
13	520	10	30	47
15	600	12	26	55
20	800	12	32	71
25	1000	12	38	94
30	1200	11	34	109
35	1400	11	38	128
40	1600	16	34	143
45	1800	16	38	167
50	2000	16	40	180

LET US REPEAT: We don't need an expensive or elaborate cow barn in order to have it comfortable, clean and convenient.

We may already have a good barn.

We may have a barn that with a little fixing would be a good one.

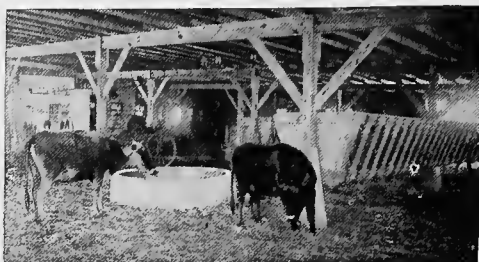
Disinfect the barn thoroughly at regular intervals. Use some of the commercial stock dips for disinfecting.

It's a good plan to have a thorough "clean-up" once a week and then keep clean between times.

COWS NEED EXERCISE

Don't keep the cows tied up all the time. Turn them out in the yard for awhile, if it is not storming, or turn them loose in a shed or covered yard.

Some good dairymen allow the cows to run loose in a covered yard or large barn all the time, except when being milked or fed grain. This is a good plan when the yard or barn is sheltered, warm and clean.



This covered yard is a fine place for the cows to exercise and drink. On pleasant days they should go out in the sun for awhile.

GIVE THE COWS WATER

The cow's body is 70 per cent and her milk is 87 per cent water.

What one thing does she need more than water?

A big, heavy-milking cow should drink from 8 to 15 gallons of water a day, depending largely upon the kind of feed she eats.



A cow won't drink half enough if she has to suck water out of a hole in the ice. It would take about all her feed to warm enough ice water for her.



These pools are apt to get a green scum over them in summer. This scum is a great breeding place for disease germs and may give the milk a bad taste.



It pays to provide clean drinking places and clean water. Look again at the per cent of water in the cow's body and milk.

Do you think she should get along on one drink a day?

GIVE THE COW A CHANCE

Many a cow is a poor milk producer because she gets abuse and not enough to eat.

It take a certain amount of feed to keep a cow living and she will use feed, first to live on and then, if there is any extra, she will make milk of it, if she's a good dairy cow.

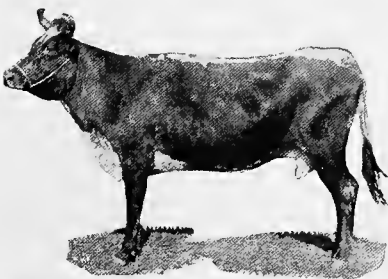
This poor cow with a barn yard full of snow and the thermometer at zero isn't making milk, she's too husy trying to keep warm.



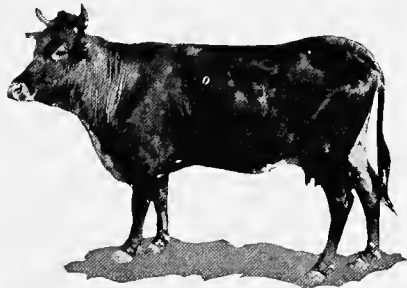
A cow that is exposed to storms, or kept standing in a cold draft in the stable in winter, or forced to drink ice water will use her feed to keep warm.

HERE'S WHAT FEED AND GOOD CARE WILL DO

Below are two scrub "piney woods" cows that Mr. Hugh G. Van Pelt, editor of Dairy Farmer, selected in Arkansas for the Iowa Experiment Station for a test to show how good feeding and good sires will improve common herds. They were small, scrubby, with poor udder development. See what they did with good care.



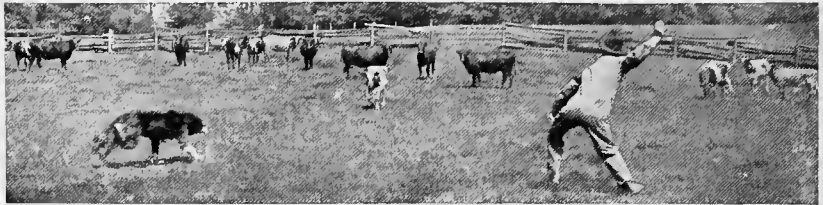
This scrub cow that probably in her old home gave 2,000 pounds or less milk a year, gave 4,975 pounds of milk and 253 pounds of butter fat at the Iowa Experiment Station when she was well fed.



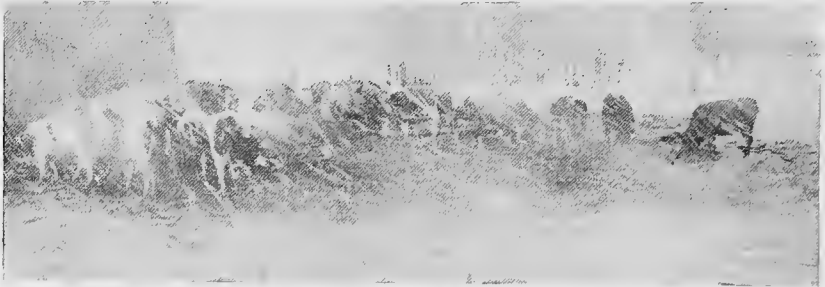
This scrub cow, when she got plenty to eat, gave 4,916 pounds of milk and 205 pounds of butter fat in one year, probably *three times as much as she gave when she lived under scrub treatment.*

One-half the cows in this country would almost double their milk production if they only got enough to eat.

HERE'S WHAT WILL TAKE THE PROFIT OUT OF THE DAIRY BUSINESS



Let the dog bring the cows in on the run; throw rocks at them as they go by. *There's no surer way to cut down the milk yield.*



Another sure way to make dairying a losing game is to leave the cows out to browse fodder in a blizzard.



Or let them wait outside all afternoon in a cold rain—it won't take long to do the milking in the evening.



The man who is responsible for his wife's having to milk this cow out by the straw-stack all winter, should be arrested for wife beating and cruelty to animals.



This man with his strong arm and mean disposition ought to be a lion tamer. He won't get much more milk from the cow than he would from a lion.

TEST EVERY COW

We can't tell for sure whether or not a cow is worth having unless we know how much milk she gives, how much butter fat there is in her milk, and how much feed she eats.

The man isn't living who can "guess" this correctly.

It's easy to find out about a cow.

First: Weigh the milk. A good dairyman will weigh the milk of each cow at each milking, and keep a record on a record sheet tacked up in the barn in the most convenient place.

Some folks weigh each cow's milk only once a week and estimate how much she is giving. This is better than not weighing it at all, but not so reliable as to know what the cow is giving each day.

Second: Test the milk with a Babcock tester at least once a month to find how much butter fat there is in it.

If we can't have a testing association in the neighborhood (see next page) we can have a Babcock tester of our own and test the milk ourselves.

Third: Weigh each cow's feed—grain, silage and hay—keep a record so we know just what each cow is eating.



Many careful dairymen weigh each cow's feed separately.



A bushel of good corn silage weighs from 35 to 40 pounds.



Weigh the hay often enough to estimate amount fed each cow.

It is not necessary to weigh the feed every day but it should be weighed whenever a change is made so we can feed according to the amount of milk, and so we can figure the worth of the feed.

When we know how much milk and butter fat a cow produces and how much feed she eats, a little arithmetic will tell us whether she's a money maker or a money loser.

DOES COW TESTING PAY?

Does it pay to keep books in a bank or hardware store?

One question is just as wise as the other.

The day is coming when dairymen will no more think of keeping cows without keeping records than a banker will think of loaning money and trusting to his memory and luck to collect interest.

Here are five advantages of cow testing, and there are a lot more:

1. We'll take better care of the cows.

Many a man, when he began testing his cows also began taking better care of them and surprised himself with how good his cows were.

2. We'll find out which cows are paying a profit.

There are thousands of herds where part of the cows are profitable cows and the rest "boarders," eating up the profit.

3. Our good cows will be worth more when we know how good they are.

A good cow will bring \$50 more if we can show her record when we want to sell her.

4. The calves will be worth more.

A wise man will give \$100 or more for a good calf from a good cow with a good record; he'll give \$35 or less for a good calf from a cow with no record.

5. We can improve our herds.

When we know by actual weights and figures that we have high-producing cows, we'd be chumps if we didn't keep the heifers from those cows. *The best way to judge the value of a young heifer or bull is by the records of its ancestors. The way to tell the breeding value of a mature cow or bull is by the records of its offspring. Without records we can't make much improvement.*

COW TESTING ASSOCIATIONS

If we have a dairy neighborhood and haven't a cow testing association there must be something wrong.

There are thousands of cow testing associations working that have made thousands of dollars for dairymen with but little cost. All that's needed are 26 progressive fair-minded dairymen and a reliable young man or woman for tester and to have the tester spend one day a month with each herd. He's worth five times his salary to any dairy neighborhood.

Mr. J. M. Ragsdale of Missouri tried to sell this Jersey cow for \$75, says Hoard's Dairyman. Nobody wanted her. He put her in a cow testing association and she broke the state cow testing record by producing 527 pounds of butter fat after the first four months of her milking season were over, and she cleared \$267.39 above the cost of her feed. He's been offered \$175 for her but she's not for sale.



One of the best cows in Missouri, discovered by a test association.

We can have a test association if we and our neighbors are made of the right stuff.

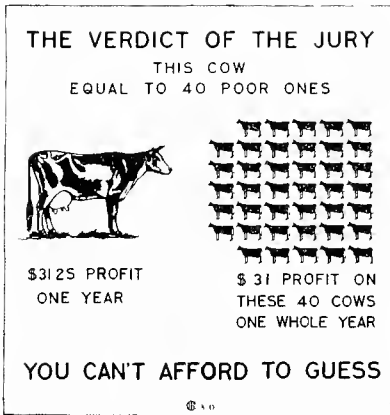


Chart 1

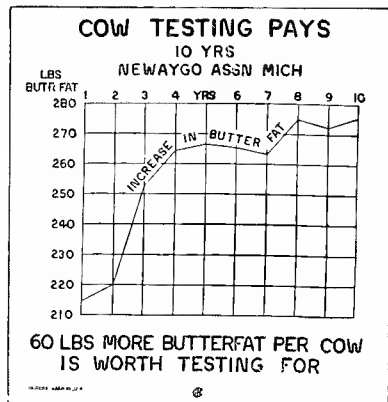


Chart 2

Chart No. 1 shows what the Illinois Experiment Station, a few years ago, found by testing—that one cow made more profit in a year than the other 10 cows combined. Chart No. 2 shows how the yield of butter fat per cow went up from 215 to 275 in the Newaygo Association in Michigan.

Does cow testing pay?

You answer.

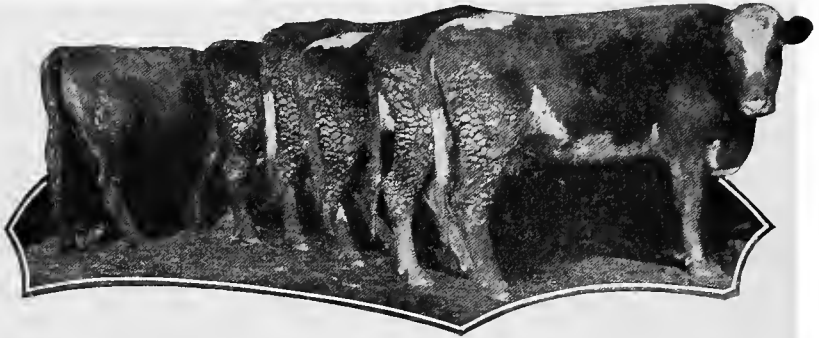
KEEP THE MILK CLEAN

We can't have good milk, cream or butter unless the milk is kept *clean* from the instant it comes from the cow.

The thing that spoils more milk, cream and butter than anything else is **dirt**.

Rank, bitter, bad-tasting milk, cream or butter is caused by dirt getting into it.

There are 100 ways for dirt to get into milk.



When a cow's hind legs and thighs are plastered with manure there is no chance to get clean milk; the milk will smell like manure and taste like manure; chunks of manure will drop into the milk and dissolve and all the straining in the world won't take out the taste.

We can strain straw, bedding and solid chunks of manure out of the milk, but 85 per cent of fresh manure dissolves in milk and is not strained out.

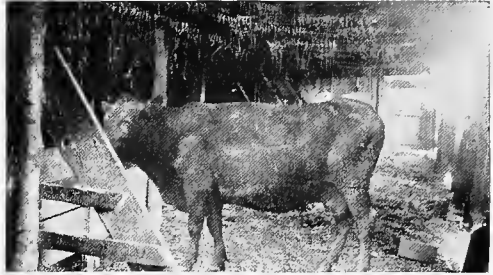
If you are a careless dairyman and think that your milk is all right after you have "strained" the filth out of it let us ask you a question: **Would you like to drink coffee or eat soup after you had strained cow manure, straw and shavings out of it?**



If the cows have to wade around in a barn yard like this until their legs, udders and teats are smeared with manure we will have dirty milk, no matter how clean the barn is on the inside.

KEEP THE MILK CLEAN

Here's a dark, foggy barn with a supply of cob webs, dust, hay seeds and germs, ready to pollute every pint of milk produced in it.



Here's a milker who will spoil all the milk, even if the yard, the barn and the cows are clean:



He's been hauling manure all day; his coat, overalls, shoes, hat and hands are dirtied and stunk up.



Now he's doing the evening chores, covering himself with haysced and dust.



Adding more dirt and stink and bacteria to hands and sleeves, dipping swill for the pigs.



Now right to the barn to milk without changing or brushing clothes, or washing hands.

This kind of a milker will make all the milk on the farm sour quickly, have a rotten taste, and make rank, bitter butter.

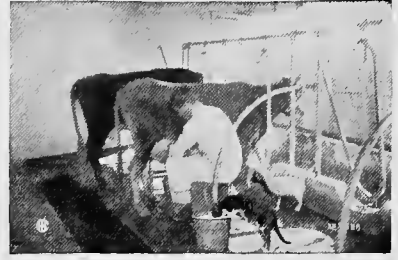
BE REGULAR IN MILKING

Have a set time to do the milking and stick to it. We can't expect our cows to do their best if we milk early one day and late the next. Try to divide the day and night so the number of hours between milkings will be about the same.

KEEP THE MILK CLEAN



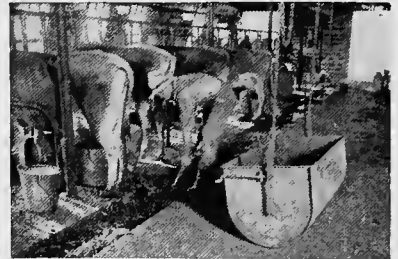
Dipping the fingers into the milk while milking, is a filthy habit that makes filthy milk.



Cats are O. K. to keep rats and mice away but we don't need cats to help with the milking.



Don't move the hay in the barn while milking. It fills the air with dust and the dust is full of bacteria which will get into the milk.



If we milk while manure is being stirred up or immediately after the stable is cleaned, the milk will absorb odor from the manure.



Milk kept in cellars and caves is apt to get tainted, unless the cellar or cave is kept very clean, well ventilated and free from bad odors.

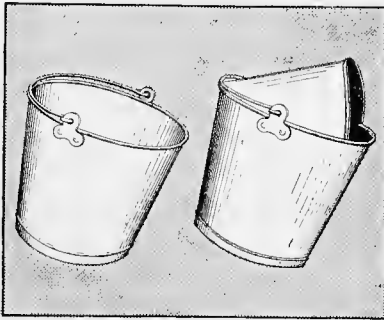


Don't keep the milk or cream in a musty cellar or near onions, cabbage or decayed vegetables—the milk will get a bad taste.

The cow may eat something that will give the milk a bad flavor.

Garlic, cabbage, turnips and sometimes sour silage will give the milk a bad flavor. Garlic is the worst. There is not much danger from eating vegetables like cabbage or turnips unless they are fed in large quantities. Good silage will not spoil the milk.

HAVE RIGHT KIND OF VESSELS—KEEP THEM CLEAN



Wrong kind—Right kind

Never use dairy vessels or utensils that have rough seams, joints, or cracks in them. Milk will get into the rough places and sour and cake and decay and inoculate all the milk with millions of bacteria that will sour the milk and spoil it.

If we can't get utensils with smooth seams, take them to a tinsmith and have him solder every seam and joint smooth.

The open-top milk pail is a dirt catcher.

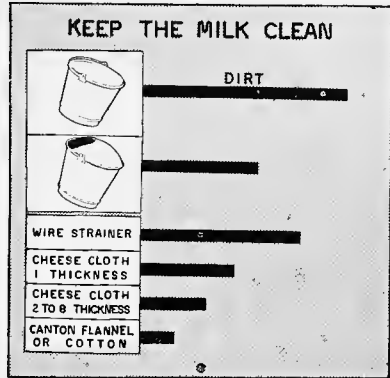
Wash the Dairy Utensils Clean

Don't let the pails or utensils lie around with milk on them. Wash them while the milk is fresh.

First: Rinse them with luke-warm or cold water.

Second: After the vessels have been rinsed in luke-warm or cold water wash them thoroughly with hot water and washing soda or soap.

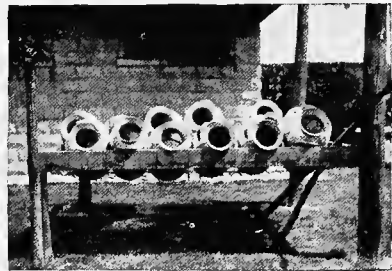
Third: After they have been thoroughly washed, rinse with hot water, then steam or scald them and let them dry without wiping with towels or rags.



The black lines show the amount of dirt in milk when different kinds of pails and strainers are used.



Wash every vessel inside and out. A brush is better than a rag.



The sun is a great purifier. Put the milk utensils in the sun.

Wash the brush or rag thoroughly and put it in the sun between times of using.

CLEAN COWS, CLEAN STABLES, CLEAN MILK



A clean yard, so the cows can walk with clean legs into a clean barn.



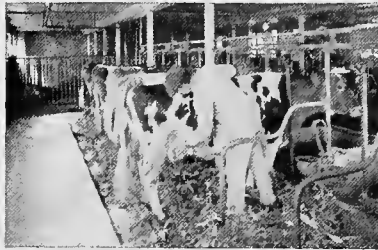
A clean well-lighted barn, made so it can be washed out.



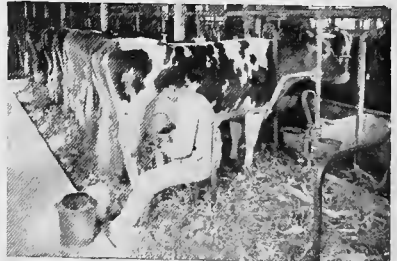
Clipping the hair from the flanks, thighs, and udders.



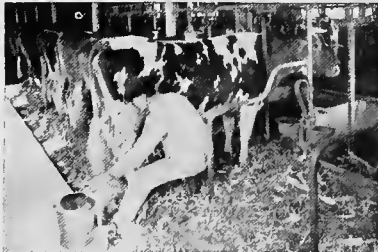
Brush clean the hind legs; flanks and around the udders.



Wash and dry the udder if dirt gets on it. *Always wipe the udder with damp cloth before milking.*



Discard the first stream of milk from each teat; it has bacteria in it that will make the milk sour.



Use a small-topped pail to keep out particles of dust or dirt.



As soon as the milk is weighed hustle it to the milk house.

HAVE A GOOD MILK HOUSE

We can't have good milk or cream unless we have a good place to keep it.

The kind of milk house depends on the number of cows and how we market the milk or cream.

The milk or dairy house should be:

Large enough to have plenty of room.

Light enough to see to work and keep clean.

Of material that can be scrubbed and scalded.

Supplied with plenty of water.

Equipped with drain for waste water.

Handy to but separated from the barn.

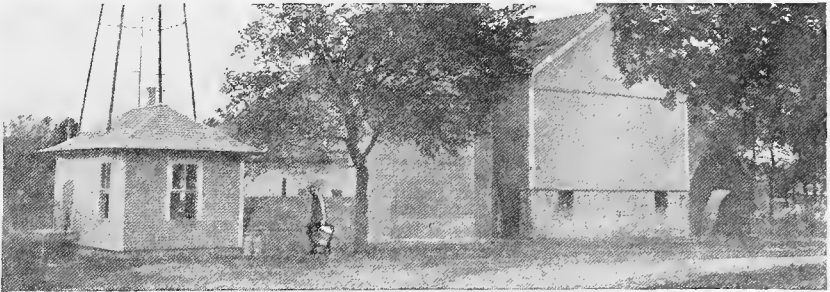
On the side of the barn away from odors.

On higher ground than the barn.

Away from manure piles and hogs.

Provided with heat in cold weather.

It is better, especially in large dairies, to have arrangement in the milk house for steam and scalding water for cleaning utensils.



This milk house is about the right distance from the barn, on higher ground, away from manure piles and hog pens.

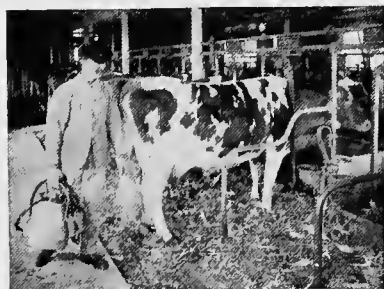
If we can't have a regular dairy house, the milk or cream should be stored in a clean, light, well-ventilated place, free from odors.

An ordinary cellar where vegetables are stored is not a good place to keep milk or cream. (Read page 52.)

MILKING MACHINES



The milking machine, when properly cared for, is practical.



Be careful, don't drop the teat cups in the dirt on the floor.



Use hot water, washing powder and a big crock of a sterilizing solution to keep the milker clean.

It is the judgment of many dairymen that a milking machine is not needed unless there are 20 or more cows to milk every day.

The milking machine must be kept absolutely clean or it is apt to spoil every drop of milk, just as dirty-hand milking does.

When the machine is kept clean, the milk is better than when milked by hand, as particles of dirt and dust are kept out of the milk by the machine.

Just drawing water through the machine does not get rid of the bacteria in it.

The most careful dairymen thoroughly wash, seald and sterilize the machine after every milking. Then the machine is absolutely safe. Read page 53, cleaning utensils.

REMEMBER THESE THINGS

All milk that is to be separated should be separated immediately after milking, while the milk is warm, then the separator does better work and we have the skim milk fresh and warm for the calves and pigs. (See page 60.)

Milk or cream that is to be kept should be cooled the first possible instant after it comes from the cow.

Bacteria make milk and cream sour and spoil.

Bacteria won't work in cold milk.

Bacteria multiply by the millions in warm milk.

Don't let the milk set around the stable an hour or two before it is taken to the milk house.

Milk fresh from the cow has a temperature of about 90 degrees F. and should be cooled down to 50 degrees F. or lower to make it keep.

Ice is the best cooler when it can be had.



Running water is next to ice as a cooler. Running water should be kept in the shade and under ground as much as possible to keep the temperature low.

If we can't have running water to cool the milk or cream, we should change the water as it takes up the heat from the milk, keeping a fresh, cool supply around the milk or cream.

Fresh cream should be cooled before pouring it into the can with cold cream. Stirring the cream hastens cooling.



A thermometer like this is needed where we are producing milk or cream.

THE WAY WE SELL OUR DAIRY PRODUCTS DEPENDS ON OUR BEST MARKET

The best way to sell the product from many dairies, the best way to sell the product from the cows on thousands of farms, is to sell the cream or butter fat and use the skim milk on the farm where it is needed, where it is worth the most.



This good cream separator pays dividends 730 times a year.

There is a market for whole milk.

The market for whole milk is limited to the country around towns and cities and to where milk can be delivered quickly by shipping.



People in towns and cities must have whole milk and someone must supply them.

Condensed milk, powdered milk and cheese are useful and needed foods, and the factories making them should be kept going.

The farms where the whole milk is sold would be better off if part of the milk was separated and the skim milk used to raise calves and pigs and chickens.

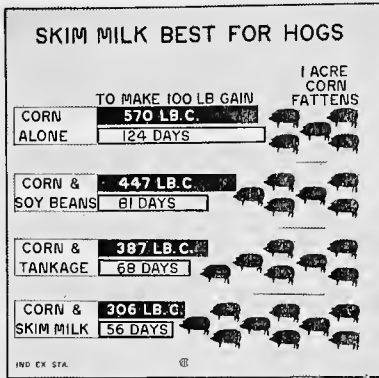
MAKING BUTTER ON THE FARM

Cream should be kept cold until time to ripen it for churning but should not freeze.

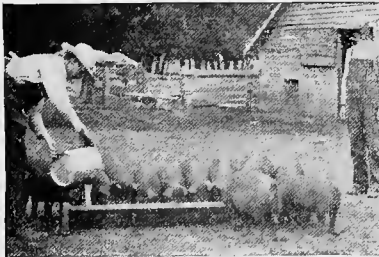
Farmers' Bulletin No. 876, published by the U. S. Department of Agriculture, Washington, D. C., gives reliable instructions on home butter making.



SKIM MILK FRESH AND WARM FROM THE SEPARATOR IS A FEED THAT CANNOT BE REPLACED BY ANY SUBSTITUTE



This chart shows the result of hog-feeding trials at the Indiana Experiment Station. Note that when corn was fed with skim milk it took only 306 pounds of corn to make 100 pounds of gain on the hogs, and this gain was made in 56 days. An acre of corn thus fed with skim milk fattened nine hogs, while corn fed alone and with other feeds did not make as much gain nor did it feed so many hogs to the acre.



Duroc Digest

Buttermilk and whey, while not equal to fresh milk for feeding, are too valuable to waste—they are valuable feeds for pigs and calves and the right use of them adds profit to dairying.

There is no other feed that will put bloom on pigs and make them grow like fresh warm skim milk will when fed with a little grain.



Calves, after 3 weeks old, will grow just as big, just as strong and a lot cheaper when fed fresh, warm skim milk as when fed whole milk, and they will grow a lot better on skim milk than on any substitute.

These Holstein calves drinking skim milk and eating corn meal are as healthy and strong as though they were running with their mothers and getting all the whole milk they could drink. When we figure that these calves will grow into valuable cows to keep up the herd, we find that the skim milk they are drinking is bringing more than to market it in any other way.



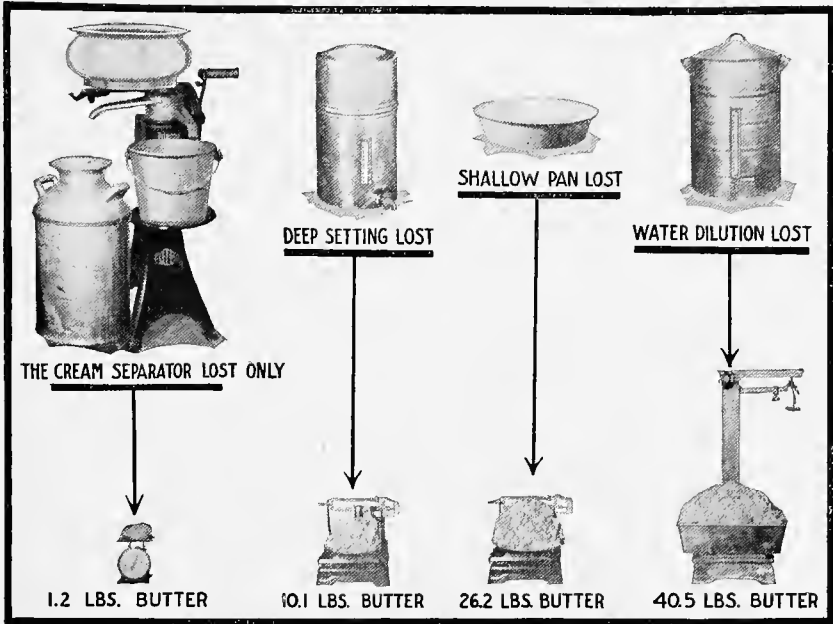
Skim milk every day for the chickens will help to make them grow, make them happy and make them lay eggs.

When we separate milk at home we have it fresh which makes it worth more to feed; we run no risks of getting disease from other herds as when we get milk separated away from home.

WE CAN'T AFFORD TO DO WITHOUT A CREAM SEPARATOR

We lose too much butter fat if we try to separate milk any other way.

The Indiana Agricultural Experiment Station made a careful test to find out how much butter is lost from one cow's milk in a year by different methods of separating. Here is what they found:



We not only get all the cream from the cream separator, but **We get better cream.**

The milk doesn't sit around taking on odors while waiting for cream to rise.

Takes less time.

The cream is separated all at one handling and in a few minutes.

Takes less labor.

It is easier to turn and wash a separator than to pour into and handle and scrub a lot of pans and cans.

Takes fewer vessels.

The skim milk is fed and out of the way. It takes only about one-sixth as many vessels to hold the cream as it does the milk.

Takes less storage.

A can of cream takes but little room. Pans and crocks to hold the milk would spread all over the milk house.

VEAL CALVES

One of three things must be done with every calf:

1. **Raised for a cow or breeder or beef.**
2. **Fed and sold for veal.**
3. **Killed at birth.**

Choice calves from choice cows should be raised to take the places of their mothers and to start new herds.



These dairy-bred steers aren't money makers. They had better have been made into veal two years ago.



This Milking Short Horn will make profitable use of separated milk and grow into high-class beef.

using a cream separator and feeding grain ration. Feed and care for the pages 24 to 29, except that the calf should be fed whole milk until it has learned to eat grain.

A little more milk and grain should be fed veal calves than calves being raised for cows.

When feeding calves for veal, be careful—feed liberally when the calf gets to drinking and eating well but don't overfeed and make it sick. Alfalfa hay, if fed too liberally, will sometimes cause scours.



These Guernseys are of the kind to raise for cows.

In herds of strictly dairy cows it is rarely profitable to raise the calves for beef. Better make veal of the ones not kept for cows.

Calves from dual-purpose cows can be profitably raised for beef on separated milk.

Whether the dairy-bred calf can be profitably vealed depends on the calf, the price it will bring and whether the milk can be more profitably used some other way.

If the dairy calf is small and thin at birth and not well enough bred to keep for a cow, better kill it as soon as it is born, for the hide and rennet.

In dairy herds of large rugged cows, the calves not raised for cows can in most cases be vealed and made a profitable by-product by using skim milk fresh and warm with a veal calf the same as outlined on



When no heifer calves are raised and the herd is kept up entirely by buying cows it is good business to use a bull of the beef breeds so the calves will make better veal.

HOW MUCH IS A BULL WORTH?

Are you using a bull whose ancestors have records showing that they were good producers, or are you using just a common bull whose ancestors nobody knows much about?

HERE'S WHAT A COMMON BULL CAN DO

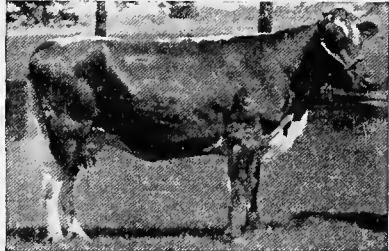
Prof. C. H. Eckles in his book, "Dairy Cattle and Milk Production," tells that a common, dairy-herd bull used in the herd at the University of Missouri sired cows that produced a yearly average of 1,009 pounds less milk than their mothers.

HERE'S WHAT A GOOD BULL CAN DO

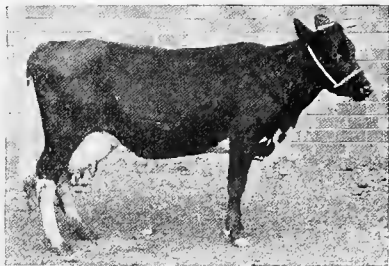
No. 1. This is a scrub cow that Mr. Hugh Van Pelt selected for the Iowa Experiment Station to show how good bulls and good feed will improve a herd. Her average yearly production under good care was 3,875 pounds of milk and 193 pounds of butter fat.



No. 2 is a calf of No. 1 and was sired by a good Holstein Bull. Her average yearly production was 6,956 pounds of milk and 266 pounds of butter fat.



No. 3 is a calf of No. 2 and was sired by a good Holstein Bull. Her average yearly production was 12,804 pounds of milk and 483 pounds of butter fat.



Two crosses of good bulls raised the yearly milk record from 3,875 pounds to 12,804 pounds and the butter fat from 193 pounds to 483 pounds.

A BULL MUST HAVE SOMETHING TO RECOMMEND HIM BESIDES BEING JUST A BULL.

DO YOU KNOW THAT THE DIFFERENCE BETWEEN TWO BULLS MAY BE THE PRICE OF A FARM?



It is possible for a bull to so improve a herd that the increase in milk production and the increase on the value of offspring will in a few years amount to the price of a well-equipped dairy farm.

Let's see.

Suppose we have two herds of 20 good grade cows each. (See next page.) The cows in both herds average 5,000 pounds of milk yearly.



On Herd No. 1 for three years we use Bull No. 1, a high-class bull from a family of high-producers, every animal in his pedigree proven good by records. He cost us \$150 when a calf.



On Herd No. 2 for three years we use Bull No. 2, just a bull that we "picked up" like many bulls are. He may be sired by a good bull and from somebody's common cow. He cost us \$25.

We raise three crops of calves from each herd. Suppose half of the calves are heifers and we keep eight heifers each year for cows.

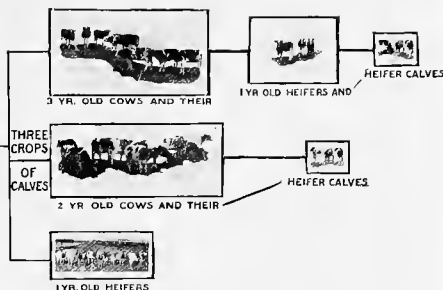
Study the next page and see what the bulls have done for us by the time the first calves have become cows and have been milked one year.



HERD NO. 1 BRED TO



GOOD BULL NO. 1



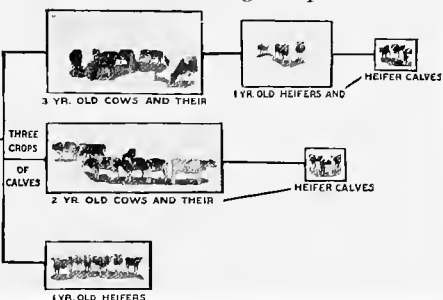
The 20 cows (Herd No. 1), bred three years to Bull No. 1. Their first heifers have been milked one year and have freshened the second time. The second lot of heifers have their first calves. We have 33 descendants counting one-half the calves being heifers and discarding the poorer ones.



HERD NO. 2 BRED TO



COMMON BULL NO. 2



The 20 cows (Herd No. 2), have been bred three years to common Bull No. 2. We have 33 of his descendants, all inferior to the cows we started with.

Let's figure the difference.

The eight 3 year old cows by Bull No. 1 each produce 2,000 pounds more milk than their mothers. 16,000 pounds of extra milk at \$2 per cwt. amount to \$ 320	
The eight 3 year old cows by Bull No. 2 each produce 1,000 pounds less milk than their mothers. 8,000 pounds at \$2 per cwt. amounts to	160
Difference in favor of Herd No. 1.	\$ 480
The eight 3 year old cows in Herd No. 1 are worth \$50 more each than cows sired by Bull No. 2. \$50 per head difference on eight cows amounts to	400
The eight 2 year old cows in Herd No. 1 will bring \$35 more per head than the eight 2 year old cows in Herd No. 2. \$35 per head on eight cows is	280
The eight good yearlings in Herd No. 1 are worth \$25 more per head than the eight in Herd No. 2. \$25 per head on eight heifers amounts to	200
Then we have in Herd No. 1 three yearling heifers from the eight good 3 year old cows that are worth \$25 more per head than the heifers in Herd No. 2. \$25 per head on three heifers amounts to	75
We also have six heifer calves of the second generation in each herd; the good ones worth \$15 more per head than the common ones. That amounts to	90
Bull No. 1 is now worth \$250 which is \$100 more than we paid for him.	
Bull No. 2 is worth about \$50 for bologna which is \$25 more than he cost to start with. Here is a difference in the increase in value of the two bulls of	75

Total difference in one year \$1,600

What would the difference amount to in three or four more years?
 What would be the difference if the bulls were used on a half dozen herds?
 If we had pure-bred herds the difference would be still greater.

Can we afford to take chances on a bull whose ancestors we know little or nothing about?

TAKE CARE OF THE BULL THE YOUNG BULL



Teach the bull to lead when he is a calf.

Separate the young bull from the heifers when he is about 5 months old. Better keep him on pasture in summer with another young bull or with a steer or two of his size.

Feed him the same as the heifers. (Page 30.) To make extra growth, feed him a little more liberally.

Dehorn the bull unless he is to be a show animal. A bull without horns is less dangerous than one with them.

The bull is old enough for light service when 1 year of age.

THE MATURE BULL



This good bull out in the field might do a lot of damage.

Put a ring in the bull's nose before he is 1 year old.

Don't let the bull run with the cows in pasture because:

1. It's dangerous; he may attack people.
2. He may break out.
3. We can't keep a record of breeding dates.
4. He may impair his vitality.

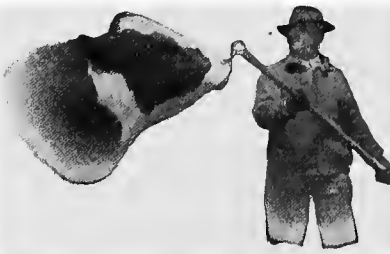
Provide a well-fenced lot for the bull with a stable or shelter where he can be shut in when necessary.



We can sometimes keep two dehorned bulls together.



Keep fences, doors and ties strong and in repair.



The bull should have plenty of room and opportunity to exercise to keep his hoofs from growing long and to keep him healthy. There is no better place than a large lot.

Always use a strong staff in leading the bull. Renew the ring in his nose often enough to keep it strong. Treat him kindly and quietly. Never take a chance, always have the advantage when near him. Life is too precious to be lost through carelessness.

HOW OLD MUST A BULL BE BEFORE WE KNOW WHETHER OR NOT HE IS REALLY VALUABLE AS A SIRE?

Do some counting. He should be 15 months old before put to much service. His first daughters will arrive when he is 2 years old. He will be 5 years old before enough of them freshen to give an indication of his worth, and then we must milk them a year. Even then we can't tell for sure how good they are going to be until they freshen the second time and are milked a year. Our bull will then be about 7 years old. **How many 7-year-old dairy sires can you name?**

Many a good dairy sire has been butchered before his worth was known.

Dairy bulls are apt to get cross with age, especially when closely confined without enough exercise. Valuable bulls are often sacrificed because they are vicious. When a bull's worth is known it is better to make his pen and stall absolutely break-proof and provide means for safely handling him than to lose his services.



**Don't butcher him if he's a valuable breeder
—make his pen strong.**

BULL ASSOCIATIONS

Many co-operative bull associations are working successfully.

A bunch of dairymen get together and buy a high class bull so they can all use him with little outlay of money.

This plan is helpful to breeders who can't afford to own a valuable bull for their small herds.

In a bull association the services of a strictly high class bull doesn't cost any member as much as it would for him to keep a cheap, common bull himself.

A bull association composed of fair-minded, honest dairymen can make a community famous for good cattle, increase the milk production and make the breeding stock of that community bring in thousands of dollars.

Farmers Bulletin 933, published by the U. S. Department of Agriculture, outlines plans and rules for cooperative bull associations.

BOYS' AND GIRLS' CALF CLUBS

Attention Fathers, Mothers, Bankers, Business Men, County Agents, Chambers of Commerce:

Have you a Boys' and Girls' Calf Club in your neighborhood?

If you haven't, why not start one for the good of the boys and girls, and the good of the dairy industry?

Calf clubs mean ownership for the boys and girls. Boys and girls who own something learn to be thrifty, reliant and to have a regard for the property of others.

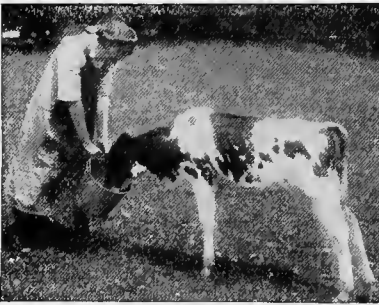
A live wire, red-blooded banker with some humanity in his make-up can revolutionize a community by loaning boys and girls money to buy good calves.

Work out a plan with the County Agent. Have the boys and girls come to the bank and sign their notes and learn to transact business.

If a bank wants business, not only next year but 10 years from now, there is no surer way than to finance some real club work and then follow it through to a success.

The quickest way to start the dairy business through club work is to start with heifers already bred. A good start can be made with younger calves at less outlay at the start.

A carload of good dairy heifers all of the same breed, sold to the boys and girls of a community, may establish in that neighborhood a breed of cattle that will give the neighborhood a nation-wide reputation.



This girl is getting training that will make her a better student, a better artist, a better business woman, a better housekeeper, a better mother. She will never be less a lady because she fed and loved a calf when she was a little girl.

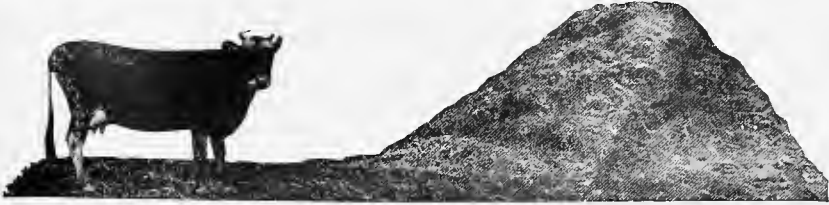


No boy ever went very far wrong if he had something alive to own, something he could feed and watch grow and something he could sell and keep the money. Criminals are men and women who didn't have anything to own in childhood.

Let your boy or girl own a calf whether there is a calf club or not.

DON'T WASTE THE MANURE

The man who keeps cows and doesn't take care of the manure is losing one of the greatest advantages of dairying. He's losing profit; he's robbing his farm; he's robbing himself.

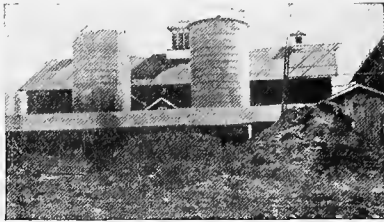


A good cow will produce about 12 tons of manure in a year.

No kind of farming will build up a farm like good dairy farming, but it won't do it if the manure is thrown out in the yard and left to leach and rot and blow away.

When we see back of the dairy barn, piles like these accumulating all winter, and stinking up the place and breeding flies in summer, we know there's something wrong with the system. *No well-regulated business will permit such a leak.*

The piles below show what happened in a test at the New York College of Agriculture. This happens on thousands of farms.



Ten thousand pounds of cow manure thrown out April 22.



The same pile October 21. In six months it lost 4,875 pounds in weight and 32 per cent plant food.

No dairy farm is equipped unless it has a manure spreader. *Manure is always worth the most when it is fresh. The sooner it is spread the better.*



WHICH IS THE BEST BREED?

The best breed for us should be:

THE ONE WE LIKE BEST.

We will always take better care of animals of the breed we like best. There may be some condition of locality or market that makes it necessary for us to learn to like some other breed than our first choice.

THE ONE THAT FITS OUR MARKET.

The choice of breed may depend on whether we particularly want large quantities of butter fat, or whether we want large quantities of milk without paying so much attention to butter fat.

THE SAME BREED THAT OUR NEIGHBORS HAVE.

The majority of the good herds in any neighborhood will likely be of the breed best suited to the section. We should have the same breed as the other good dairymen in our neighborhood. There are many advantages in having all the herds of the neighborhood of the same breed. The farmers of a section just starting dairying should by all means all start with the same breed. (See pages 21 and 67.)



Hostein bull



Holstein cows

The Holstein produces more milk than any other breed but its milk is not so rich in butter fat as that of some of the others.



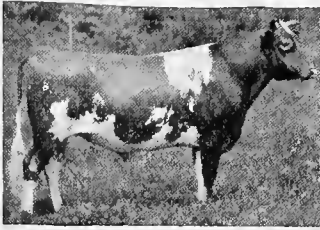
Ayrshire bull



Ayrshire cows

The Ayrshire is a hustler and will gather a living from rough pasture and make a lot of choice milk a little richer than the Holstein's.

WHICH IS THE BEST DAIRY BREED?

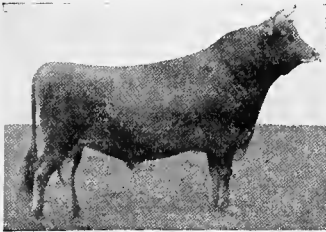


Guernsey bull

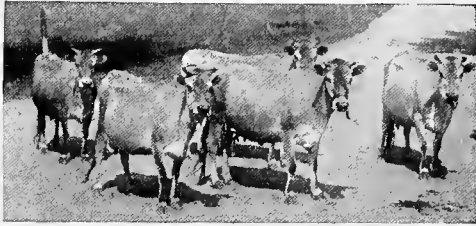


Guernsey cows

The Guernsey not only gives a good yield of milk but the milk is rich in fat and rich in appearance.

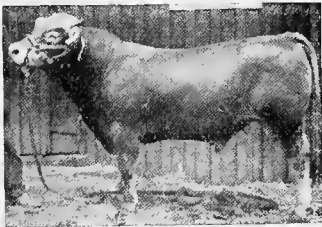


Jersey bull



Jersey cows

The Jersey gives milk that is the richest in butter fat of any of the breeds, but usually doesn't give as much milk as some of the others.



Brown Swiss bull



Hoard's Dairyman!

Brown Swiss cows

The Brown Swiss is big and strong and gives a good yield of milk and butter fat.

See dual-purpose breeds, next page.

DUAL-PURPOSE BREEDS

There may be times and places where it would be profitable for us to have cows that give a large flow of milk, and also be of a type producing calves that grow into good beef animals.



Milking Short Horn bull

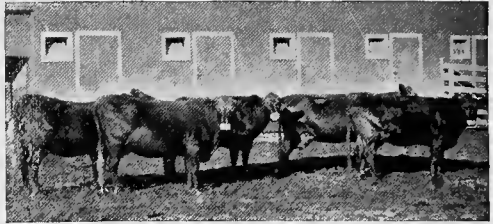


Milking Short Horn cows

The milking Short Horn, while not always equal to the dairy breeds for profitable milk production, does produce a large flow of milk and has a good beef type.



Red Polled bull



Red Polled cows

The Red Poll has a host of friends and makes a good showing in both milk and beef production.

The strictly dairy breeds are the most profitable milk producers but some cows of the strictly beef breeds give a large flow of milk.



Hereford cows



Angus cows

It is better to milk Hereford, Angus or Galloway beef cows than for the family to do without milk.

DISEASES, PESTS AND TROUBLES

MILK FEVER

The cow becomes paralyzed soon after calving and may die. She lies with her head around to her flank.

Cause

Affects heavy milking cows, that have not been thoroughly dried off. Heifers never have it. (See page 33.)

Prevention and Treatment

Dry the cow off thoroughly before calving. A cow that has been dried off until only clear water comes from her teats will not likely have milk fever. When a cow has an attack, fill the udder with air; use an air pump and have it thoroughly clean and sterilized. Better call a veterinarian immediately.

Don't try to give medicine; a cow with milk fever can't swallow.



The cow lies with her head around to her flank when she has milk fever.

ABORTION

The calf is born before time. The cow often "fails to clean" which sometimes causes serious trouble; she is apt to abort again when bred; she may become entirely sterile.

Cause

Caused by abortion germ which gets into the body with feed or water, through a cut or injury to the skin, or through the teats or which may be introduced by a bull that has been used on infected cows.

Prevention and Treatment

Take the cow away from the herd, burn the calf, the afterbirth, the straw and everything that can be burned that has come in contact with the cow during the abortion. Disinfect thoroughly the stable with a strong disinfectant. Have a competent veterinarian remove the afterbirth. Flush the cow daily with clean warm water with four tablespoonfuls of salt to each gallon until there is no discharge. Better put the case in the hands of a competent veterinarian.

TUBERCULOSIS

May not show on the animal until the disease is far advanced. Causes coughing and diarrhea; the cow may hang her head, have dull eyes, rough hair, and grow thin in flesh.

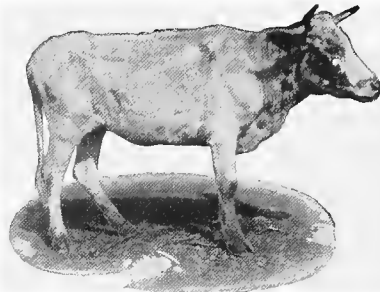
Cause

Caused by tuberculosis germ.

Prevention and Treatment

Have stables and sheds clean, light and well ventilated; this helps to prevent disease. If cows or calves show symptoms have them tested and handle according to the state's regulations—see your veterinarian. Buy only cattle entirely free from tuberculosis.

Every farmer should have Bulletin 1069 on Tuberculosis of Live Stock, published by the U. S. Department of Agriculture, Washington, D. C.



A dull eye, droopy head, rough hair, and thin flesh indicate tuberculosis.

GARGET

The cow gives stringy, sometimes bloody, milk.

Cause

Comes from bruises and injuries, lying on hard floors or by garget germs getting into the udder.

Prevention and Treatment

Keep the stalls bedded. Rub udder with lard. **Be sure to always milk last, the cows with garget, so the germs will not be carried on hands or milker to healthy cows.**

CALF SCOURS

White scours attack new-born calves; the bowel discharge is light-colored and stinking. The calves soon die if not treated.

Common scours may attack calves any time during the period of milk feeding. There is an offensive bowel discharge, weakness and loss of growth of the calf.

Cause



These calves have had scours caused by improper feeding; they are stunted and may never fully develop.

Calves carefully fed on milk, fresh and warm from the separator and from clean buckets, rarely have scours.

The treatment for white scours is to use "scours serum" by injection. Consult a veterinarian.

Common scours can be treated by cutting down the feed one-half and giving four drops of formalin to each quart of milk. Allowing the calf to drink small quantities of lime water will sometimes cure scours.

White scours are caused by germs. They usually affect calves kept in filthy pens.

Common scours are caused by feeding from filthy buckets, by over-feeding and feeding milk at varying temperatures.

Prevention and Treatment

Have the calf born in a clean stall or pasture. Disinfect the navel at birth with iodine or other disinfectant. Always feed clean milk from clean buckets. Don't overfeed. (See pages 24 to 29.)

BLOAT

The paunch fills up tightly with gas, the animal suffers and, in bad cases, will die if not relieved. The gas swells the left flank, making it bulge up.

Cause

Caused by eating such feed as green clover or alfalfa, or it may come from eating spoiled feed, or result from choking.



The arrow points to the spot to tap for bloat.

Prevention and Treatment

Give only sound, clean feed. Get the animals gradually accustomed to green clover and alfalfa. In mild cases drench the animal with two or three table-spoonsful of baking soda in warm water. In severe cases tap with a trocar or knife the left side at spot (indicated in picture), about half way between hip and last rib.

BLACK LEG

Usually shows, as puffy swellings, on the hind quarters of young cattle. The animal dies soon after the swellings appear.

Cause

Caused by black leg germ.

Prevention and Treatment

Have a good veterinarian vaccinate the young cattle with the regular black leg treatment.

CHOKE

Cows and calves may choke on roots, apples or on feed that they can gulp down in big mouthfuls.

Treatment

Hold the mouth open with a clevis and if possible reach down the throat and remove the object. If the object can be felt from the outside work it gently up or down; **don't force it roughly down the throat with a stick or whip-handle.** It may be necessary in severe cases to force the object down the throat with a smooth stick or whip-handle but do it with great care. It may be necessary to have a skilled veterinarian cut open the throat and remove the object.

WARBLES IN BACK

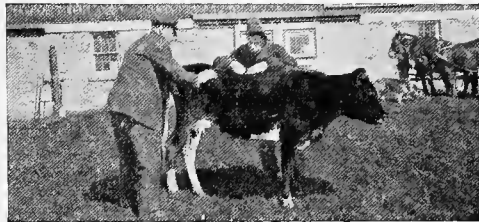
Sometimes called grubs. They make humps on the cows' backs under the skin in the winter; inside the lumps are the grubs that "hatch" out of the skin. The animal suffers from the presence of the grubs.

Cause

Caused by the warble fly which lay eggs that hatch into grubs.

Prevention and Treatment

Kill the grubs. Squeeze them out of the skin either by hand or by pressing a bottle over the grub.



Squeeze the warbles out and kill them. Don't let them hatch to make more warbles.

FOOT ROT

The cows get lame and in advanced cases the horn of the hoof becomes loose and discharges pus.

Cause

Hoofs become too long from lack of exercise and filth wedges between the hoofs making them sore, then infection enters.

Prevention and Treatment

Give exercise so the hoofs won't grow long; keep the cows from standing in mud and filth. Use coal tar disinfectant in mild cases. Use weak solution of blue vitriol if pus is present. Trim away loose horn if it gets loose.



This kind of a yard is pretty apt to cause foot rot.

LICE

Wash animal with a coal tar dip; follow directions of manufacturer for strength of dip. Protect the animal. Wash again in a week or 10 days, also wash stalls, mangers and rubbing posts.

RING WORM

Makes crusty, itchy spots on the animal's head and neck. The hair falls out of the spots and the animal rubs itself.

Cause

Caused by a parasite that attacks the skin.

Prevention and Treatment

Soak the spots with warm water and soap to remove the crusts and paint the spot with tincture of iodine or a weak solution of blue vitriol.

FLIES



The common biting fly and horn fly can be kept off the cattle by spraying the animals once daily with one of the numerous fly repellents. The fly repellent should be used long enough before milking so the odor will not flavor the milk.



A light blanket thrown over the cow while milking in fly time will add to the comfort of both cow and milker. Keep the blanket clean and free from dust.

TO KEEP OUR HERD HEALTHY:

- Let the animals be outdoors part of every day if possible.
- Have barns and sheds well ventilated.
- Let sunshine into the barns and sheds.
- Furnish good pasture.
- Provide fresh, clean drinking water.
- Keep stables, both stalls and mangers, clean.

READ THIS:

The man who raises his own dairy herd has 100 advantages in keeping his cows healthy over the man who depends always on buying cows to keep up his herd.

Many herds have been entirely ruined by buying diseased animals.

It is necessary and good business to occasionally buy animals to introduce new blood and to improve the herd.

Let's start a good, healthy herd.

Give care and feed to keep it healthy.

Then raise our own best heifers and buy only animals that are proved absolutely healthy and we have gone a long ways toward keeping away disease.

DON'T HAVE TOO MANY COWS

Too much dairying is as bad as too much anything else.

Don't get so many cows on hand that it takes yourself and wife and children and hired help 18 hours a day to take care of them.

When the cows take so much time to be milked and fed and turned in and out that we can't have time to raise the feed for them, we have the dairy business overdone.

Better by far have a dozen real good, money-making cows and keep them always well fed and well cared for, and have time to grow a garden and raise chickens and to keep the place cleaned up and attractive, than to have 25 or 30 cows and be always rushed, early and late, with no time for anything except to milk and drive cows and clean stables.

When we get too many cows the profit per cow goes down.

Let's have our well-cared-for herd of good cows, and raise all our own feed that we can; let's raise our own good heifer calves and some pigs and chickens; let's have a good garden and keep the yard and buildings cleaned up. If we do this we will be sure of a home and plenty to eat, which are things we must have before we are any account for anything else.



Let's have our pigs and our chickens.



And our truck patch and garden.

If we have these things the cows will surely do their share on the bank account.

The more farms in our country having all these things the better our country will be and greater will be our prosperity.

The IHC Agricultural Extension Department

What It Is—What It Does

WHAT is the Agricultural Extension Department of the International Harvester Company?

It is not a sales department. It is not an advertising department. It is a department to help every community to be more prosperous and happy.

The Harvester Company is a citizen of every neighborhood and through its extension department offers to help folks who want to help themselves. Every community must work out its own problems but the department will do all it can to help in any movement that means a better community.

How is this done? Through seven divisions of the department.

1. **Short Course and Campaign Division** furnishes practical lecturers and demonstrators to help communities with short courses and campaigns on farming and home making. Ask the nearest IHC Branch House about this service.

2. **Lecture Division** furnishes lecturers and demonstrators for special meetings when possible. There is no charge except traveling and hotel expenses of the lecturer.

3. **Chart, Slide and Reel Division** has 2,000 large lecture charts and 1,000 sets of lantern slides and motion picture reels on farm, home and community problems which are loaned to county agents, community clubs, schools, colleges, lecturers, teachers or anyone making good use of them. They are loaned free, those who borrow them paying transportation charges to and from Chicago or nearest supply point.

4. **Publicity Division** prepares booklets like this one (about 100 different booklets on list); prepares special educational articles which are furnished free to newspapers, farm journals and other publications; furnishes cuts and photographs to newspapers, farm bureaus and others.

5. **Literature Division** distributes the booklets. A small charge to cover the actual cost is made for the books. Merchants, bankers, business men—all public spirited citizens who wish to co-operate in getting these books in the hands of those who will be most benefited by them can have their compliments or message to their local people printed on the back cover without additional charge.

6. **Library Division** has complete library of agricultural information including state, government and experiment station bulletins, for the purpose of answering inquiries and furnishing information. No charge is made for this service.

7. **Art Division** makes lecture charts for our own use, for county agents, farmers' organizations, commercial clubs or individuals who want to do something for their communities.

The Visual Method of Instruction

The Big Idea in Education Characterized in IHC Lecture Charts and Lantern Slides SIMPLE—LOGICAL—IMPRESSIVE—PRACTICAL

USED EVERYWHERE — In Community and Home —
Rural School and College — On the Farm and In the Factory
— By Teacher, Pupil, Farmer, Banker and Merchant

IHC CHARTS OR SLIDES LOANED FREE

On these conditions — that you have a plan for using them, pay express charges from Chicago and return, and report all meetings at the end of each week

CHARTS OR SLIDES FURNISHED ON THE FOLLOWING SUBJECTS:

1. Corn is King
2. Alfalfa on Every Farm.
3. A Fertile Soil Means a Prosperous People.
4. Live Stock on Every Farm.
5. Dairying.
6. Greater Profit from the Oat Crop.
7. Make More from Your Farm Poultry.
8. Weeds Mean Waste.
9. Home Economics and Sanitation.
10. Fight the Fly.
11. Great Forward Movement in Education.
12. Diversified Farming for the South.
13. Home Canning.
14. Development of Agriculture—
(No 14 in Lantern Slides only)

CHARTS

IHC lecture charts are 70 inches long by 63 inches wide, made of a good grade of sheeting, printed in clear black letters, which can easily be read at a distance of 100 feet or more. They are arranged for setting up and taking down quickly and conveniently.

Sets contain from ten to fifteen charts. Each set with iron stand, pointer, and lecture book, is packed in a canvas case. Weight, 35 lbs.

LANTERN SLIDES

Lantern slide sets, 50 to 60 slides, plain and in colors. Weight, 15 lbs.

Lecture Books Furnished

For the information and direction of lecturers, each set contains an illustrated lecture book outlining in brief form the story of each chart or slide.



THE sole object of the Agricultural Extension Department of the International Harvester Company is to help YOU make YOUR work more effective. It is not a matter of making money out of charts, slides, booklets, or any other material prepared and published by the Department. The Extension Department was not organized to make sales. But we do want to work with people who are in earnest; who really want to do something worth while.

Circuits formed to reduce express charges. Write for plan.

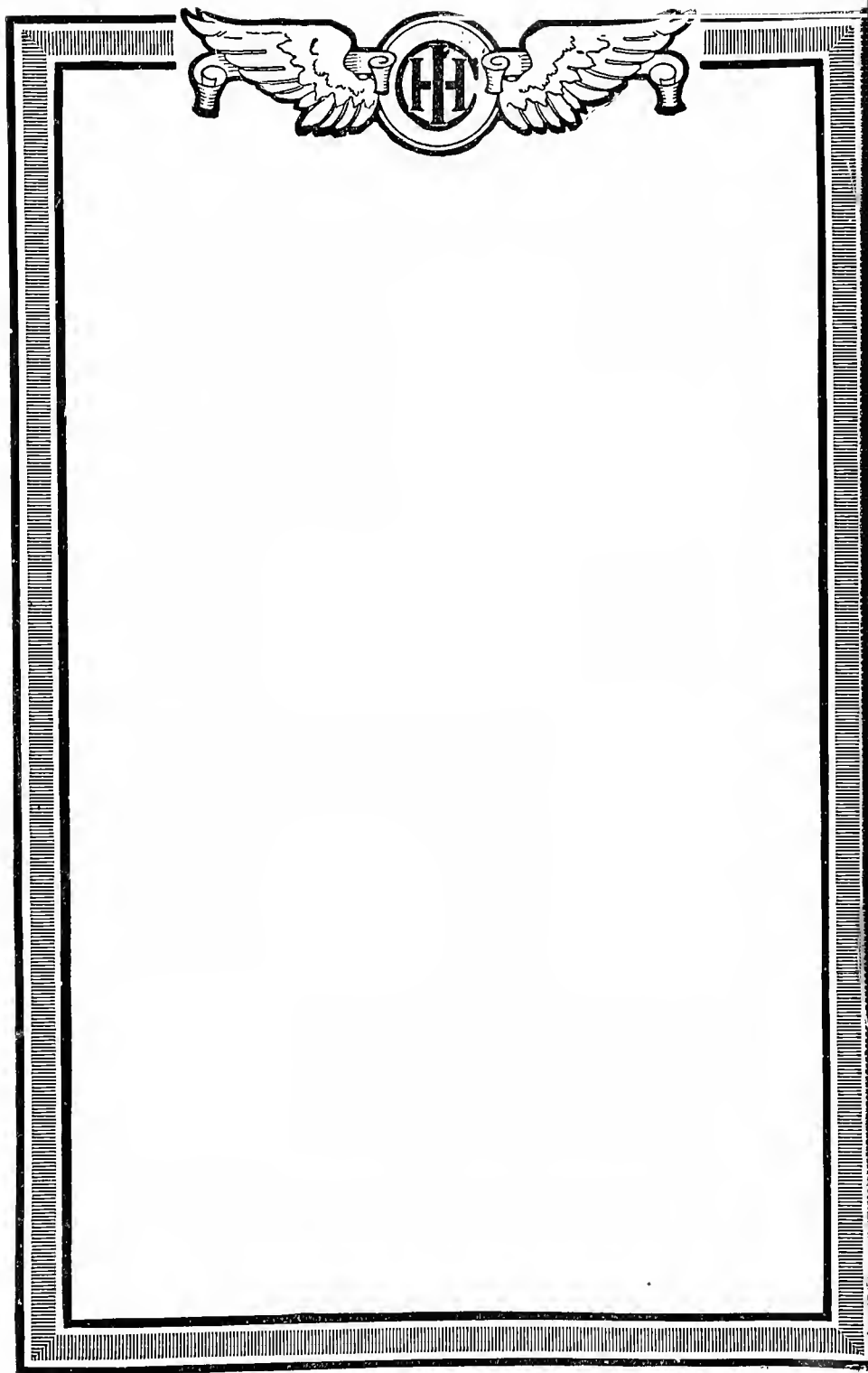
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