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Vol. 1. No 4.

KINGSTON, ONT., CAN., OCTOBER, 1898.

50c Per Year.

What the Largest and
Best Known -
 - *Creamery*
 In the World Says of Cream
 Separators

ST. ALBANS, VT. Jan. 7, 1898.

Only after seeing the practical working of the different kind of separators on all kinds of milk, and after testing each as to its actual capacity and thoroughness of separation, are we willing to express any opinion of their relative merits. We have used during the past seven years Eighty separators, representing Nine styles of manufacture, and the results of many carefully made and constantly maintained comparisons satisfy us that the "Alpha" De Laval is the best.

Franklin County Creamery Association,

T. M. DEAL, Manager.

G. H. OLAFLIN, Supt.

Minnesota's - Dairying - Giant
 —ON THE—
 "Alpha-De-Laval"
 Cream Separators.



"UNIVERSITY OF MINNESOTA
 AGRICULTURAL EXPERIMENT STATION,

ST. ANTHONY PARK, MINN., Jan. 27, 1898.

We have now operated the different sizes of the 'Alpha De Laval separators in our College of Agriculture, School of Agriculture and experiment Station for the past seven years and in every instance they have given entire satisfaction. They all skim clean to their full rated capacity and at a wider range of temperature than is claimed for them. I do not see how it could be otherwise when the law of gravity and the distance the milk must travel in passing through the separator is taken into account. The thinner the layer of milk as it passes between the discs, and the further the milk must travel under centrifugal pressure the more exhaustive and complete the separation. It therefore follows that the 'Alpha' is the ideal milk separator.

T. L. HAECKER,

Prof. Dairy Husbandry.



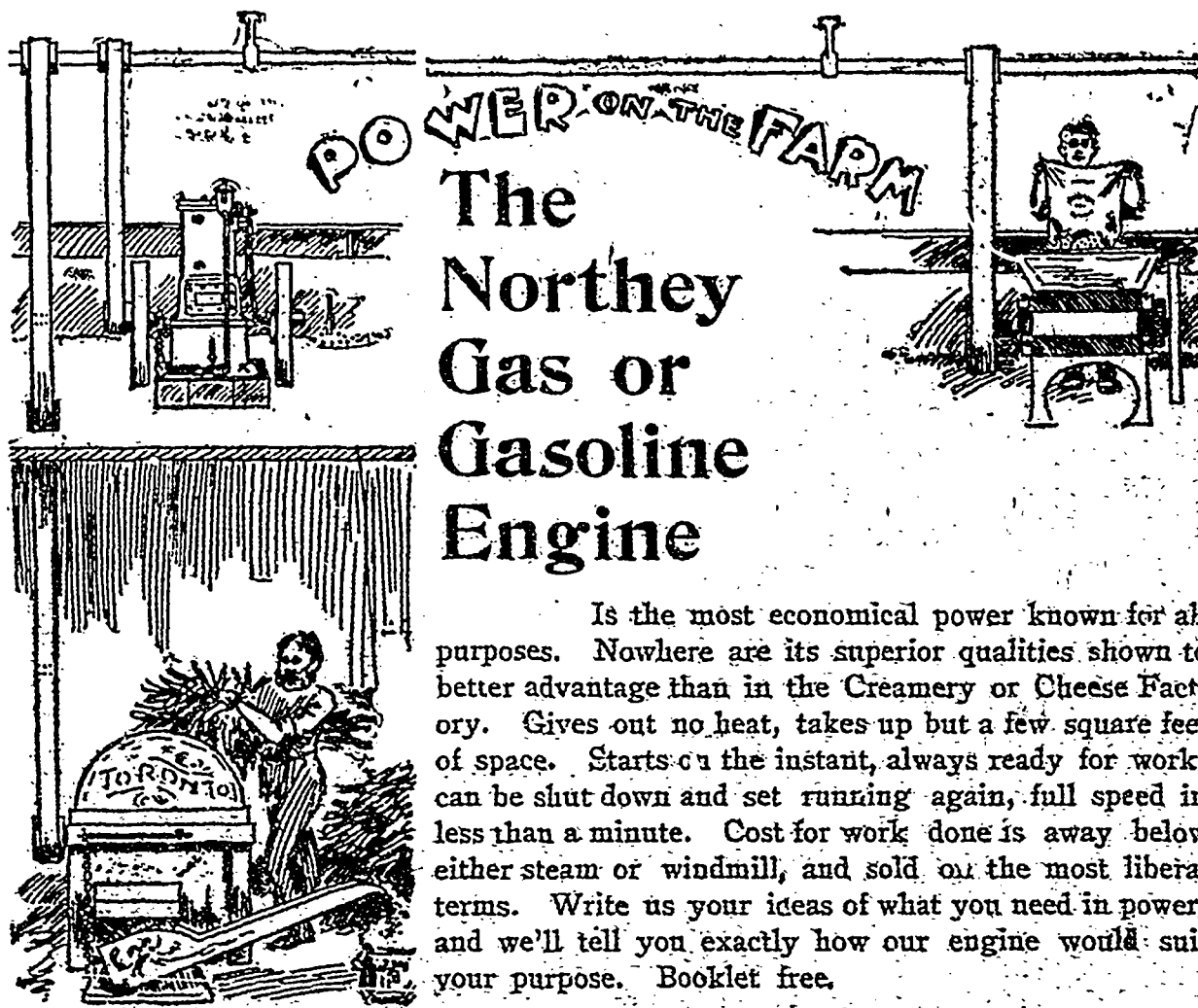
"CREAMERY" or "DAIRY" SEPARATOR CATALOGUES and any
 desired information gladly furnished upon application.

CANADIAN = DAIRY = SUPPLY = COMPANY.

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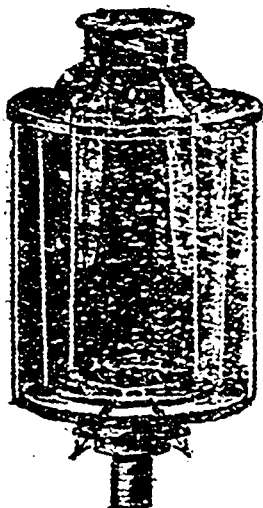
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Is the most economical power known for all purposes. Nowhere are its superior qualities shown to better advantage than in the Creamery or Cheese Factory. Gives out no heat, takes up but a few square feet of space. Starts on the instant, always ready for work, can be shut down and set running again, full speed in less than a minute. Cost for work done is away below either steam or windmill, and sold on the most liberal terms. Write us your ideas of what you need in power, and we'll tell you exactly how our engine would suit your purpose. Booklet free.

THE NORTHEY MANF'G CO., B 1021 King St. Subway. **TORONTO.**

Everybody is asking why the IMPROVED UNITED STATES SEPARATORS

ARE SO PERFECT IN OPERATION and so superior to all others. The reason is very easy to be understood. It is the **Triple Current Separator.**



The milk passing three times the height of the bowl, while all others pass but once, practically makes three separators in one. The cream easiest separated is caught in the first passage, that not so easy in the second, and the third exhausts every trace of fat, making perfect separation. Examine the illustration, trace the course of the arrows, and you will be convinced.

University of Minnesota Agricultural Experiment Station.

ST. ANTHONY PARK, MINN., July 26, 1908. During the past three years we have used the various sizes of the Improved United States Separator in our experimental work and also in giving practical instruction in dairying in the College of Agriculture, School of Agriculture and Dairy School of the University of Minnesota, and it gives me pleasure to state they have given most excellent satisfaction. They skim clean, are simple, durable, and not liable to get out of order.

T. L. HAECKER, Professor of Dairy Husbandry.

The Wisconsin Agricultural Experiment Station.

MADISON, WIS., July 21, 1908. In conducting our Dairy School, we had occasion to use the various sizes of Improved U. S. Separator for dairy instruction during several winters past. Our students have always been pleased with the operation of these separators, and we find that they skim the milk very clean indeed from fat, and that they are generally very satisfactory.

W. A. HENRY, Dean College of Agriculture.

Send for this name complete.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

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ARE THE BEST
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For sale by all Dealers in Dairy Supplies, or
THOS. J. DILLON,
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WHAT SHALL WE DO
With This Girl?



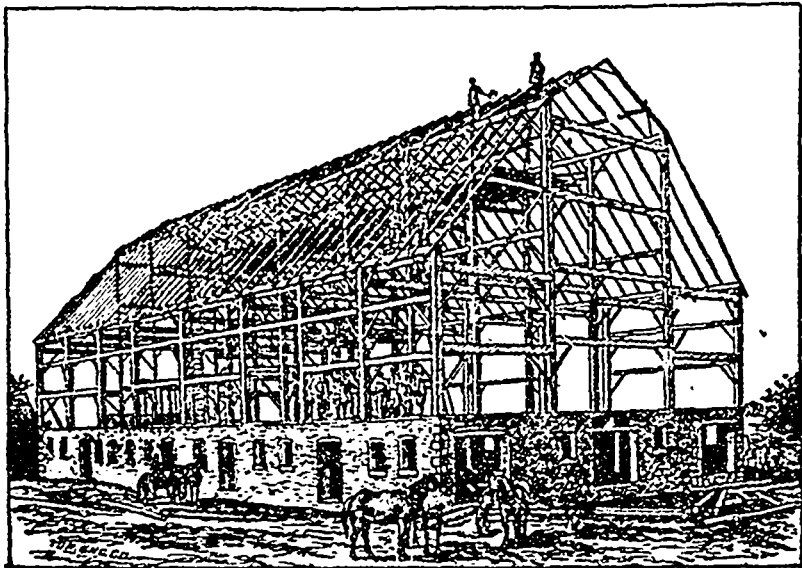
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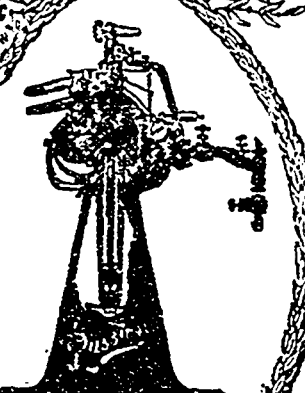


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**THE TEST OF
A SEPARATOR.**

Is to get you to come again when you are ready to enlarge your plant and want another machine. If you purchase a

**Sharple's
CREAM SEPARATOR**

and it suits you, then when your business increases you will want another of the same make. John Newman Co., the most successful creamerymen, in the great Elgin, Illinois, dairy district, are using about thirty of them purchased at different times. The Diamond Creamery Co., of Monticello, Iowa, are using nearly sixty and will have no other kind. The famous Darlington Creamery of Delaware County, Pennsylvania, make all their dollar a pound butter with these machines. They are an all-round superior separator. Their strong points are clean skimming, low cost of repairs, small consumption of fuel and oil, and ease with which they are washed. They don't clog up and they skim fully to their advertised capacity.

Branches: Elgin, Ill.
Omaha, Nebr.
Dubuque, Iowa.
Toledo, O.

P. M. Sharples,
West Chester, Pa.

OPERATIONS OF A FIRST-CLASS CANADIAN CHEESE FACTORY.

Cheesemaking, as conducted at first-class Canadian factories, is no longer a haphazard operation, but is conducted along scientific lines, which give the intelligent and experienced maker power to control his work in every stage. To this only sweet, good-flavored milk must be used, and a good maker will not accept that which is otherwise, if he can detect a faulty condition. Sometimes, however, milk a little off will slip in, especially if well cooled down, and will not develop the bad flavor till heat is applied. The Tavistock (Oxford Co., Ont.) factory, owned by Ballantyne & Bell, and operated under the supervision of Mr. A. T. Bell, has a reputation to be envied for the excellence of the product turned out. The cheesemaker for this and last season is Mr. Moses Knachtel, who appears thoroughly versed in every detail of the work entrusted to him and his three careful helpers. The factory has 140 patrons (many of whom send small quantities) who together sent on August 19th, the day of our visit, 17,900 pounds of milk, says the Farmer's Advocate of Ontario, Canada. This is an average day's weight, and is generally received in good condition. The troubles that have been most general this season, and for which milk has had to be returned, have been the presence of the "cowy" odor. This is only found in milk from careless patrons, and generally at such times as harvesting or other pressing work causes the proper care of the milk to be neglected. The best class of patrons never allow anything to prevent giving the milk the proper attention, which is to aerate it by dipping or pouring in a sweet atmosphere before it is cooled, directly after milking. Cooling without airing is bad practice, and serves to incorporate flavors that give trouble in the curds, and are indeed difficult to eradicate even by very careful special handling. Whenever tainted milk is returned a printed circular is sent along with it, pointing out the importance of having the milk in good condition in order to make good cheese, and also telling how to accomplish that end. The main points are: 1st, the proper washing and scalding the pails, dishes, cans, strainers, cans, etc., scouring them once a week with salt, and not wiping them after scalding. 2nd, cleanliness in milking, and 3rd, aeration and cooling of the milk, and the importance of keeping it out of cellars and other places where taints may exist. The great trouble with patrons who have their milk returned is not a lack of knowledge in caring for it, but usually they possess liberal views as to what is termed cleanliness, or indifferent to the welfare of the factory and its patrons, and the only way to deal with some of them is, to reject their milk.

HEATING AND SETTING THE MILK AND CUTTING THE CURD.

The milk is usually all in the vats by 9 o'clock in the morning. At this season four vats are used, these are each 15 feet long and 44 inches wide. They are each surrounded by a jacket for the reception of water, into which steam is turned. The milk is first slowly heated up to 86 deg. F., two pairs of agitating paddles running during the heating. The milk is tested for ripeness by the rennet test, and it is usually necessary to add a starter in order to have the vats ripen uniformly. When the rennet test shows coagulation in 17 1/2 seconds the vats are set. The starter is made by placing four pails of milk from the best flavored vat, if there is any difference, in a milk can. To this is added two pails of water and one and a half quarts of ripe or sour starter from the previous day's preparation. The quantity added to each vat is usually about one and a half pails, but this is guided by the rennet test.

The milk is set by adding four ounces of rennet, diluted to a good volume with water per 1,000 pounds of milk, and the agitators are allowed to run for three or four minutes. In case of overripe milk it is set at lower temperature, and as high as two ounces more rennet per 1,000 pounds of milk

is added, and the vat is heated up more quickly, so as to keep ahead of the acid. The curd is kept when it splits clean over the finger pushed beneath the surface and gently lifted. This is about thirty minutes after setting. The horizontal knife is first used lengthwise of the vat, and the perpendicular knife crosswise and lengthwise, which cuts the curd into cubes about half an inch through. Care is taken not to break or crush the curd. Four pairs of paddles in each vat are now started, the curd is loosened from the sides of the vat, and steam is turned on below to cook the curd. The temperature is raised from 86 to 98 degrees in from 48 to 45 minutes. The agitators are kept running till the curd shows acid on the hot iron, and the whey is run off when it shows from one-eighth to one-quarter inch. This is usually three hours after setting. In case of fast working curds from overripe milk the curd is cut finer. The whey is mostly run off very soon after cutting and the curd is kept moving with the rake. In cases of bad flavors at this stage Mr. Knachtel has found advantage from washing the curd in the vat, being careful in either case not to have too much moisture in the sink. After the whey is run off, the curds are placed in the sink till they mat, then cut in blocks and frequently turned till ready to mill, in from one and a half to two hours.

MILLING, SALTING AND PRESSING

The curd milk is used, which is run with the engine power. After milling the curds are frequently stirred from 40 to 60 minutes, when they are piled up and closely covered for 45 minutes to mellow down. This tends to help the texture and smoothness of the cheese. They are now broken up and given plenty of fresh air by frequent stirring till the curd shows butter fat and the temperature is down to about 82 degrees, when it is salted at the rate of two and three-quarters to three pounds of salt per 1,000 pounds of milk. Gas or off-flavored curds get more stirring and more time in the open air. A moist curd is salted three pounds per 1,000 pounds of milk to allow for the extra salt that runs away in the dripping. Mr. Knachtel considers piling the curd, followed by plenty of stirring in the fresh air, very important, as to neglect these a soft cheese with rag holes is liable to result. It is also well to have the particles of curd well separated before adding the salt, that the salting may be uniform. The curd is stirred over twice during the salting and two or three times more in the 15 or 20 minutes afterwards. It is then weighed and put into the hoops, 112 pounds in each, which make a finished cheese of about 82 pounds. They are then pressed in the gang press for 45 minutes and then bandaged carefully. The scrupulous cheese cloth bandage is used, which is neatly drawn up to prevent wrinkles. Double top and bottom clothes are put on, the outer ones being removed before the cheese goes into the curing room. The cheese are then returned to the press and turned at 8 a.m. the next day. At 11 o'clock they are taken out of the press and stamped with the number of the vat in which they are made, the date of making, and "Canada," and placed on the shelves of the curing room.

THE CURING ROOM

is a large airy building with fairly good light. As soon as one enters there is noticed a peculiarly pleasant, nutty flavor or odor, which is common to good cheese. This is also recognized in the factory, and is accounted for by the scrupulous cleanliness in which the factory is kept. The curing room is kept at a temperature of from 80 to 70 degrees Fahr. In extremely hot weather the ice box is used. This is six and a half feet high, three feet wide and three feet across. It stands on the floor and is filled with ice. It has an opening at the bottom from which the cool air circulates. The room is kept warm in cold weather by a coal furnace jacketed with asbestos so that the heat escapes only from the top near the ceiling. All the windows of the curing room are thrown open after sunset and closed

(Continued on Page 40)

D. G. H. W. S.

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The Canadian Cheese and Butter Maker.

A Monthly Journal for Dairymen,
Cheesemakers, Buttermakers and the
trade.

Take good care of your Hogs and
Cows, and they will take good care
of you.

Devoted to milk, and its manufactured
product.

PUBLISHED MONTHLY BY

J. O. LINGENFELTER,

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OCTOBER.

A FEW HINTS FOR 1899.

On May 3rd, 1897, I went to work
as a helper in a cheese factory in Glen-
garry County, Ontario.

The cheesemaker had ten years' practical
experience in making cheese in the
celebrated "Brockville" district.

He knew nothing about the three
kinds of gases which confront a
cheesemaker in Glengarry County.

He knew nothing about the "Babcock
test," starters, or, in fact, even box-
ing cheese.

After remaining with him three
months, I saw I could make no head-
way in being an expert in cheddar
Canadian cheese in being an expert,
and at once saw I had to study for
myself. I took a factory and worked
the remainder of the season. By the
aid of Mr. Shernette, the able instruc-
tor, (and a former student of the
Dairy School) and my special study,
I obtained a fair knowledge of the
business.

When the season closed I went to
Kingston, as my nearest dairy school,
and in a few weeks I remained there
I learned to use the Babcock testers,
also the pasteurization of milk, also
the "know how" of starter, and to
run either of the three separators,
now so much in use, and above all else
—cleanliness—now so much talked of
in our papers.

If I had not went to this Dairy
School, I would have been years in
learning what I now know.

I have been offered fifty dollars a
month to take charge of a factory.

Do you suppose, dear reader, that I
could earn \$50.00 a month making
cheese if I had not attended a Dairy
School? J. O. L.

A VISIT TO THE DAIRY SCHOOL.

During my very pleasant visit at the
Kingston Dairy School in 1897, I had
the pleasure of escorting a prominent
and wide-awake farmer of Addington
County, Ont., through the establish-
ment.

He spoke in the highest praise of
the information obtained, and he re-
gretted that every cattle owner in
Canada did not know of the good work
being done in the Dairy Schools.

He said "If the farmers only knew
of the good work being done for the
great dairy interest of Canada by our
Dairy Schools. That, then they would
never complain of the taxation."

The tax per person in running the
Dairy Schools of Canada is less than
one-half a mill each for every farmer,
that is, one-twentieth of a cent each
for a full year.

THE FARM SEPARATOR PLAN THE SALVATION OF THE DAIRY FARMER.

Mr. Thomas Shaw, of Minnesota, is
writing a series of articles for our
esteemed contemporary, the Breeders'
Gazette, on the "Dual Purpose Cow."
In these he claims advantage for this
special kind of cow for use on the
ordinary dairy farms. Summing up
some of the ways in which he can be
made most profitable, he says regard-
ing the separator on the farm. "The
rightful place of the dual purpose
cow is on the farm and there also her
milk should be kept. The straight
dairyman may be able to send his
milk to the factory or the creamery,
since his steer calves are lying side by
side like brothers in their little graves
and his pigs, especially the older ones,
may not squeal in protest if his milk
comes back from the creamery a little
sour. Not so the dual purpose calf.
It would be nothing short of a crime
to feed such an animal on sour milk
returned from the creamery. How
shall it be avoided? Why, by separa-
ting it on the farm. That is to be
the solution of the skim milk question.
With the dual purpose cow on the
farm, the separator to cream the milk,
the calf and pig to feast upon it while
warm, a harvest coming on for cream
every month in the year, a second
harvest coming on for beef every year
and a third one for pork, there would
be but little chance for the sound of
hard times to be heard knocking at
the door. The fertility of the farms
would be maintained and diversified
farming would not any longer be a
dream in the West, but a blessed
reality."

Prof. J. W. Hart will take charge of
the Kingston Dairy School on the 1st
of November.

Prof. J. A. Ruddle and family start-
ed for Wellington, New Zealand, on the
13th of Oct., where Mr. Ruddle's ser-
vices will be used in the Dairy Depart-
ment of Agriculture.

FEEDING PIGS.

Extract From Report of Commissioner
of Agriculture.

It is impossible to raise swine suc-
cessfully in large numbers without
giving them skim-milk or butter-milk,
or a good run of clover pasture when
the young pigs are growing. During
the winter time a quantity of clover
hay, cut, steamed and soaked for
three hours, is an admirable addition
to the feed of growing swine. Where
pigs are put in pens and fed on grain
only from the time they are weaned,
a large proportion of them will be-
come sick and go off their feet before
they are fully fattened.

Hogs should never be given more feed
at one time than they will eat clean,
and all have an appetite for more.
Overfeeding keeps the logs from be-
ing active in taking exercise; and
that causes them to grow too fat and
soft. It is a good plan to feed as
much as they will consume and digest
hungry for every meal. Experi-
enced feeders claim that regularity in
the time of feeding will cause more

rapid gain in weight than when there
is irregularity even to the extent of
one hour in the meal time.

The feed of swine should be reason-
ably clean. It should certainly never
be in a putrid condition.

WARRINGTONS ASSIGNMENT

The Liabilities Will Be in the Neigh-
borhood of \$100,000—Butter and
Cheese Men Surprised.

Montreal, Oct. 31.—Two demands of
assignment have been filed against
Messrs. J. C. and G. D. Warrington,
by G. L. McLean, St. Romont, Ont., and
A. J. Brice, creditors, to the extent
of \$8,400 and \$215 respectively. When
seen this morning Mr. J. C. Warring-
ton would not say anything in regard
to the matter except that he was going
to consent to an assignment. Up
to the time of going to press, however,
no official abandonment had been
made. The firm's liabilities are vari-
ously estimated at from \$50,000 to
\$100,000, with assets to a large
amount. Unsatisfactory returns from
the English market relatively higher
is given as the reason for the firm's
embarrassment. The firm is one of
the largest in the trade, and shipped
an immense amount of cheese this
season.

Findlay A. Morgan, Hallowell, Ont.,
has entered proceedings to recover pos-
session of a quantity of cheese, value
\$4,684, sold by him within the past
thirty days to Messrs. J. C. & G. D.
Warrington, and now in the Goddard
storage warehouse.

GLAD HE FAILED.

Cheese Merchants Here Pleased at the
Collapse of J. C. Warrington.

The cheese merchants in this city
received the news of the failure of Mr.
J. C. Warrington of Montreal, this
morning, with a shout of glee.

The market, they say, has been up-
set by the operations of this merchant,
who seems to have been trying to
corner the market, has put up the
prices here; and so disarranged trade
that through the English market would
only warrant a commission merchant
buying here at 7 3/4 cents, he is com-
pelled to pay 9 1/4 cents. Last year the
market was run up to ten cents, broke
suddenly and fell to seven. These
operations have made English buyers
suspicious of the Canadian trade, and
the failure of the chief instigator of
them is not a cause of grief with the
local trade at least.—Toronto Star.

DAIRY POINTERS.

Illinois Dairy Report.

If the butter is mottled work it a
little after salting.
If the butter is too soft feed the
cow some potatoes.

Stringy milk can be cured by keep-
ing the cows clean.

Wash all milk vessels with cold
water before scalding.

White-washed stables mean fewer
flies and more milk.

Crosses are usually better for farm-
ers than pure breeds.

Whenever possible test the cow's
milk before buying her.

A cow that tests below 8 per cent
is not worth keeping.

Cows and horses should not be al-
lowed in the same pasture.

Richer food does not mean richer
milk; it means more milk.

Many dairymen like an ounce of salt
to the pound of butter.

Do not wet your hands when milk-
ing; if you do you flavor the milk.

You waste 25 per cent of your but-
ter in summer by not using a separa-
tor.

Adding hot water to cream while
churning is the worst of all practices.

Heating milk to 160 degrees Pasteur-
izes it. Stir it continually while hot.

When butter is poor don't blame the
cow. Blame your own want of skill.

If the butter takes too long to come
and one to two fresh cows to the
dairy.

A little kerosene will keep away the
lice from cows. Use it very
sparingly.

Warm milk from the cow does not
absorb odors. While cooling keep it
in a pure atmosphere.

BUTTERMILK FOR SWINE.

Buttermilk, if handled properly, is
one of the very best feeds for swine.
The wild lacto acid at churning time,
or shortly after, probably improves
buttermilk as a feed for pigs, for only
a little of the sugar is broken up to
form the acid. The lactic acid in
the milk renders it palatable, and
seems to have a favorable action on
the digestive tract. Since buttermilk
is rich in protein, corn is a supplemen-
tary food, and probably the most eco-
nomical substance to feed with it.
Shorts of middlings are likewise sat-
isfactory, but hardly as economical.
Since these two are rich in protein,
the feeder is supplying rather too
much of that costly element for the
most economical returns. Bran is
bulky, chaff-like food that is not sat-
isfactory for young pigs, but which
may be used with other animals, es-
pecially where the feed is not heavy
and it is desirable to give volume to
the feed. In some cases buttermilk is
held in filthy vessels at the creameries,
and in those cases it is worse at the farm.
When this product undergoes a pro-
tracted fermentation, it should not be
used even for a pig-feeding.

W. A. HENRY.

He is the New Superintendent of the
Dairy School.

The Governors of the School of Min-
ing and Agriculture nominated J. W.
Hart, of Clemson College, S.C., for su-
perintendent of the Dairy School, to
fill the vacancy caused by the resig-
nation of Mr. Ruddle, and the Ontario
Government has appointed him to the
position.

Mr. Hart is a Canadian and a gradu-
ate of the Ontario Agricultural Col-
lege. After leaving the college he
took up butter-making, and was em-
ployed for a time at the college cream-
ery. From there he went to Alabama
to fill a position at an experiment sta-
tion.

Returning to Canada in 1891 he was
engaged for a year or two on Dairy
Commissioner Robertson's staff, which
position he resigned to accept the one
he has held ever since as Dairy In-
structor at Clemson College, S.C. Mr.
Hart has a wide experience and a
splendid training for the position he
is now called upon to fill.

Prof. Hart assumed his new duties
on Nov. 1st.

The City Hotel

Most central house in Kingston,
Ont.

Three minutes walk—or electric cars
from the door of the Hotel to the
Kingston Dairy School.

Large and commodious reading
rooms and offices—entirely separate
from the bar.

A comfortable, homelike Hotel
with written bill of fare, (each meal)—

Open night and day, on the arrival
of all trains or boats—situated on the
fashionable promenade.

Rates for each week, month or sea-
son during the winter months very
reasonable.

Correspondence in regard to rooms
and solicited.

Especially adapted to the needs of
Dairy Students, Dairy Men, Cheese-
Makers, etc.

J. S. RANDOLPH,

Proprietor.

How to **Bicycle-Fred**
GET A

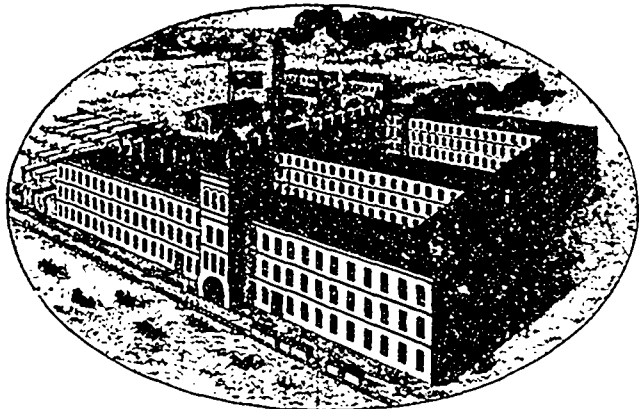
The Chemical Supply Co. of Pictou,
Ontario, are giving away brand new
regular \$35.00 Ladies' or Gents' Bicy-
cles Free to advertise their celebrated
Dr. Young's Kidney and Liver Cure.
Any bright boy or girl, get one
of these handsome wheels by dis-
tributing advertising matter, etc.,
for the Company during their spare
time. Full particulars and how free
to any one can apply to
The Chemical Supply Co.,
Box 326, Pictou, Ontario, Canada

"McLAUGHLIN Carriages are Good Carriages."

Our Goods have been on the Canadian market for 30 years, and the above is the universal verdict of the Canadian Public. Building Vehicles is no experiment with us.

We are making 2100 Cutters and Sleighs for this Winter's Use. They are made for and bought by the best trade only. Insist on getting a "McLaughlin Cutter" and you will get the best. Catalogue free. We have an agent near you.

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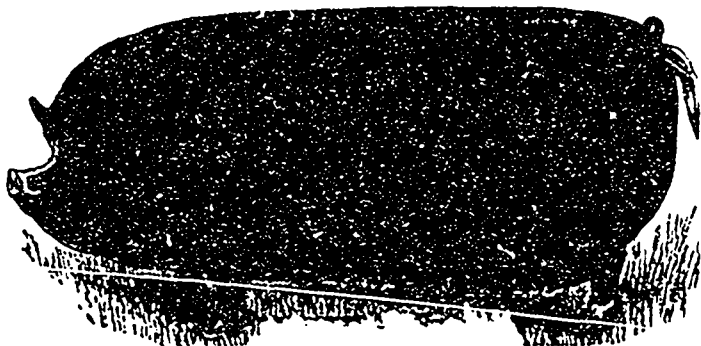


We build
nothing
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Honest
Reliable
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Strictly
Up-to-
Date
Vehicles.

The McLAUGHLIN CARRIAGE CO., OSHAWA, ONT.

83 Varieties of Vehicles but, "One Grade Only and that the Best."

THE STANDARD HOG.



Up-To-Date Berkshires.

Thirty young pigs of different ages for sale. Can supply pairs not related, bred from aged sows, weighing from 400 to 600 lbs. Have in herd pigs bred by such breeders as Russell Swanwick and N. Benjafield England. Write your wants.

W. J. SHIBLY, Harrowsmith, Ont.

A WEATHER-BEATEN BARN



is no credit to the owner—it is sure to be a source of expense. A coat of The S.-W. Creosote Paint, costing but little, will add several years to the life of the barn. The leaks will stop, your hay will not be musty and your stock will be in better condition.

THE SHERWIN-WILLIAMS CREOSOTE PAINT

is made especially for buildings built of open-grain lumber. It makes the wood proof against sunshine or storm and keeps it from decaying. The nails hold stronger and longer—the building shows the difference in a hundred different ways.

You can learn many important secrets about paint and painting by reading our illustrated book. It is free to all who have anything to paint.

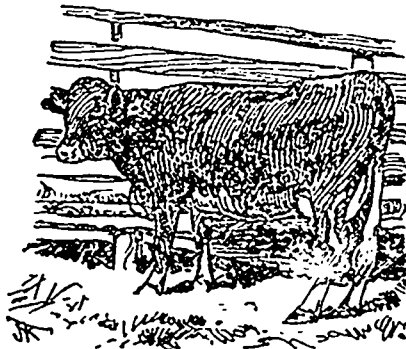
THE SHERWIN-WILLIAMS CO., PAINT AND COLOR MAKERS.
109 Canal St., Cleveland. 327 Washington St., New York.
325 Stewart Ave., Chicago. 31 St. Antoine St., Montreal.



BETTER COWS.

The Best Way to Get Them Is to Breed Them.

"The pain in the pocket," which comes from low prices of dairy products is a good thing, says Hoard's Dairyman, if it will make some of these easy, indifferent, unthinking cowkeepers wake up. Such men are naturally lazy, and it takes a right sharp twinge of that pocket pain to make them think or act upon their thinking. But the question at the head of this article is constantly staring them in the face. They must almost rob their family of every comfort, if they



COLORADO BRED JERSEY LADY WASHINGTON, come out even with the cows they now have. What show is there for a man trying to make money with cows that will not yield over 150 pounds of butter a year, and that butter worth only 15 cents a pound, after the cost of making is taken out at the creamery? If he makes up his own butter, he is no better off, for he loses in price what he saves in cost of making.

Thousands of farmers are looking this question in the face, "How shall we get better cows?" There is just one way, and only one way we can answer this question with success and profit to ourselves. We must breed them. And to breed better cows we must breed from dairy blood. We cannot hope to make better cows by breeding from beef blood or "general purpose" blood or scrub blood. There are no better milk returns in bulls of that sort. If we want to go to any place, we must face that way.

The sooner these cowkeepers, with poor, unprofitable cows face toward a registered bull of some one of the four dairy breeds, the quicker will this "pain in the pocket" subside. As it is, they are wasting the years of life as they go by in a vain endeavor to get something out of nothing, trying to get good cows by breeding to scrub bulls. No man on earth ever saw improvement come in this way.

There are many dairy people who are breeding better cows, conspicuous among whom is Mrs. M. S. Lockwood of Longmont, Colo. One of her favorite animals is Lady Washington, a Colorado Jersey, now 8 years old, and it is claimed by the Denver Field and Farm that she made 21 pounds of butter in seven days when in her 2-year-old form. She has the necessary machinery for working up large quantities of feed—a strong jaw and a big barrel—and her general outline shows that she will probably turn what remains after satisfying the demands for maintenance into milk rather than meat or body fat. Evidently she has not a beef temperament, neither does she come up to Professor Shaw's standard for a dual purpose cow. She has the upcurving flank, the thin incurving shigh and the rising pelvic arch. There are prominent milk veins and a well formed, but not large udder.

GROWTH OF CANADIAN DAIRYING.

Returns prepared by Mr Geo Johnston, Dominion Statistician, Ottawa, show that there are in Canada 539 creameries, 2,556 cheese factories, and 203 factories producing both butter and cheese. The census of 1871 showed that there were in the Dominion then 353 cheese factories. The census of 1891 gave 709 cheese factories, that of 1891 gave 1,565, and the returns of 1897-98 show that, including the 203, there are 2,739 factories producing cheese. Comparing 1897 with 1871, the return of the number of factories does not show all the development there has been. The average output of 1891 was valued at \$6,250 per factory, and in 1871 it was \$1,570. The average value per factory for 1871-99 Mr Johnston estimates at \$5,570, or about 1,000 more than in 1871, but \$690 less than in 1891, giving an output in 1897 of about \$15,800,000, against an output in 1871 of \$9,780,000, in 1881, of \$5,460,000, and in 1871, of \$1,600,000. In 1871 the Dominion had no creameries for the manufacture of butter. It was all home-made. By 1881 there were 46 creameries in the Dominion, all but one in Ontario and Quebec. By 1891 these had increased to 170, and by 1898 there were 539 creameries. In 1891 the output per factory was \$5,400. At the same rate the output in 1897-98 would be about \$3,018,600, an increase of over \$2,000,000. Since 1891 Nova Scotia has increased the number of its creameries and cheese-factories from 10 to 56, Ontario from 63 to 1,317; Prince Edward Island, from 4 to 35; Manitoba, from 31 to 66, the Northwest Territories, from 7 to 32, and British Columbia, from 1 to 4.

POWER ON THE FARM.

Plenty of power at all times enables the farmer to make more money and easier. The wind mill was a great improvement over the old fashioned horse powers, but the wind don't blow all the time. A prominent M.P.P. in Western Ontario said the other day: "I have been wanting to grind for the last four weeks, and we have never had a wind that would run the grinder except on Sunday. The Northey Gasoline Engine is rapidly taking the place of the best wind-mill. It runs wherever you want it; the working expenses are light. It is sold on very reasonable terms."

TO CURE PAINS IN THE FEET OCCASIONED BY WALKING OR STANDING

Put your feet into warm salt and water mixed in the proportion of two large handfuls of salt to a gallon of water, keep your feet and ankles in the water until it begins to feel cool, rubbing them well with your hands; then wipe them dry and rub them long and hard with a coarse towel. Go through the same practice every night.

Mr James Alexander, one of our chief dairy produce exporters in the course of an address to the Brockville Cheese Board, on Thursday, Oct. 11, 1898, advocated the centralization of cheese factories and the abolition of Montreal inspection. He was convinced that the proper place to accept or reject the cheese and pay for them was at the factory or car door.

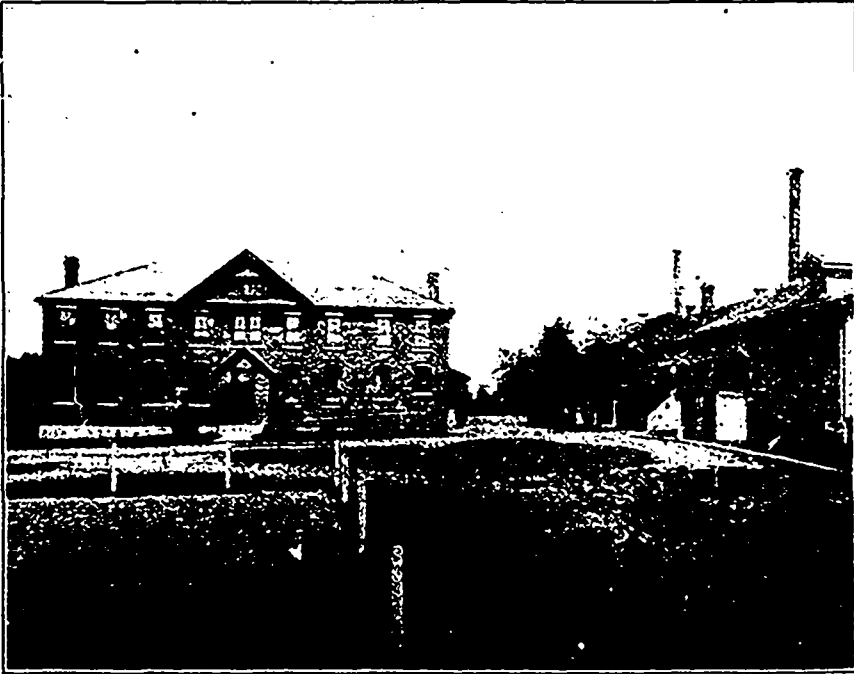
The Toronto Weekly Sun hints that there is a combination of packers to pay artificially low prices for hogs in Canada while profiting by naturally high prices for Canadian bacon in England. If this is so, then the farmers should establish in all the centres of the Dominion co-operative packing houses, and thus secure for themselves the advantages of the advanced prices abroad.

Andrewsville, Ont., Sept 18 1898.
J O. Luigenfelter, Esq., Editor and Publisher, C. C. & B. M. Luigenfelter, Ont.
Dear Sir, - I firmly believe that your publication should be in the hands of every dairyman and cheese-maker, and will do all I can to make your venture a success.
Yours sincerely,
W. F. McMAHON.

Ontario Agricultural College, Guelph.

Announcement of Dairy Courses for 1899.

Session Begins January 4th and Closes March 24th.



Dairy Buildings.

JAMES MILLS, M.A., LL.D., President.
H. H. DEAN, B. S. A., Professor of Dairy Husbandry.

INSTRUCTORS.

Cheese Making—T. B. MILLAR; R. W. STRATTON, Assistant.
Cream Separators—MARK SPRAGUE.
Butter-making—T. C. ROGERS.
Milk-testing—J. W. MITCHELL, B. A.
Home Dairy—J. H. FINDLAY; MISS LAURA ROSE, Lady Instructor.

FACTORY COURSE.

Students taking the factory course are advised to spend at least one season in a cheese or butter factory before entering upon this course. The class receives a good training in the making of cheese, the running of cream separators, churning, working and preparing butter for market, together with a thorough drill in the use of the Babcock tester, lactometer, and oil-test churn, yet we do not consider students who have had no factory experience competent to manage factories or creameries on completing the course.

During the course, an hour a week is devoted to the practical judging and handling of dairy cows and the study of the different breeds of dairy cattle, specimens of which are kept in the dairy stable.

Experts are brought to the School from time to time to give lessons in the judging of cheese and butter. This is a training which nearly all cheese and butter makers need.

Discussions on practical dairy topics led by one of the instructors are held four afternoons each week. These last one hour and are of much value to both students and instructors.

HOME DAIRY COURSE.

While we recognize the fact that the manufacture of cheese and butter must be confined largely to the co-operative or factory system in order to attain the highest success, yet we are met with the fact that much butter and some cheese are made and will continue to be made in farm

dairies. In order to have the quality of dairy butter the best possible, farmers' wives, daughters, and sons need some practical hints and special training along this line. These may be received in the Home Dairy Course at very small expense. The lady instructor will be continued in 1899. During 1898, nineteen ladies attended the Course, six of whom passed the final examinations. In addition to the dairy training, Home Dairy students will have the advantage of special instruction and lectures in the Poultry Department, where all the leading breeds of poultry are kept. Dairying and Poultry are two branches specially suited to the tastes and aptitudes of ladies.

This course is free to ladies, (except the cost of railway fare and board) and we trust that a number will avail themselves of it. Students may enter for this course at any time after January 3rd and may remain for one week, one month, or during the full term of twelve weeks.

LECTURES.

PROFESSOR OF DAIRYING.—Thirty lectures on dairy science; Dairy farming, stock-selection, breeding, feeding, care and management; milk, cream, butter and cheese; the making and marketing of dairy products.

AGRICULTURIST.—Three lectures on general agriculture in relation to dairying.

PROFESSOR OF VETERINARY SCIENCE.—Three lectures on the diseases and treatment of dairy stock.

PROFESSOR OF BIOLOGY.—Three lectures—one each on geology, botany, and entomology.

PROFESSOR OF CHEMISTRY.—Four lectures on the principles of chemistry and their relation to dairying.

BACTERIOLOGIST.—Six lectures on bacteria and their relation to dairying.

MR. MITCHELL, instructor in milk-testing, will give eight lectures on mathematics and book-keeping as required in the dairy.

FARM SUPERINTENDENT.—Two lectures on the cultivation of the soil and the feeding of stock.

EXPERIMENTALIST.—Two lectures on the best varieties of grains, grasses, corn, clovers, etc., as demonstrated on the experimental plots and in reports of farmers from all parts of Ontario.

HORTICULTURIST.—Two lectures on the factoryman's fruit garden, and how to beautify the surroundings of factory and creamery.

POULTRY MANAGER.—Two lectures on the most profitable breeds of poultry and their management.

Roll-call at 8.30 a.m. each day, when students are expected to be present unless sick or excused. Lectures begin immediately after roll-call and continue until 9.30 a.m., after which practical work commences in the different departments.

A Library of reference books on dairying is kept for the free use of students, together with all the leading dairy and agricultural journals.

CERTIFICATES AND DIPLOMAS

Certificates of standing will be given to those who pass all prescribed, written and practical examinations during the course, provided they have had at least six months' experience in a cheese factory or creamery. Certificates will be withheld from those who have had no factory training before taking the course, until they have had the necessary six months' experience. Special cases may be dealt with by the Staff.

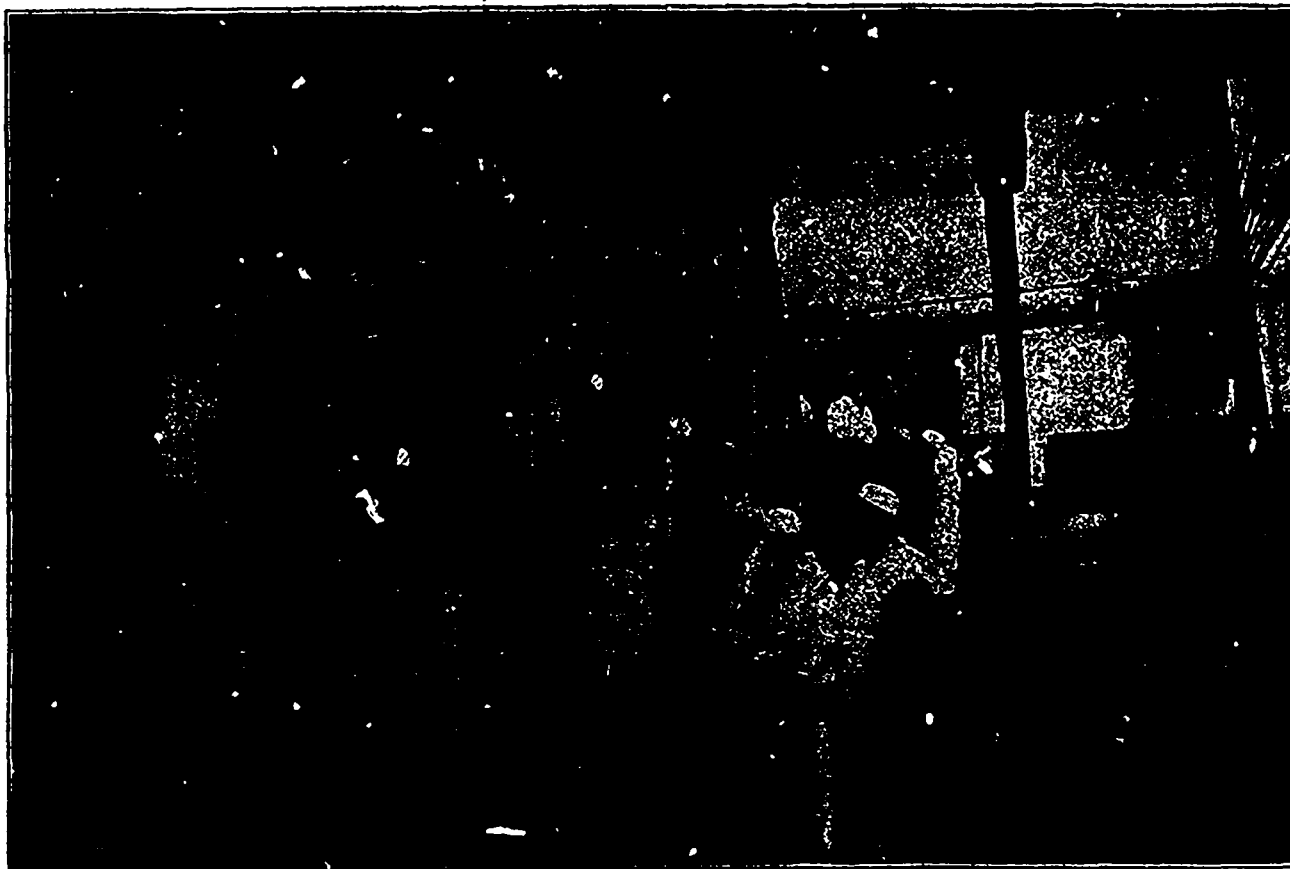
Home Dairy certificates will be granted to those who pass the necessary examinations.

The standard for passing is 40 per cent.; for second-class honors, 60 per cent.; and for first-class honors, 75 per cent.

Students wishing to do special work in one department have the following options:—



Making Cheese.



Making Butter.

1. Milk-testing and Butter-making, including cream separators.

2. Milk-testing and Cheese-making. Certificates will be given to those who pass the necessary examinations in these departments.

To any one who holds a certificate of standing, a Diploma in Butter-making, Cheese-making, or both, will be granted when he has proved his ability to manage a cheese or butter factory—

1. By at least two years' experience as manager, one of which must be after taking the Dairy Course.

2. By sending monthly factory reports during the season to the Professor of Dairy Husbandry.

3. By passing a satisfactory inspection as to cleanliness, tidiness and quality of goods made by him during the season.

TERMS OF ADMISSION, COST, ETC.

NO ENTRANCE EXAMINATION IS REQUIRED.

TUITION.—Free to residents of Ontario; to non-residents \$3 for the

Course. A registration fee of \$1 in advance will be required of all students, except ladies, in the Home Dairy Course. The latter will be admitted free. A deposit of \$1 to cover possible fines and breakages will also be required. This will be refunded when the student leaves if no breakage or fines are charged against him.

Board and lodging can be obtained in Guelph (1½ miles distant, but connected with the College by electric railway), or near the school at from \$2.50 to \$3.00 per week. The total cost of the course need not exceed \$40 to \$50.

WORKING CLOTHES.—Each student must provide two white suits for working in the dairy. These cost from \$1 to \$2 per suit in Guelph. These suits must be kept clean throughout the session. Lady students should provide a suitable dress and apron for working in—material that will wash and look clean.

It is expected that students will conduct themselves in a gentlemanly manner at all times. Noisy or boisterous conduct in any of the dairy buildings will not be allowed. The use of tobacco in or about the buildings is prohibited.

Applications for admission should be addressed to the President of the College.

Candidates whose applications are accepted will be expected on the first day of the session. All students will be required to attend the lectures and practical work regularly and punctually while they remain at the School.

For further information apply to
H. H. DEAN, B.S.A.,
Professor of Dairy Husbandry,
ONTARIO AGRICULTURAL COLLEGE,
Guelph, July, 1908.

IMPORTANT TO CHEESE AND BUTTER MAKERS.

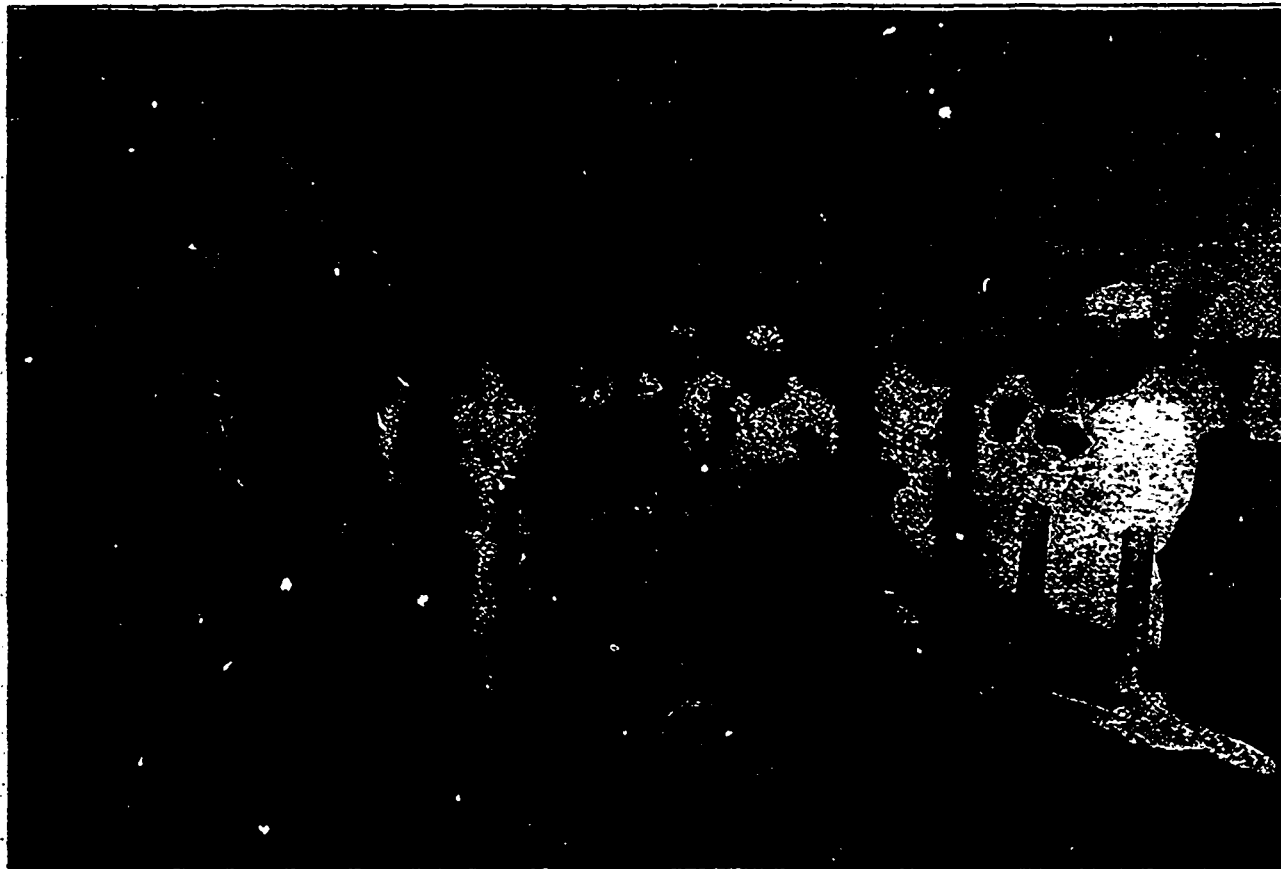
AN OPEN LETTER SHOWING THE ADVANTAGES OF CANADIAN DAIRY SCHOOLS BY A DAIRY STUDENT.

The purpose of our dairy schools is to impart practical and theoretical knowledge on all subjects pertaining to dairy work.

Our colleges from time to time have introduced important methods, thus gradually supplanting imperfect and obsolete practices.

The abolishing of antiquated ideas added an impetuous and marked improvement in our Canadian cheese and butter in the teeth of keen and rapidly increasing competition through the medium of our dairy schools. Much of this progress was undoubtedly due, though some older makers deny this.

But we cannot afford to pay much attention to a few dissenting voices.



Testing Milk.

while the great majority of makers have seen and recognized the valuable work done by these important and magnificently equipped institutions.

It is interesting to note how year after year numerous factories have successfully imitated these schools in many respects, more particularly in cleanliness and more thorough and complete equipment.

This will be more generally appreciated when we call to our remembrance the inadequate condition of some factories in former years.

Even apart from the scheduled routine of daily work, there are advantages to be gained, for instance, the meeting of students and exchange of ideas is productive of much good.

When we consider the comparative location of makers during the summer, we will more readily understand the facilities the schools offer.

The maker has not much opportunity when engaged at work for intercourse with his fellow workers. So the schools unite, and, without question, in this way are beneficial to the student.

The different courses are so highly instructive, and are based on such eminently essential facts that cannot fail to interest or elevate the butter or cheese maker, who comes with the intention of learning and paying strict attention to lectures and general work.

From personal observation at the various schools devoted to this class of work, I can only believe the maker who wishes to be successful and stand prominent in his work cannot afford without irreparable loss to absent himself from these dairy schools.

As the lectures and general instruction attain to a high efficiency which would be difficult to eclipse, the fees are strictly nominal. In fact, there is no legitimate reason why these colleges are not more largely attended, when we pause and consider the great benefits which are derived from them. But as makers become more conversant with these methods, no doubt makers will avail themselves of this excellent opportunity for advancement.

The short sojourn in the city during courses will provide profit, both from an intellectual point of view, as the makers will have every opportunity for improvement in all the important topics of the day, political, religious, and financial questions, interesting to all.

But all have not the faculty for this thought and cultivation, unfortunately. The butter and cheese maker should grasp the opportunity and profit accordingly.

The general status and social surroundings of our schools are in a thoroughly satisfactory condition.

In speaking of the ability and general proficiency of the staff, they are masters of their professions, and will be found eminently practical and thoroughly versed in all branches of dairy work.

From my own experience and experience of fellow students, I can bear testimony to the unflinching zeal and continual courtesy and desire at all times to assist the makers in all points. In fact there is nothing to criticize in the staff of appointment of these schools.

I would like to draw attention to an admirable dairy paper just issued. This is an excellent production, and will be a valuable acquisition to all butter and cheesemakers. This paper is entitled, "The Canadian Cheese and Buttermaker." This journal can be confidently recommended. Papers of this kind will accelerate the industry.

R. C. B.

A. E. ANDERSON, ON BUTTER-MAKING.

What constitutes the requirement of a successful and up-to-date buttermaker? This question is no doubt difficult to answer. It may also admit of many answers. Yet there are a number of general characteristics requisite to the makeup of every successful buttermaker. I will consider a few of these characteristics.

Physically considered, every buttermaker should be of a robust constitution, rather of a muscular build, and possess such physical developments as to enable him to pass the muster roll

of an army. He should weigh say from 150 to 200 lbs. and be sound throughout. The creamery work which is on damp floors, in steamy rooms and in chilly coolers is such as to preclude all persons predisposed to ill health. Persons at all inclined to be sick had better seek other and healthier fields of labor. Those of agility are also better suited to move among swift running machinery and fast flying belts, than are those of less nimble movements. In fact none but those physically perfect should have charge of creameries.

Educationally considered, an up-to-date buttermaker needs to have more than the bare rudiments of schooling. I do not mean by this that he must spend years in high school or academy, for many of our best educated men are those whose education are obtained from the world's great school of life, from contact with men of affairs every day rather than from teachers within the four walls of a school house, but I mean that he should be a fairly good scholar, he should be able to figure rapidly and correctly, to understand the English language sufficiently so as to write a good letter with correctness and dispatch, be well enough versed in history and geography so as to converse intelligently and fluently, and to have formed a taste for literature enough so as to keep posted on the current affairs of the day.

We will consider this sufficient for a buttermaker's general education. But there is a certain amount of technical schooling needed. It matters not where or how he gets it, but get it he must in order to be abreast with those of the craft who are up-to-date and are able to step in and take charge of a modern creamery at a moment's notice.

He must be able to take the place of an engineer. He should know the philosophy of steam and its effect on the boiler, be able to take apart and put together his engine, steam pump, inspirator or any other part of stationary or moving machinery in his creamery. He is called upon to operate some of the most delicate and rapid running machinery in existence. He is called upon to tell which coal mine in the United States produces the fuel most suitable for the production of steam at the least cost per 1,000 lbs. of milk skimmed. He must know the composition of milk and its bacteriological changes, must be able to analyze both butter and cream, and tell how much water there is in one and how much desirable or undesirable flavor producing microbes in the other.

He has to be well versed in chemistry, both general and special, for he must not know the constituent elements of his cream but he must know the proper per cent. of acid his cream should have before he retires at night, as well as the proper per cent. before he starts the churn in the morning. He must know the specific gravity of his testing acid. If it is too weak or too strong his oil test is incorrect. No small amount of skill is required to operate the Babcock test and do it right. Aside from the requisite information needed in these special branches of chemistry, and bacteriology every buttermaker is required to have his five physical senses especially trained to do his work with agility and despatch.

He must be able to tell by the hum of the separator when it is up to speed or when a stretched belt has slackened its motion, or he must be able to tell by the flop of the churn when his cream commences to break and when the butter begins to gather in granular forms.

His eyes must detect quickly and accurately the amount of water in the boiler or the pressure of steam on the gauge. The patrons milk as indicated on the scale beam must be set down opposite each one's name quickly and correctly, and his oil test must be taken, read and recorded with the most minute care and accuracy. His nose must forever stand guard against the influx of foul milk at the weigh can or against foul smelling odors from any other source.

The organs of taste need special training. I have had milk brought to my creamery that looked sweet and smelled sweet, but had to be rejected

because my taste revealed ingredients unfit for butter.

The sense of touch is perhaps the least used in creamery work, yet there are instances when it comes in timely play, as, for instance, when the temperature of the butter is high and that of the running water is low. The water chills the butter granules making them hard. The butter all looks alike in the churn, but your sense of touch will reveal part of the granules much harder than the rest of the butter.

I have mentioned only a few of the numerous requirements an up-to-date buttermaker must have. In fact we find that he is required to possess quite a liberal education, and to continually supply his library with books of recent authors in order to be in touch with the onward march of dairy science.

We find that the successful buttermaker must be a student. He must lay the foundation deep and solid for his life work just the same as other professional men if he aspires to any accomplishment. I knew that now and then one new in the profession and without any general or special training, crops up and makes a batch of butter that out scores the professionals, but it is not by one day's or one week's or one month's work that we are judged. It is the accumulated efforts of a lifetime that are summed up for or against us.

Therefore, I say boys, lay the foundation broad. Acquire a good supply of reserve force. Be diligent in season and out of season. Be not alarmed if some new comer outstrips you by some extempore exhibition. Remember that in our line as well as in all others this old Latin saw "Ex nihilo nihil fit" is ever true. The time will yet come when those buttermakers who are really students as well as laborers will have their reward. Remember that wealth whether "pecuniary or intellectual is hoarded labor," and that those who will not prepare for the conflict will be outstripped when the crisis comes.

A PRACTICAL EXPERIMENT IN REMOVING BARN YARD FLAVOR.

I proposed trying the removal of a bad barnyard flavor by a quick process, and I obtained excellent results. In taking in the milk, I discerned an old barnyard flavor.

The milk was set at 17 seconds. It lay in the whey one hour and fifty-two minutes.

It was dipped at 1-4 inch acid, hot iron test, and was stirred to attain a medium moisture.

Matted firm, then cut, when milled, it showed two inches of acid. With very bad flavor of old barnyard, mixed with a dash of peppermint.

I heated some pure matter 200 degrees Fahrenheit, then dashed this under the zinc, heating the curd gradually up to 100 degrees Fahrenheit, the curd was continually stirred by lifting the curd and dropping down, which naturally caused aeration.

At the end of two hours the bad flavor had totally disappeared, the curd well mellowed down, strong in body, and of excellent feeling.

This treatment having proved satisfactory, it was salted at the rate of 3 1-4 lbs. drained well, pressed gently, the day's work was over at 7 o'clock p.m.

Curd, with this same flavor, have detained makers up to 10 and 12 o'clock at night by what is known as washing, and covering with hot cloths. Yours,

CHEESEMAKER.

It should be remembered in all dairy-cow keeping that the maintenance ration for an inferior cow costs just as much as for one able to produce a large quantity of butter. It is, therefore, wise to keep only such animals as will respond well in yield of butter to the extra food given her over what her system requires. When one has a number of well bred, good producers, he can usually raise good daughters from them.—"Live Stock Exporter."

A woman's words are the milk and her meaning the cream which slowly comes to the surface.

Fruit & Ornamental Trees

700 ACRES
SHRUBS, ROSES, VINES AND
SEED POTATOES.

WE have the largest assortment and employ the very latest and most improved methods for propagating. All stock carefully packed under our personal supervision, and all new varieties tested at our trial farms before being catalogued. These are the only testing orchards connected with any Nursery in the Dominion.

Agents Wanted to Represent us.

Special attention given to Park, Cemetery and Boulevard orders. Estimates furnished for supplying entire orchards.

Why buy of middlemen when you can purchase as cheaply from us and get better value.

Our stock is Canadian grown and acclimated.

Catalogue (English or French) free on application.

STONE & WELLINGTON, TORONTO, ONT.

FONTHILL NURSERIES,

The Leading Canadian Tree Men.

PUREST AND BEST

Windsor Salt,

Is used by the leading Creameries and Cheese Factories, and is also used in the Government Experimental Stations and Dairy Schools in preference to any other brand.

FOR SALE BY ALL GROCERS.

The Windsor Salt Co., Limited,

WINDSOR, ONT.

PURE RED COLLIE PUPS FOR SALE.

From Sire and Dam imported direct from Portland, with Grand Pedigree. Don't pay \$25.00 when you can get better for half the money.

PHILLIP HART,

BELLEVILLE,

ONT.

When writing mention paper.

STEWART'S - TABLETS CORROSIVE SUBLIMATE.

Preserve Composite Milk Samples for Babcock Test.

Use one Tablet and test once in two weeks or four weeks as you wish.

Convenient, sure, economical, colored pink and eat no fat.

In boxes of 500, reduced to \$3.00 per 1,000.

W. J. STEWART,

Manufacturing Chemist and Manager Grimes Butter and Cheese Company, Or loading supply houses, GRIMES, IOWA.

STERILIZING SKIMMILK.

How Millions of Dollars Are Wasted Every Year.

In an article in The Creamery Journal John M. Larson says:

Why is it that the progressive creamery man and farmer in this great, rising dairy country of ours permit tremendous losses annually without the least attempt to stop them? "Where are those losses?" some may ask, because they don't think there can be any losses providing they get all the butter fat extracted and properly manufactured. They do not stop to think and reason what tremendous value the skim milk from all those thousands of creameries through the United States represents, providing it is properly handled and utilized. How much of the skim milk reaches the farmer's home in good, fresh condition, fitted to derive from it all its good qualities as a food product? There is, alas, but very little, if any, that reaches the farm in fair shape, most of it being sour by the time it reaches the farm and a great deal of it before getting that far. "Well, how will we remedy it?" some will ask. The farmer doesn't even bring his whole milk to the creamery in any too good shape.

"What shall we do to send back to each farmer good, pure skim milk?" the creamery men will ask. The best answer to that question is this, What does Denmark do? Go and do likewise. In Denmark they first preserve cleanliness, and next they pasteurize their skim milk, and have done so for 15 to 20 years. They do not think that any way of pasteurizing skim milk is good enough. No, they know better and think that only the best machine, no matter what the price is, is the only one to use, and therefore you will find that of all the machines used in a first class Danish creamery of good capacity the highest priced machine in the whole creamery (with the possible exception of their ice machine) is their skim milk pasteurizer and cooler. They pay more money for that purpose than they pay for a new separator.

Doesn't that show conclusively that they think the skim milk is worth preserving when they find it policy to pay more money for a machine to preserve the skim milk with than they pay for any other one machine in the factory? But there the farmers get milk back that is absolutely clean and sweet, so that they use it on their own tables and for cooking purposes. That very same milk is a fine food for calves, together with a little meal, and it will remain sweet several days. The farmer knows that such milk is of great value to him. The continued feeding of this milk would bring him in a good sum during the year, and he would have to quit the business if he was delivered such milk as the American farmer gets. The American creamery man deceives himself by saving a few hundred dollars in first cost and letting great values go to waste. The ones that first start to remedy this evil will be a blessing to the business and themselves. I hope soon to see the day when the creamery business will be run on thoroughly modern plans and leaks and wastes stopped.

Is Dairying Overdone?

The claim is made that with a constant increase in the number of creameries the supply must some time be greater than the demand. Creameries do not and will not injure the dairy industry. The creameries have been one of the greatest dairy educators in existence and have done more and are still doing more for the dairy industry than any other agency. Our creameries have made their own markets by supplying a superior article. They have raised the standard of our butter and are educating the people to appreciate a good arti-

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**PHILLIP HART,
BELLEVILLE,
ONT.**

When writing mention paper.

Oh, true, the creamery has injured the price of the average farm butter, and I do not think the time is far off when this low grade of farm butter will be crowded out of the markets entirely, and farmers who make 6 1/2 cent butter will be compelled to improve in their methods or shut up their greaseshops. Education is of slow growth, and it takes a long time to educate people to even know what is good, but a demand once established it is permanent. With all the inventive ingenuity of man, nothing has yet been found to take the place or fill the bill of good, honest cow butter, and I believe it to be the most effective weapon with which to fight all imitations and frauds. Through the influence and education of these creameries a place has been found and good markets established for millions of pounds of butter, and I have no fears but that our markets will expand with our supply for years to come. At least I never expect to see the time when dairy products will not be in demand at paying prices to the dairyman.—M. E. Fing in Ohio Farmer.

Feeding Apples to Cows.

We do not wonder that there is strong prejudice against allowing cows, and especially milk cows, to eat apples. For the most part it is well grounded. While it is possible to give a milking cow a few ripe apples without drying up her milk perceptibly, that is not the kind of apples she usually gets. If the cow is in an orchard where apples are falling, she runs every time she hears one drop and eats it greedily, however wormy, sour, green and bitter it may be. All apples have some malic acid in them, even including those that we call "sweet." This malic acid, together with the tannin that is found in the apple peel, and especially in green, small apples, contracts the cow's stomach. If she eats much of such fruit, it gives her the colic just as surely as it does the small boy. The cow's stomach wasn't made to digest such stuff, and so sure as it is put into her stomach there are riot and rebellion. Every one knows that giving vinegar to cows and rubbing her udder with vinegar will dry her off. We believe that allowing cows to eat many apples, even if they are ripe, has a bad effect on their milk production.—Boston Cultivator.

Creameries and Their Patrons.

Every creamery patron should keep constantly in mind the fact that the price he gets for his milk depends on the price the creamery man gets for the butter, and this in turn depends in a large measure on the condition in which the whole milk reaches the creamery, says Creamery Gazette. The best butter maker in the whole country will fail in making a strictly fancy grade of butter if the milk reaches him sour or tainted. All creameries are co-operative in fact whether they are in form or not. Success depends upon thorough co-operation between the patron and creamery man. The latter must provide improved machinery, experienced butter makers and exercise good business in marketing the product. The former must furnish first class milk. If either fails in his duty, both will suffer. When both tend to business, they both make money.

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CLAIMS to be the original combined machine, and the claim is not disputed. It has passed the experimental stage. Its invention marks a distinct epoch in the progress of the science of butter-making. It requires no more room than a box churn.

It is unnecessary to remove the butter from the churn until ready to pack for shipment.

It keeps the butter from becoming soft and salvy from exposure to the heat in warm weather.

It preserves the fine flavor of the butter and protects it from outside odors at a very sensitive period in the process of manufacture.

It churns more exhaustively than a box churn. Careful tests have proven this beyond doubt. The cream is agitated more evenly, because of the rolls and shelves inside of the churn. Closer churning means more butter.

It saves ice, for it preserves the temperature perfectly even, either in hot or cold weather.

It saves extra shafting, belting and pulleys necessary for a separate worker.

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(Continued from Page 39.)

early in the morning during the warm weather. The cheese remains at the factory from three to six weeks, when it is shipped by Messrs. Ballantyne, of Stratford, who inspect it and give instructions as to time and place to ship.

BOXING.

The cheese are weighed as taken from the shelves and placed in strong boxes made to fit the cheese snugly. Double scale boards are put on top and bottom, the lids fit well and are put on without nailing, the weight of cheese is stamped on the outside of box as well as the factory brand used by Messrs. Ballantyne & Bell.

THE BASIS OF VALUE

The patrons are paid by the quality of the milk as indicated by the Babcock test, to which is added two per cent., this being considered to indicate its cheese producing value. The test is made once a month. An ounce sample of each patron's milk is taken each morning as received and placed in a jar containing a little more bicarbonate of potash and corrosive sublimate than will lie on a ten cent piece. This keeps it in liquid form until the end of the month, when the test is made. The patrons receive monthly statements showing the pounds of milk, per cent. of fat with 2 per cent. added, average pounds of milk to pounds of cheese, average price of cheese, rate to patrons per pound fat, patrons' total proportion, cheese to patrons' cash to patrons, and balance due to patrons, which is paid by check. Mr. Bell receives \$1.85 per 100 pounds of cheese made, and the whey, which latter is fed at the factory, for this the milk is drawn, the cheese is made, insured and sold. Last year 140 tons of cheese was made at this factory, but is it not expected much over 120 tons will be reached this season. Last fall a butter plant was put in, and butter made from Nov. 1st to May 1st. The butter was made for 3 1/2 cents per lb. This was eminently satisfactory and many patrons regretted the commencement of cheesemaking, as they prized the skim milk, which was returned to them.

THE HOGS THAT GET THE WHEY.

As stated above, all the whey is fed at the factory, so that the cause of so much trouble in many factories—scurvy hogs near whey in the cans, thus tainting the next day's milk, is totally avoided. At the time of our visit about 400 hogs were being fed, most of which were of the Bacon type, and about a double dock carload was ready to ship. They are of all colors, in which pigs grow, and showed Berkshire, Tamworth, Yorkshire, Poland, China and Chester White breed type. They are a thrifty lot, and were being economically fed. They receive three drinks daily of sweet whey and two feeds of pea chop and bran, from 1-2 to 3-4 of a pound of each pig at each feed, mixed in the proportion of a ton of pea chop to 3-4 of a ton of bran. This is soaked in whey three hours before feeding, and is found to be the most satisfactory factory grain food obtainable. They are kept in airy pens about 10x10 feet, and eight or nine pigs in a pen. The piggery, which is situated some 600 or 700 feet northward of the factory, is kept clean and comfortable. Whenever a pig goes off his appetite or shows any indisposition he is turned outdoors for a day or two, which usually puts him right. They are grouped according to color, size and form, and whenever a lot tends to get too thick and fat they are turned out into the yard and their grain ration reduced. In this way the bacon form is adhered to and the proverbial "strip of lean" secured, the pigs going off when about eight months old at about 200 pounds each.

THE INSTITUTION AS A WHOLE.

is exceedingly well equipped and conducted in a manner worthy of emulation. There is little, if anything, unnecessary in any department, but what is needed is present, and in good form. We were informed that the price received for the output of this factory is usually from one-eighth to

a quarter of a cent above the market price, and that because of the uniformly high quality of the cheese. We saw bored a number of cheese of the same date, and of different dates, and the uniformity of those of the same age was remarkably pronounced. The ripe cheese possessed a mellowness or silkiness or sweetness of flavor that one seldom gets, even on the best Canadian or U. S. hotel tables. It is a fact to be lamented, that what is true of this factory does not characterize all our cheese factories, when it could be done. If patrons and makers would together strive after this high ideal. There is always an open and lively market, especially for food products, of the highest quality, but the lower food products are seriously handicapped by the enormity of competition with which they meet. No doubt the character of every factory is largely governed by its sort of management, which gives the Tavistock factory a lead over most others, as Mr. A. T. Bell is recognized as being one of the foremost in the cheese making industry. For several years he served as cheesemaking instructor in the Gaelic Dairy School, where he made a host of warm friends among the students at that institution.

A Swiss woman says: "Hard tack nicely browned over a slow fire, and served hot with melted cheese, is excellent." Pahaw! Why didn't our soldier boys think of that?—Richmond Times.

How Is Milk Secreted?

The manner in which milk is secreted in the udder is not yet definitely agreed upon. There are two theories put forth in explanation of the process. The first one, known as the "transudation theory," assumes a simple filtering of the constituents of the milk from the blood through the gland and an immediate conversion of these constituents into milk. The second theory, known as the "metamorphic," assumes that the milk is formed in the gland by the decomposition of the cells of that organ.

Professor Sheldon thinks that a combination of the two will probably give the most satisfactory explanation, and this is more apparent when we consider the sources of the various constituents of milk. Neither casein nor milk sugar is found in the blood, consequently they could not be filtered from it, but are probably the result of a special cell activity. Fat, though found in the blood, is not there in sufficient quantity to supply the fat of the milk. "The milk sugar, casein and fats are all formed by the direct activity of the epithelial cells as a result of the decomposition of their protoplasmic (first formed) contents or their action on the food constituents in the blood. The other constituents of the milk, the water and salts, evidently result from a direct process of transudation from the blood, with the exception that without doubt a certain percentage of the potassium salts and phosphates, like the specific milk constituents, originate in the metamorphosis (change) of the protoplasm (first matter) of the secretory cells."—Farmers' Gazette (Ireland).

Brewery Refuse Poor Food.

Some French physicians have been making inquiry into the influence upon children's health of milk obtained from cows which have been fed on brewers' grains. Deaths from digestive troubles were noted to have become more frequent among infants in a particular locality after the establishment of a large distillery. It is concluded that milk from cows fed on brewers' refuse is of highly acid character and is apt to produce indigestion in infants who are fed upon it. This appears to be a hint which should not be lost sight of by physicians, mothers and dairymen alike.—England Dairy.

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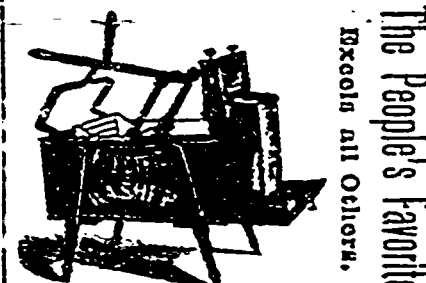
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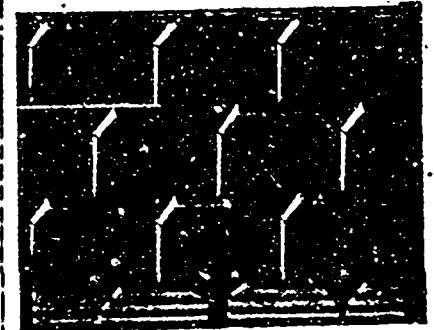
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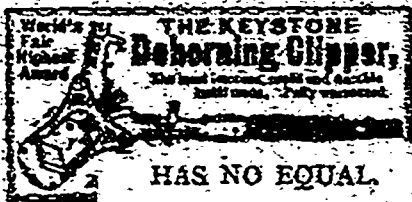
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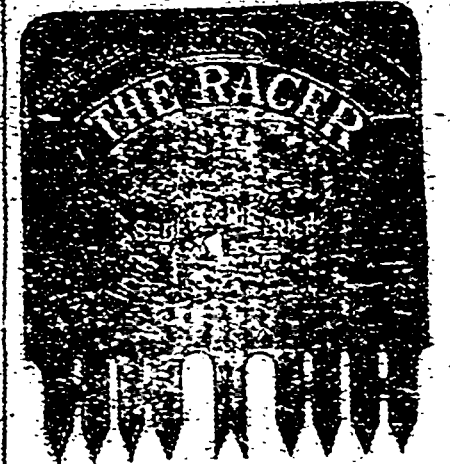
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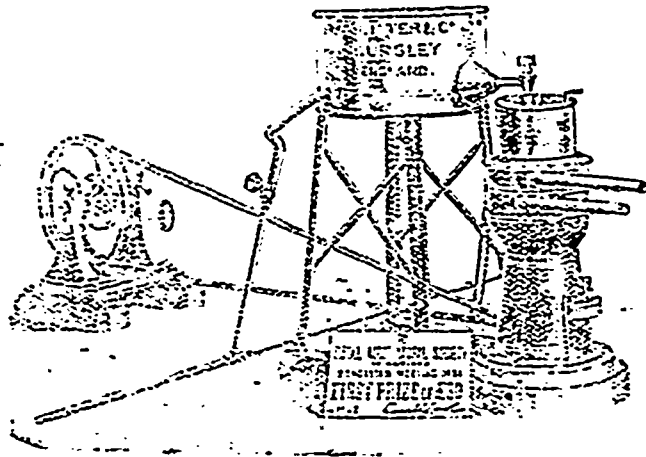
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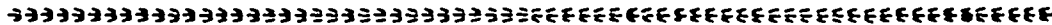
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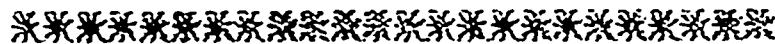
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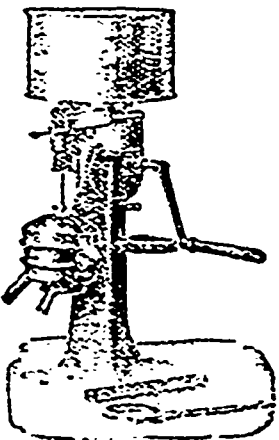


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