into the juglar vein of a
n eight days by the birth
he removal of the pregnant
ce does not always protect
n. Newly-born calves are
istance against infection
s better nourished by its
ght days of age the danger
ve passed.
ms appear in from a few
birth, seldom later. The
disease is diarrhoea. The
xpelled with considerable
vish color and usually foul
becomes whiter in color,
with blood. The patient
refuses to nurse, the eyes
e anus relaxes, the evacua-
tions occur without evi-
dent effort on the part
of the patient, coma
occurs soon followed by
death.

Diagnosis. — This in-
fectious diarrhoea differs
from sporadic diarrhoes
in young animals in the
fact that it seldom attacks
an animal over one week
old, induces a foul-smell-
ing, exhaustive, and ra-
pidly fatal diarrhoea, and
attacks many animals
born under similar condi-
tions. In diarrhoea or
scours due to dietetic
irregularities, older ani-
mals are attacked, the
general symptoms are
much less acute, the
faeces are thicker, more
yellowish and less fetid,
and the cases will usually
yield to medicinal treat-
ment.

Treatment. — Medi-
cinal treatment is seldom
effective. In most cases
it is profitable to kill the
affected animal and burn
after covering with quick
t consists in disinfect-
ternal genitals and hind
lam, before parturition, or
to non-infected quarters
nentioned, and also disin-
g as soon as possible after
fterwards until thoroughly
should be removed and
ed. All stable partitions,
be of earth it should be
east a foot and then filled
e thoroughly disinfected;
wed by a thorough coat of
ent. crude carbolic acid or
s. The afterbirths, dead
ges should be completely
e disinfected by thorough
soap and follow this with
ot ten per cent. solution
of crude carbolic acid, or
a five per cent. solution
of one of the coal-tar an-
tiseptics. To be doubly
sure, this last may be re-
peated or hot whitewash
applied as above.

The vagina of the
dam should be injected
with a warm two per
cent. solution of carbolic
acid, and the external
genitals, tail, buttocks,
and udder well washed
with a five per cent. solu-
tion of carbolic acid or
one of the coal-tar prepa-
rations. As soon as born
the navel of the foetus
should be dressed with a
strong antiseptic as tinc-
ture of iodine, a ten per
cent. solution of carbolic
acid or one of the coal-
tar antiseptics or a solu-
he writer prefers the latter
to a pint of water. This
or five times daily until
ursing is permitted, the
hed with a non-poisonous
olution of one of the coal-
oroughly dry or allowed
ursing is permitted. On
ease may be contracted
being conducted in the
fore conception. Also a
the germs that are sup-
nd used to increase the
nimal. The hypodermic
have also been tried, as
luce active immunity of
ting pregnant cows with
but the results have been

WHIP.

THE FARM.

The Rural Eight-Hour Day.

EDITOR "THE FARMER'S ADVOCATE":

Due largely to universal labor unrest, a movement has lately been instituted to establish an eight-hour day on the Ontario farm. Some people truly have greatness thrust upon them, but as this problem concerns solely the farmer and his hired man, we shall examine the question only from their points of view.

Farming, unlike the staple trades of the city, is an occupation in which the hired help, or skilled labor, usually have aspirations of some day personally conducting a similar business. With this idea constantly to the fore, the hired man is not so narrow-minded as to sign away his liklihood of future profits for the sake of temporary relaxation from a good day's work. However, in the majority of cases, the secret of rural labor disagreements is the inability of the employer to appreciate his employee's efforts, the sequel to which may readily be a demand for shorter hours, but not necessarily an eight-hour day.

Only the successful farmer realizes the true value of the twelve or fourteen-hour day to his chosen occupation. Many a practical man, by his practice of early rising, unremittingly terminates his eight-hour day at noon, and, still oblivious to the fact that he is defying trades union regulations, works another six or eight hours before his daily job is considered finished. It is rather a coincidence that the laurel of longevity of life and health blooms in the country. On the majority of our live stock farms, at least four hours per day, throughout the year, are necessarily spent in the execution of the chores. Would the remaining four hours of the eight-hour day suffice to properly operate the farm? How would the eight-hour day affect the harvest, when in this festive season, extra, voluntary toil from sunrise to twilight is an unwritten law? If this mercantile labor condition was forced on the farmer, the latter, to ensure sufficient help, especially in the busy seasons, might be forced to engage his men in consecutive shifts. As his profits would not greatly exceed those of previous years, he could not afford to recompense double the number of men at the old rate, thus lowering the rural wage scale, and stimulating the already serious exodus of farm help from the country to city life. Again, farming depends to such an extent on the weather, that this factor should be preserved as the labor gauge, and not the untimely ideas of labor cranks unfamiliar with true rural conditions.

In no other trade is home life so intimately allied and interwoven with the business as in farming. By forcing the eight-hour day on the farmer we commercialize the farm home, the stabilizing influence of the stable occupation of a stabilized Dominion. Such a course could not but help to greatly dampen Ontario's brightening prospects as the leading Province of one of the greatest agricultural countries.

Halton Co., Ont. R. D. SCOTT.

Expansion in the North.

EDITOR "THE FARMER'S ADVOCATE":

To those who have enjoyed the privilege and freedom and have had the opportunity of living in the north of this Province for a number of years, a great satisfaction comes as we realize that the present year has been one of the rapid growth and abounding progress. The North has made a gigantic step forward during the past few months from whatever angle we view her progress, whether it be agriculture, mining, forestry or education we see a big movement speeding forward which will make a mighty contribution to the wealth of the country.

The North has been for many years an integral part of the Province and the Dominion, but has received little acknowledgement of its vital contribution, but we hold that the output during the next few years, and last but not least the educational value will prove a mighty factor in helping to solve the industrial situation facing the Dominion in common with other countries.

The farmer for so long wrestling with nature and against pioneering conditions has obtained results this year which will encourage and induce to further activities. The exhibits at the Canadian National Exhibition this year comprising Dawson's Golden Chaff fall wheat, Marquis spring wheat, O. A. C. No. 3 oats, O. A. C. No. 21 barley, Common spring rye, Silver Hulled buckwheat, Prussian peas, Mammoth Russian sunflowers for silage purposes and fibre flax are all exhibits fully matured and of excellent quality.

Perhaps the greatest problem facing the North lies particularly in the sphere of education. The children of the North must be educated here through public school, high school and normal school, and under the same healthy conditions as are to be found in the South. The parents and children of the North have a right to the very best that the Province can give, and we appreciate the untiring efforts of Mr. Hanlan, Superintendent of the Monteith Demonstration Farm, and Dr. McDougall of North Bay, who with the co-operation of the Minister of Education are about to launch a rural educational scheme which will not only solve the problem of education here in the North but will be also an absolutely unique policy entirely new to the Province of Ontario. The writer has seen the educational scheme as submitted to the Department of Education, and it is one which reflects great credit to the authors. This policy will shortly be made known and, what is more desirable, will be in operation.

An educational centre for the North is imperative, agricultural conditions here call for a Northern Central Collegiate Institution, and we claim that the same is necessary for the training not only of the child but also of the teachers. The old stanza of poetry that "East is East and West is West and never the twain shall meet" does not hold; East and West and North and South will meet, and the day is rapidly coming when the North of this Province will meet the South and already has much to teach with a broadening influence on our Southern conservative brothers. Expansion is rapid. The greatest surprise has been evidenced by the members of the Ontario Teachers' Association, who on their recent visit have had a glimpse of the tremendous industrial activities and potentialities of the North, particularly in relation to their own department of education.

Timiskaming, Ont. C. P. HEAVEN.

THE DAIRY.

Increase in Herd Testing.

A matter that is not apparent to everyone, but which is nevertheless of great importance to the dairy industry of Canada, is the fact that the annual production of milk per cow is increasing. One is inclined to believe sometimes that the average dairyman is not improving his herd to any considerable extent, but there are undeniable evidences that a greater interest is being taken in the improvement of Canadian dairy cattle and that the yield per cow is steadily increasing. As an indication of this there is the fact that the number of farmers who are keeping records of the production of milk and fat of the animals of their herd is increasing. This is shown by the following statement made by the Dairy and Cold Storage Branch of the Dominion Department of Agriculture, Ottawa, and it should be noted in passing that if the number of dairymen who are testing their cows under Government supervision is increasing, those who are doing it of their own accord are bound to be increasing in numbers also.

"As was expected early this spring, there has been a big increase in the number of farmers who are keeping records of the production of milk and fat of each cow in their herd. In the month of June, 1919, there were 1,044 herds with 12,230 cows recorded under the scheme of cow testing as carried on and organized by the Dairy Branch; in June, 1920, 1,814 herds with 16,030 cows were recorded. This is an increase of nearly 75 per cent. in the number of herds and cows recorded. The largest increase is shown in the province of Quebec and is due to the hearty co-operation of the Provincial Department of Agriculture with the Dairy Branch in an extensive campaign among the farmers of Quebec to show them the value of individual records of each cow in the herd and to organize the work in that province. The decided success of the campaign is shown by the fact that the number of farmers keeping records in Quebec has been nearly trebled. However, the farmers in all the provinces are showing increased interest in this work and are realizing that the dairy cow must make a fair profit for her owner, and that the scales and Babcock test are the only fair means by which the production of each cow can be calculated."

Derivatives of Milk Casein.

BY H. W. BALDWIN.

The use of milk in the commercial world is something with which the average person is not familiar. That it plays an important part in our daily life, and is undoubtedly used in various forms each day, other than in its form and use as a food will prove a surprise to a great many. There is no question but that the use of milk as a food is its largest and most important use, but one of its constituents, namely, casein is manufactured into a great many products and used in a great variety of ways. Casein constitutes a little over three per cent. of normal milk, and is classed as one of the milk solids. The first of its many products is its use in the manufacture of paint, comprising over fifteen different kinds. There are interior and exterior paints, an enamel paint, wall paints, and paints for woodwork and iron. Then there is a boiled oil substitute, a calsomine wash, and a quick-drying paint. It is used in the manufacture of a paint which is dustless, washable, and has a disinfecting property which makes it valuable for use in hospitals especially, and in various other public buildings. It is also used in making a waterproof paint for playing cards, a cement paint, and a paint for marking bags, cases, iron barrels, etc.

Second is its use in many adhesives and putties. Here we have a liquid and a powdered glue, a glue for match making, and a waterproof glue. Also three or four different putties for use in stone and cement work, and for stopping joints and cracks in stone, wood and brick-work. Casein also finds extensive use in the textile industry. Here it is used as an adhesive which enables fabrics to absorb dyes, as a glaze for dressing other fabrics, as a waterproofing and softening dressing, and in a process for loading and sizing cloth. Another use of casein is its manufacture into many foodstuffs, comprising a number of different varieties. In this class is a casein food, a synthetic milk, a milk food, a baking preparation, and a phosphate for baking. Also an emulsifiable product, which when boiled with water gives a product closely resembling milk. In the paper industry casein is used in many valuable and extensive ways. Here it is used in making paper for transfer pictures for use in photography, sizing paper, waterproofing paper, a solution for coating paper, in waterproofing and fireproofing asbestos paper and board, and in making washable drawing and writing paper.

Again it is used in the manufacture of paper flasks for oils and fats, and in making a special paper for use in wrapping cloths to protect them from moths and other insects, and also a special wrapping paper for food, etc. Lastly there are a great many products which fall under no special class and which may be listed for sake of convenience. These are imitation ivory, insulating preparation, anti-corrosive composition, anti-radiation composition, covering for floors and walls, imitation linoleum, leather and bone, and a fireproof substitute. Also a paint remover, shoe polish, use in photography, wood-cement roofing paper, glaze for wooden casks, preparing artists' canvas, a solidifying mineral oil, casein ointment, clarifying glue, and in soap-making. Still again it is used in the manufacture of medicinal foods, and in making a substance called Galaith, which is an important substitute for ivory, ebonite, celluloid, etc.

Thus we see that our old friend the bossy cow not only provides us with a most important human food, but indirectly may be the source of our fifteen-dollar leather (?) shoes, pretty clothes, the beauty and cheerfulness of our homes, made so through the use of casein paint, and in many other ways contributes to our general comfort and welfare.

How Canadian Cheese Grades Out.

A statement of the cheese handled by the Cheese Commission in the year 1917 and by the Dairy Produce Commission in the year 1918 has recently been published by J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa. During the period from June 11 to December 31, 1917, the Commission handled a grand total of 1,860,237 boxes, or 155,642,463 pounds, at an average weight per box of 83.67 pounds. Of this amount, 131,428,689 pounds were first grade cheese, or 83.94 per cent., of which 87,769,088 pounds were supplied by Ontario. Ontario cheese averaged 86.31 pounds per box and, 93.38 per cent. of Ontario cheese was first grade in 1917. Quebec cheese averaged 80.13 pounds per box and 70.21 per cent. of Quebec cheese was first grade. Prince Edward Island supplied 1,164,346 pounds, or 90.85 per cent. of first grade cheese, which averaged 73.37 pounds per box. In 1918, from May 1 to December 31, the Commission handled 148,381,594 pounds of cheese, averaging 83.4 pounds per box. Ontario supplied 85,223,730 pounds of first grade cheese, and 94.8 per cent. of it was first grade. The percentage of first grade cheese from Quebec rose from 78.50 per cent., while Prince Edward Island supplied 90.67 per cent. of first- grade cheese, and Manitoba 85.56 per cent. The total percentage of first grade cheese in 1917 was 83.94 per cent., while in 1918 the percentage of first grade cheese rose to 88.21 per cent., while the percentage of second grade cheese dropped from 15.13 per cent. to 11.16 per cent., and the percentage of third grade cheese dropped from .93 per cent. (17,346 boxes) to .63 per cent. (11,177 boxes.)

In the Province of Ontario the highest quality of cheese was produced in the central portion of the Province, (East of Toronto as far as Lennox and Addington) which annually supplied about 250,000 boxes, of which 98.17 per cent. were first grade over the two years. Eastern Ontario with 750,000 boxes supplied 91.8 per cent. of first grade cheese in 1917, and 93.73 per cent. of first grade cheese in 1918. Northern Ontario with a very small make, and including the districts of Nipissing, Sudbury and Algoma, supplied only 44 per cent. of No. 1 cheese in 1917, and 42.5 per cent. in 1918. Western Ontario, with 61,000 boxes in 1917 and 81,000 in 1918, supplied cheese which graded 95 per cent. No. 1 the first year, and 97.5 per cent. the second year. This district includes all of Ontario west of Toronto, and south of the northern territory. In the Province of Quebec, the best cheese district apparently is the northern section, including Lake St. John, Chicoutimi, Saguenay, and Charlevoix, which supplied 94,587 boxes in 1917, of which 86 per cent. were No. 1. The south shore district supplied the largest amount of cheese to the Commission, the number of boxes being 387,294, out of 755,390 for the whole Province. This district includes the areas south of the St. Lawrence and west of Beauce County, and the percentage of No. 1 cheese was 64.22. The North Shore district including the North shore of the Ottawa and St. Lawrence Rivers, supplied 136,063 boxes, of which 70.49 per cent. were No. 1.

HORTICULTURE.

Packing Apples in Barrels.

Because of the fact that apples are perishable food products and on account of the fact that the standard apple barrel is a comparatively large package, the packing of apples in barrels is an operation that requires very great care if the fruit is to reach the market is a saleable and satisfactory condition. The new Canadian apple barrel is larger than the older one and was adopted in conformity with the apple barrel of the United States which has a minimum capacity of 7,056 cubic inches. This change in the Fruit Marks Act was made as a result of a conference of fruit growers in the early part of 1918 and the necessary legislative action was taken at a subsequent session of the Federal House of Commons. The new barrel has dimensions as follows: Diameter of head, 17⅛ inches; Distance between