

## DAIRYING IN ONTARIO.

A SPECIAL BULLETIN FROM THE DEPARTMENT OF AGRICULTURE.

Interesting Figures as to Prices of Wheat, Barley, Oats, Factory Cheese and Creamery Butter—Raising Dairy Products Far Less Exhausting to the Soil.

A special bulletin issued by the Ontario Department of Agriculture gives the average market prices, first of wheat, barley and oats, second of factory cheese and creamery butter, for the second half of each year from 1883 to 1892, inclusive. The price of fall wheat fell from \$1.05 to 70 7-10 cents, of spring wheat from \$1.37 to 67 4-5 cents, of barley from 57 to 41 1-3 cents, of oats from 38 to 30 4-5 cents. The price of factory cheese declined from 10.45 cents per pound to 9.55 cents, and of creamery butter from 21.33 to 20.59 cents. So that the decline in dairy prices in ten years was only 6 per cent.; in grain prices over 30 per cent. Grain, especially wheat, became still cheaper in 1893, so that had that year been taken the comparison would have been still more favorable to the dairy.

Next, the raising of dairy products is far less exhausting to the soil. A table is given showing the amount of nitrogen, phosphoric acid and potash removed from the earth by the production of \$1,000 worth, respectively, of timothy hay, wheat, barley, turnips, fat cattle, whole milk, cheese and butter. The showing is remarkable. If we take the figure 1 as representing the value of the fertilizing elements exhausted by the production of \$1,000 worth of butter, we find that cheese would be represented in the same process of exhaustion by the figure 88, whole milk by 120, fat cattle by 103, turnips by 275, barley by 410, wheat by 410, hay by 550. So that \$1,000 worth of hay takes from the soil twice as much as the same value of turnips, and 550 times as much as the same value of butter.

From this it will be concluded that the removal of hay from the farm is one of the most exhausting practices, and the exportation of hay in any large quantity from Ontario should not be desired or encouraged. The sale of live stock instead of grain retains a large portion of the soil constituents of the crop upon the farm. In the matter of dairy products there is a great difference; thus whole milk sold off the farm removes a great deal of soil constituents; cheese removes less, providing the whey is returned to the farm; butter removes practically nothing, providing the skim milk and buttermilk are consumed upon the farm. Dairy farming preserves the fertility of the farm, and in many cases increases it, since some extra food is frequently brought in for feeding. The reason why butter removes so little from the soil is that it consists of material which the plant takes up from the air and not from the soil.

From 1883 to 1892 the number of cheese factories in Ontario increased from 635 to 856, the quantity of cheese made from 53,513,032 to 93,848,948 pounds; its value from \$5,590,339 to \$8,959,939. On the 175,000 farms of the Province there are 800,000 milk cows. At an average of 4,000 pounds per cow, these produce 3,200,000,000 pounds of milk, worth \$32,000,000 at 1 cent per pound. The number of cows is susceptible of increase, since there are fewer than five cows to the average 130-acre farm.

Three-fourths of the cheese made in Ontario is produced in Leeds, Grenville, Oxford, Dundas, Hastings, Lennox and Addington, Frontenac, Middlesex, Perth, Lanark, Stormont, Northumberland, Prescott, Peterborough, Elgin and Bruce. The banner cheese county is Oxford, with a production valued at \$847,643; then comes Leeds, with \$807,360, and Hastings, with \$798,937. Leeds has the greatest product per head of the population, 37 pounds, and the greatest number of factories, 76.

In 1872 the export of Canadian cheese was 16,424,025 pounds; in 1882 it was 50,807,049 pounds; in 1892, 118,270,052 pounds; in 1893, 133,946,365 pounds. The value of the export increased in twenty-one years from \$1,840,284 to \$13,409,407. The history of the butter export is less satisfactory. In 1872 we exported 19,068,448 pounds, valued at \$3,612,679. In 1889 we exported 1,780,763 pounds, valued at \$331,958. But since 1889 there has been a steady improvement, though it has not carried us to as good a position as we occupied in 1872. Last year the export was 7,039,013 pounds, valued at \$1,296,814.

The bulletin shows us who are our chief rivals in the British market. Of 250,075,504 pounds of cheese which entered that market in 1892, 116,923,088 pounds came from Canada, 91,664,496 from the United States, and 30,667,952 from Holland. Denmark, which sends an insignificant quantity of cheese, easily leads in butter, sending 96,715,584 pounds. Other countries follow in this order:—France, 60,780,944 pounds; Sweden, 25,635,120 pounds; Holland, 15,885,856 pounds; Germany, 13,914,096 pounds; Australasia, 9,802,240 pounds; Canada, 6,671,952 pounds; United States, 5,426,752 pounds.

The Danish butter also commands the highest price: 24.4 cents in 1892, compared with 18.7 cents for Canadian butter. Denmark has a population about equal to that of Ontario, and a farm area about one-half of that of Ontario. In 1865 it exported only 10,837,000 pounds of inferior butter; in 1891 over 100,000,000 pounds of the highest quality. It is so valuable that cheap butter is imported for home use in order that the best may be sold abroad. The improvement is due to practical instruction in butter-making, to better feeding and care of stock, to the use of the latest and best machinery, and to the universal adoption of the system of co-operative dairies. There are now nearly 1,500 co-operative creameries, with a capacity of from 300 to 1,500 cows each.

Assuming, from the experience of Denmark, the superiority of the creamery system, let us look at Ontario. In eleven years the number of creameries has increased from 27 to 50. Still, the system is only in its infancy here, for the amount of but-

ter made in creameries in 1892 was less than 3,500,000 pounds, or less than 10 per cent. of the total butter production of the Province.

## A FISH THAT WALKS.

It's Fins Are Feet and It Can't Swim but It Gets About Rapidly.

Fish, as everyone knows, have their organs adapted for swimming, so that they exhibit arrangements very unfavorable for any other kind of locomotion. However, a few most interesting exceptions are observed. Certain types find themselves forced either by surrounding circumstances or for seeking food to leave the water for a certain length of time. Among these is a Brazilian fish called the maltha. It cannot swim, but is forced by its very organization to walk or, perhaps, to hop after the manner of toads, of which it has vaguely the external form. The head, which is very large, is provided at its anterior part with a bony spine, at the base of which are situated the nasal apertures. The bronchial orifices are small apertures situated wholly in the dorsal surface, as in the callionymes, so that the water can remain for a long time in the bronchial chambers—a circumstance very favorable for species so frequently at a distance from water.

The entire body, save the ventral wall and the tail, is covered with bony plates



THE WALKING FISH.

forming a very ornamental cuirass. Behind the hind members the body tapers considerably, so as to resemble a tail terminating in a fleshy fin. Upon the dorsal crest there are observed three or four little spines, the remains of the dorsal fin.

The locomotive organs exhibit truly interesting arrangements. The anterior (the pectoral fins), which are quite small, and are situated under the belly, have truly the form of small, thin paws, terminating in a widened fleshy portion, not at all palmar. Here we have already well-modified fins; they are no longer capable of acting on the water, and must perform nothing but backward and forward motions. But the posterior organs (the ventral fins) are still further transformed. They stand out laterally, and first turn downward and then bend forward and outward, forming a true articulation. They terminate in a wide and fleshy paddle.

These are very different from the same fins in other fishes. We have here the formation of a true limb, that naturally cannot serve for swimming, but only for walking, after the manner of toads, which move scarcely anything but the foot and leg, the thigh remaining closely applied to the body and nearly motionless.

Finally, one peculiarity which well shows that the animal is destined for crawling is the form of the anal fin, which, instead of being protuberant and flattened laterally, is here adherent to the tail and flattened vertically, so as to resemble a small, elongated and concave blade. This is one of the rare examples of the adaptation of the anal fin.

## MARTYR TO SURGICAL HYPNOTISM.

The Patient Was Conscious and Suffered Unold Pain—A Revelation to Doctors.

A technical test of the power of hypnotism as an anesthetic was made in the operating room of the Charity Hospital, New York, the other day, with terrible results. When the patient, William Benson, a letter carrier, came out of the coma he horrified the surgeons with a dramatic recital of the awful sufferings he bore, without power to speak or move a muscle except when so directed by the operator. Murder, he said, could not have been attempted in cold blood with more cruel pains. The operator and his assistants stood amazed to think that every stroke of the knife had been like butchery to Benson.

All during the operation Benson seemed entirely unconscious of what was being done, but could turn from side to side, move about or sit up, as the operating surgeon directed. The advantages of the system over ether was continually commented upon to the class of interested students who closely watched the operation, and when the patient sat up and described his agonies on surviving, it was like the exploding of an Anarchistic souvenir in the operating amphitheatre.

The operator was for the removal of an enormous abscess of the brain, with ear complications, taking over two hours, while the average time required for trephining the brain is from an hour to an hour and a quarter.

The operator made an address to the students in which he stated that so far as he knew this was the first case of the kind on record and should be thoroughly investigated. It would upset theories of hypnotism and cause more extensive experiments. It seemed to him that this experience proved that while the method may be successful on some patients, Benson's testimony may condemn its use universally. He also considered it perfectly natural that what should affect one man in one way might affect another differently, though the gross majority may be in one result.

## WORTH READING.

Some Interesting Items Collected from the World's Four Corners.

Austria has only 155 periodicals. There is no cure for color-blindness. British Guiana wants 5,000 Chinamen. Queen Anne detested the smell of roses. Great Britain has 176,520 owners of farms. It takes a gallon of milk to produce a pound of cheese.

An oyster may carry as many as 2,000,000 eggs. Canton, China, exports 12,000,000 fans every year.

Twelve letters comprise the Hawaiian alphabet. England gave £1,363,153 to missions last year.

Army inspectors say that blue eyes make the best shots.

Audiences are forbidden to applaud in Russian theatres.

The restaurants of Paris sold in 1891 18,000 dozen frogs' legs.

The Duke of Saxe-Coburg can speak seven modern languages.

The greatest naval victory of modern times was won at Trafalgar in 1805.

India has 19,000,000 goats which yield 8,000,000 quarts of milk daily.

All the German warships are to be painted a cinnamon yellow.

Before the days of coined money the Greeks used copper nails as currency.

In the Soudan, there are 60,000,000 people who are ignorant of Christianity.

China's national hymn is so long that people take half a day to listen to it.

Between 1867 and 1886 over 200,000 divorces were granted in the United States.

England has 30,590 medical practitioners enrolled in this year's Medical Register.

There are eighty miles of tunnels in Great Britain, their total cost exceeding £6,500,000.

According to the Siamese belief, it takes the soul seven days to reach heaven after death.

The area of the Czar's individual possessions of land is greater than the entire extent of France.

Three hundred and sixty mountains in the United States are over 10,000 feet high.

Pale lines on the hand indicate a revengeful disposition, intensified by long fingers and a short thumb.

It is asserted that in 99 cases out of 100 the left side of the human face is the more perfect in outline.

The Mohawk Indians will not allow so much as a blade of grass to grow upon the graves of their companions.

All Chinamen start the journey of life on an equal footing. Rank is conferred by the Emperor, never inherited.

The district of Columbia has the largest death rate from consumption of any part of the United States.

The physical lives of most freaks, like their professional careers, are short. The fat people usually die of apoplexy.

Jaffa has hundreds of orange groves. The exports of this fruit for the last few years have averaged 30,000 boxes per annum.

The British Museum possesses an iron axe head of 1370 years B. C., the oldest authenticated iron implement known.

Watt's patent for a steam-engine was issued in 1769. The steam-engines of the world to-day exercise 50,000,000 horse power.

If human dwellings were constructed on the same proportionate scale as the anthill of Africa, private residences would be a mile high.

No representation of the face of a man was ever stamped on a coin until after the death of Alexander the Great, who was regarded as a divinity.

In England, France and Germany the ratio of multiple births is 13 twins per 1,000, and 160 triplets and 8 quadruplets per 1,000,000 births.

Mrs. Frances Crosby, authoress of "Safe in the Arms of Jesus," is sixty-two years of age, and has been blind since she was six weeks old.

Parisian shopkeepers say that photographs of actresses and society women are sold in large numbers, but that pictures of public men are rarely purchased.

Russia is making such successful efforts in increasing her cotton production, that within five years she expects to raise all that she needs for home consumption.

Two hundred Australians, under the leadership of William Lane, are founding a "New Australia" in Paraguay. The colony proposes to settle 400 families in the country within two years.

The Sultan of Turkey is a monomaniac on the subject of carriages. He has been steadily engaged in making a collection of such vehicles for the past twenty years, and now has nearly 500 of all makes and kinds.

A caterpillar in the course of a month will devour 6,000 times its own weight in food. It will take a man three months before he eats a quantity of food equal to his own weight.

A new diplomatic departure has been initiated by France in the sending of an agricultural engineer to Berlin as a technical agricultural attaché to the French Embassy. The stationing of similar attaches in all countries is under consideration.

Sandwich men in the streets of London are required by law to walk near the curbstone, but not on the pavement, and not less than thirty yards must separate each sandwich man from his nearest placarded comrade. The fine for violating the regulations is 10s. for each offence.

Someone who has figured on the work done at Pompeii since June, 1872, says that it will take until 1947 to unearth the entire ruins, with eighty-five men working every day.

The healthiest spot in the world seems to be a little hamlet in France named Aumene. There are only forty inhabitants, twenty-three of whom are eighty years of age and one is over one hundred.

The total coinage, gold and silver, of the reign of Henry III. was £3,895; the total coinage of the reign of Victoria up to 1892 was £544,100,000, of which £312,300,000 were of gold and £231,800,000 of silver.

Leaves of the talipot palm in Ceylon sometimes attain the length of 20 feet with a width of 18 feet. They are used by the natives in making tents. The leaves of the double coconut palm are often 30 feet long while those of the Inaja palm on the banks of the rivers of Brazil are sometimes 50 feet long, and 10 to 12 feet wide.

Alaska is large enough to allow territory equal to the size of the United Kingdom of Great Britain and Ireland, the Empire of Germany with its twenty-six states, the Republic of France with its eighty-six departments, the kingdom of Greece with its thirteen monarchies and Republic of Switzerland with its twenty-two cantons to be carved out of it.

A very simple method of inducing sleep in cases of persistent insomnia, and one that has succeeded where many drugs have failed, is simply to administer a moderate amount of liquid food before the patient goes to bed. This diverts the blood from the brain to the abdominal organs, and takes away the cerebral excitement that precludes sleep.

It is well known that sea water has a most beneficial effect upon the appearance of horses, imparting a satin gloss to their coats, a brightness to the eyes, and a generally refreshing appearance. It is no unusual thing at seaside resorts to see hostlers giving the animals in their charge the sea plunge as regularly as the most systematic bather on the beach.

A special feature of Java oranges is that they will keep from thirty to forty days, and, if properly packed, for even three months. New orange groves are continually being laid out, and now number some 400, against 200 some fifteen years ago. This industry has influenced the population of Java, which now contains 42,000 inhabitants, against 15,000 some twelve years ago.

A good extemporized apparatus for removing carbonic acid gas from a well is simply an opened-out umbrella let down and rapidly hauled up a number of times in succession. The person who made and reports this experiment states that the effect was to remove the gas in a few minutes from a well so foul as to instantly extinguish a candle previous to the use of the umbrella.

## SIR WILLIAM VAN HORNE.

He Receives Congratulations From All Parts of the World.

Sir William Van Horne, as he is now entitled to be called, president of the Canadian Pacific Railway, has been the recipient of numerous congratulations on the high honor that has been conferred upon him by the Queen. Messages from all parts of the world have been received by him extending congratulations. The new knight takes his distinction modestly, and has a pleasant word for all who call upon him. Sir William Van Horne's career is well known, but a brief sketch of his life will prove interesting at the present time. He came from old Dutch stock, whose home was Manhattan but he was born in Will county, Illinois, in February, 1841. Thirty-two years ago he entered the service of the Illinois Central railway as telegraph operator at Chicago. Subsequently he served the Michigan Central in several capacities. From 1866 to 1872 he was connected with the Chicago and Alton railway as train dispatcher, superintendent of telegraphs, and assistant superintendent of the railway. In 1872 he became general superintendent of the St. Louis, Kansas, and Northern railway. From 1874 to 1878 he was general manager of the Southern Minnesota line, being president of the company from December, 1877, to December, 1879. From October, 1878 till December, 1879, he was also general superintendent of the Chicago and Alton railway. In 1880 Mr. Van Horne became general superintendent of the Chicago, Milwaukee, and St. Paul railway, and remained in this position for two years. It was in 1882 that Mr. Van Horne joined the Canadian Pacific railway as manager, and it was in 1885, under his able direction, that the last spike was driven in that road at Eagle Pass by Sir Donald Smith. In 1884 the manager was made vice-president; and on August 7, 1888, he was appointed the supreme head of the great corporation. The new knight is chiefly identified with the Canadian Pacific railway. The enterprise was unique. He threw himself into it with marvelous energy, believed in it, and made others believe in it; coaxed capital, coaxed the credit of the country, and completed the greatest railway contract on record within the stipulated time. Sir William Van Horne is recognized as a man of great foresight, sound judgment, and splendid comrade. He has the faculty of dealing with men, winning them over and making them co-operated with him.

## Naturally Cautious.

It is natural that the Canadians should want to sell their cattle, and equally natural that they should be ready to believe the introduction of Canadian cattle into this country perfectly safe and innocuous, says the London Times. It is equally natural for this country, which has already suffered so severely from imported disease, to look somewhat closely at evidence which the sellers of stock have no temptation to scrutinize. We accept heavy risks in opening our ports to what is practically the cattle trade of Canada and the States.

## Not So Bad.

Hicks—By the way, you remember Jennie Draddies? Well, she has been travelling about the country under an assumed name, and with a married man, too.

Wicks—The deuce! You don't mean it? Who is the man?

Hicks—The man? Oh, yes; he is her husband. It was his name she assumed before starting out.

It was to the tobacco trade that Glasgow first owed its importance in the world of commerce. This trade began in 1707, and 70 years later we find Glasgow importing more than half the tobacco consumed in Britain.

Beggars swarm to such an extent in Malta that the only way to avoid being pestered by them is to put out your hand and anticipate them with their own whining "Give me something," "Me plenty poor man," "Me very large family."

## British and Foreign.

—Omnibuses with pneumatic tires are being tested in Glasgow.

Gas now costs consumers in London fifty six cents a thousand cubic feet.

Japan has ordered to be built in London a first-class battle ship of over 12,000 tons displacement, 14,000 indicated horse-power and eighteen knots speed.

A French bicyclist has just crossed the Alps, by the Mont Cenis Pass, on his bicycle. The weather was unfavorable and the road was made slippery by snow and rain. The trip was an incident of a journey on the wheel from Rome to Paris.

The thinnest sheet of iron ever rolled has recently been turned out at the Hallam Tin Works, near Swansea, Wales. It has a surface of 55 square inches and weighs but 20 grains. It would take 1,800 such sheets to make a layer an inch thick.

Extreme cases of habitual drunkenness, according to the Manchester correspondent of the London Lancet, seem to be more common in women than in men. An old woman was brought before the city magistrates of Manchester recently, charged with drunkenness for the 191st time.

The latest development in the milk business in London is to drive the cows around the route and have them milked in the presence of the customers. The customer is thus able to judge for himself of the healthy appearance of the animal, and is sure of the freshness of the milk. The practice is a common and ancient one in Egypt.

The population of Melbourne, Australia, at the end of 1893 was 444,632, a decrease of 46,064 as compared with April, 1891. The decrease is due to the industrial depression, from which the city is now beginning to recover. The population of Sydney at the close of last year was 421,030, as compared with 411,710 at the end of 1892.

The British War Office is considering a proposition that all soldiers should be instructed in elements of anatomy and physiology in order that they might be able immediately to stop the flow of blood from a leading artery. The proposer of the scheme also offers the unpleasant suggestion that every soldier should have the leading arteries mapped out on his body by dotted lines tattooed in India ink.

According to a report just issued by the Greek Minister of the Interior the recent earthquakes in that country caused the death of 27 persons, the serious injury of 154 more, and the destruction of 952 houses. The chief loss of life was in the churches, where the people were assembled for evening worship. There is great distress among the houseless people. The damage to property is estimated to exceed 4,000,000 drachmas.

During the last two weeks of April 868 inspections were made in Glasgow under the Shop Hours' Act, and in 42 cases it was found that young persons were being overworked. Grocers, barbers, saloon-keepers, draymen, and confectioners were the principal delinquents. Twelve grocers were discovered working their boys from 75 to 83 hours per week, five barbers from 75 to 78, four saloon-keepers from 75 to 88, and five draymen working their girls from 75 to 102 1/2 hours per week.

Some unpleasant appearing statistics have just been issued by the French Government. Explanations of the figures may come later to tone down the evil impression or explain it away. In 1885 about 57,000 hectolitres of absinthe were retailed in France; in 1892 over 126,000 hectolitres were similarly sold, and there has been a marked increase in the consumption of all other alcoholic drinks in the republic. Between 1861 and 1865 the average annual number of condemnations by the law courts was 86,000; in 1885 it had risen to 127,000. Increase of population had little to do with the increase of figures, for in recent years the excess of births over deaths in the country had varied from 10,000 to nearly 40,000 a year.

## PEOPLE TALKED ABOUT.

Queen Victoria has inspected a number of villas in the neighbourhood of Florence with a view of purchasing one, which her Majesty intends to present to Princess Beatrice.

The millionaire of the United States navy is said to be commodore George E. Perkins. In the army the wealthiest man is General Nelson B. Sweitzer, who is also a famous cavalryman.

Professor Ibrahim Hakki Bey, the Turkish commissioner to the world's fair, has returned to Constantinople so Americanized that his friends are afraid he may get into trouble.

Miss Ella Hepworth Dixon, the daughter of Hepworth Dixon, who is making a name for herself in the literary world of London, is also an artist of more than ordinary ability.

Prince Constantin Wiasesky, of Russia, is an indefatigable traveller. He has just returned to Paris after a trip of 43,000 kilometers across Asia and is ready to start on a tour through Africa.

Mr. Gladstone has received vast numbers of letters, the bulk of them from members of the working classes, and not a few accompanied by personal gifts, which the ex-premier is earnestly besought to accept.

Mrs. Claudia Herrera, who died in San Francisco the other day at the end of 120 years, was born in Rial de Jesus Maria, Mexico. She moved to San Francisco when she was 75 years of age, and since then until recently was an active worker.

Mr. Jenkins, the almost forgotten author of "Ginx's Baby," has been chosen by the Dundee representatives to run for the parliamentary representation of their city. He represented Dundee in the 1874-80 parliament, and it was then that his book, which attracted a great deal of attention, appeared.

The Empress Frederick has induced two Berlin societies of amateur photographers to co-operate in bringing about an international exhibition of photographs by amateurs in 1895. Her majesty has undertaken to be a patroness, and has requested Princess Henry to act as her substitute on the committee.

Mrs. Humphrey Ward says that before she finished her first novel she was seized with writers' cramp and that every word of the novel had to be dictated to a shorthand writer. She has since recovered the use of her hand. Mrs. Ward often rewrites a page twenty times before she is satisfied with the result.