

Canada's Wealth

As pointed out by W. L. Edmonds, in the "Monetary Times," that Canada's national wealth is now estimated at \$22,200,000,000, while the annual productive value of the country's economic activities is between five and six billion dollars. One half and six billion dollars. One half of the vast amount of undeveloped wealth, the soil untouched, the mines not yet fully exploited, the forests convertible into millions of acres of three hundred million acres, are practically suitable for agriculture, but with field crops last year 1,235,000 acres, only about one-tenth of it was in use. Even at that, the yield of wheat per acre, among the most important wheat-growing countries, is steadily increasing. Canada is the prize as the world's best wheat grower.

Other natural sources of wealth are steadily more important. The estimated area of the Dominion is 1,100,000 square miles, or more than three times the area of Ontario, though not all covered with merchantable timber. A Government estimate in 1924 placed the total stand of the latter at 246,828,332 thousand cubic feet. Canadian coal reserves are second only to those of the United States, the mines being located chiefly in the West and the East, it has been found economically wise to import large quantities for the Central Provinces. Even at that, there is an annual production of about fifteen million tons, against an importation of about twenty million tons.

The gold and silver production Canada has attained to third place in the world. We have 85 per cent. of the world's nickel, a metal now returning us prosperity through new uses found in the Province of Quebec is the world's main source for asbestos, while British Columbia is attaining a high place for its copper, lead and zinc. The great fisheries which brought Europeans to the Grand Banks more than four centuries ago continue rich and with an improving market. Inland the water powers are estimated to be worth 600,000,000 tons of coal per year, a guaranteed source of wealth as long as sun shines and water runs as the Indian treaties used to say.

Canada's main sources of wealth, as quoted by Mr. Edmonds, are given as follows, including certain products of the forest under the head of manufacturing:

Agriculture	\$1,501,428,000
Fishing	209,516,000
Timber	42,000,000
Lumber (logs, lumber, millinery, paper, etc.)	554,000,000
Manufacturing	3,500,000,000
Construction	239,500,000
Custom and repair	91,000,000
Electric power	100,000,000
Fur trapping	15,643,000
Minerals	136,000,000

The table is an inspiring one, and should give encouragement to those who feel disproportionately the irritations of the after-war depression, which are felt in every European country that took part in the war to an even greater extent.—The Globe.

A New Sun Furnace

Science has recently come into possession of an extraordinarily interesting new appliance. It is called the "solar furnace," and, according to the claims made for it, produces a heat which is almost beyond the imagination of the human mind, says a writer in "Science Sitings."

Under the powerful concentrated rays of the sun the solar heat is increased to a higher temperature than exists in the sun itself, and such is the terrific power of this heat that it not only quickly melts a brick into a liquid, but if the melted brick is still retained in the "solar furnace" a moment or two longer it vaporizes into a gas.

This new and fascinating mechanism is the Marcel Sun Furnace. So tremendous is the heat it produces, surpassing even that of the ordinary electric furnace, that it will reduce a diamond into gas.

Of course, the fundamental idea behind the furnace has been known to the world for centuries. Every child knows that if he takes a magnifying glass and holds it in the sunlight he can focus the sun-rays to set a piece of paper on fire or char a piece of wood. What Mr. Marcel Moreau, the inventor, has done is to work out the old familiar problem of condensing the sun's rays on a vastly bigger scale.

There are twenty-two mirrors in the Marcel Sun Furnace, each of them held in a rectangular metal frame, and arranged about a common centre to reflect the solar rays from a comparatively large area, and reflect towards the common centre a relatively great quantity of sunlight.

The mirrors are adjustable with reference to the angle of the sun. The rays reflected by the mirrors are directed towards, and upon the lenses, by which they are gathered together and focused.

Each of the lenses is mounted in a metal ring, and all are made to focus on a common point.

Training Dogs to Smuggle

Constant vigilance by Italian Customs officials is necessary to check the lucrative smuggling trade which exists on the Swiss-Italian frontier. The smuggled goods include saccharine, tobacco, matches and perfumes, which are heavily taxed in Italy.

The centre of the trade is on the frontier south of Lugano. Here the Italian authorities have constructed a high wire fence covered with small bells, which extends along many miles of the hills and valleys.

Customs officials are placed at frequent intervals along the wire "wall," which they watch night and day, but in spite of all precautions the illicit commerce continues to increase, as the smugglers, mostly Italians, and their trained dogs, are exceedingly clever.

During a dark night one of the smugglers will set the bells ringing purposely in his section, and when the officers rush to the spot other smugglers cut the wire a few hundred yards away and escape across the frontier with the contraband goods.

The training of dogs has become a fine, though cruel art. The smuggler lends his dog to the "trainer," who is always dressed in a Customs officer's uniform. He beats the animal frequently, so that in a few weeks the dog will detest and fear a man in uniform, and avoid him anywhere in future. This is exactly the result desired by the owner.

The Italian smuggler then takes the dog with him across the frontier and teaches him to return home alone. The animal wears a coat provided with small pockets which contain the contraband goods, and becomes in time an accomplished smuggler. The dogs are shot at on sight by the frontier guards, and this makes the animals even more wary any cunning.

The larger dogs carry their loads with great speed over the Alpine passes, and it becomes practically impossible to prevent this form of smuggling. A well trained dog is worth a large sum of money, but he cannot be sold, for he will constantly return to his master's home, where, owing to his value, he has always been well treated.

The Italian authorities have found the system of bells unsatisfactory, and have recently replaced them by small electric lamps on the wire fence, as most of the smuggling takes place at night.

It is doubtful, however, whether the new method will be successful, as it is a comparatively easy matter for the smugglers to cut off the electric current.

Most of the smugglers are known to the police and Custom-house employees, but they cannot be arrested unless caught red-handed, which is a difficult affair.

Galalith is odourless and non-flammable; it can be dyed in numberless varieties of colours and brilliantly polished; and in view of the ease with which it can be worked by methods similar to those employed for natural horn can be manufactured into countless inexpensive articles such as beads, brooches, belt and shoe buckles, buttons, jewelry, mah jong sets, dice, handles for umbrellas, walking sticks and bicycles, radio cabinets, dolls and toys, and piano keys.

In addition to its use for the manufacture of plastics casein has been extensively employed in food and medicinal preparations; and in the paper, adhesive, paint and other industries its sundry applications are legion. It makes adhesives of the very best for aircraft and wood-working, is a constituent of nearly all the cold-water paints most frequently used in many countries, and associated with clays, alum and lime gives a mixture of excellent for the production of especially high-grade paper for half-tone illustrations.

Casein and Its Industrial Applications

A STUDY BY THE DEPARTMENT OF THE INTERIOR.

Casein—the curd precipitated when skim milk turns sour or is treated with acids or rennet—is of rapidly growing industrial importance. This is largely a result of the recent advance in the manufacture from casein of plastics, such as galalith, and their use as inexpensive and most satisfactory substitutes for many materials, some of which are rare and costly, like Chinese jade, lapis lazuli, ivory, ebony, amber, tortoise shell and coral. These plastic provide splendid imitations of natural horn and as hard rubber substitutes are preferable to ebony and valuable for many purposes. For the manufacture of all kinds of electrical fittings used in radios, telephones, aeroplanes, automobiles and so on they are admirably suited because of their high electrical resistance.

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Offers Huge Cash Prize for Morphine Substitute

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Morphine is now derived from opium. If it could be made synthetically, much cheaper than that derived from the poppy, Mr. Metz believes that the supply of opium would be killed at its source. It would no longer pay to grow the poppy.

The magic formula, if discovered, must be guarded very carefully to keep the drug from being manufactured and spread among addicts.

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Photographs of Bullets

Although clear-cut photographs of bullets in flight can only be obtained if the plates are exposed for a period of time thousands of times less than the shortest so-called "instantaneous" exposures of even first-class cameras, yet the feat is not an impossible one. The earliest pictures of the kind were made forty years ago by the famous physicist Mach; and since then the methods have been much improved, while at the same time the speed of bullets is greater than ever.

The photographs obtained are not true pictures, but only silhouettes, and the plate is not enclosed in a camera but exposed to the light of a bright, brief electric spark. The bullet in its flight operates a trigger mechanism, (although in modern forms of the apparatus it does not actually touch any obstacle) which allows an electric current of high voltage to produce a single spark, lasting less than a millionth of a second, at exactly the right moment.

Many interesting things may be seen in these photographs. Even modern fire-arms, with their "rifling" grooves in which the bullet fits so tightly, allow gases to leak past the bullet and emerge before it. It appears, too, that the expanding gases from the exploded cartridge continue to push the projectile onwards even after it has left the gun, so that it is travelling fastest some inches in front of the muzzle. In these silhouettes they may also be seen faint lines like a ship's wash from the "bow" and "stern" of the bullet; these are the sound waves set up in the air by the swiftly-travelling projectile.

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Viceroy as Ships Boy

The Earl of Reading, Viceroy of India, has been paying a visit to England. A short time ago he was a guest of the City of Reading, which constituency he represented in the Imperial Parliament, for a number of years, and was warmly greeted by the Mayor and city representatives.

Declaring that he could not pretend to have any close connection with India or special qualification for going there as Viceroy, Lord Reading said it was true he had been to India once as a boy of some 17 years of age, sailing in a sailing vessel which in its voyage proceeded from Rio de Calcutta. He added:

"I did not occupy a very high place. My main occupation was cleaning the brasswork and polishing the deck. (Laughter.) I also did the various work which fell to me in my position when it came to reefing sails, hauling on ropes and doing any odd jobs of navigation."

"On the day I was appointed Viceroy I recalled with the flash of memory that almost passes belief the day when, after being from two to three months moored to a quay at Calcutta awaiting a cargo of jute, I stood under the fore-castle head taking my small part in heaving away on the capstan bar, hauling in a rope in order to pull ourselves to the middle of the river and pass along a hawser to the towboat."

"There we sang 'Hurrah, my boys, we're homeward bound.' As we moved out and as I tolled at my labor I called a halt and shouted, 'I shall never return to India until I come as Viceroy.' (Laughter.)

"With due regard for accuracy, I must tell you at once on the authority of the person who ought to know best that that story is not true. (Laughter.) It never occurred even in his wildest dreams to that lad toiling bare-footed on the deck, and moving about among the hands on the fore-castle, that the time might come when he would live in India as head of the Administration and as representative of the King."

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Things Good to Eat

BLUEBERRY BREAD PUDDING.
One cup blueberries, three-quarter cup of juice, one and a half cups of crumbs, half a cup of sugar. Wash and pick over one pint of blueberries. Add the sugar and stew gently until tender. Measure one cup of the drained berries and three-fourths cup of juice. Combine the ingredients and bake in a slow oven (325 deg. F.) until firm. Serve with whipped cream.

STRAWBERRY SALAD.
Wash, hull and cut into halves lengthwise, perfect strawberries. Sprinkle with powdered sugar and a little marshmash or sweetened strawberry juice. Cover and let stand in the refrigerator until thoroughly cold. Place the berries in cups of small white leaves of head lettuce, add whipped cream with which only enough fruit salad dressing has been added to give flavour and decorate with halves or chopped pistachio nuts meats and a strawberry. Pineapple may be combined with the strawberry. Strawberry salad with fruit salad dressing is very delicious.

NO VIRTUOSO IN TOWN.
The church committee favored the purchase of a chandelier. The new member opposed it. He said, "Well, I don't want to be stubborn, but who can play it after we get it."

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Spanish Recruits Stage a Mutiny

Soldiers Secured in South America Start Flight in N. Y. Harbor.

New York, Aug. 16.—One man is missing and five others are in chains after an alleged mutiny of 150 men, said to have been recruited in South America and Cuba for service against the Riffs in Spanish Morocco, aboard the Royal Spanish Mail Line steamer Antonio Lopez, now lying in New York harbor.

Trouble broke out aboard the ship Sunday night when the men, whom Captain A. Muslera declared were seized to fight in the Spanish army, attempted to break for freedom. While the crew and officers fought them off with clubs, police reserves were summoned from the nearby Old Slip station. Clambering aboard the vessel, police sailed into the fray, swinging their night sticks and battering down the infuriated men.

Apprentice Tradesmen

According to a recent amendment to the Pay Warrant, Army tradesmen who have enlisted for training at the public expense as apprentice tradesmen may obtain their discharge from their Army engagements on payment of £100. This is only £40 more than the cost to soldiers in other categories of purchasing their discharge, and only a small fraction of the cost to the country of the apprentice training. This makes the Army apprentice scheme a better business than ever for bright youths, as it removes the fear of being tied irrevocably to the Army if a big chance appears in civil life.

Household Notes

If canned peaches seem tasteless, add a drop or two of rose water and bitter almond.

Flaked tuna-fish, sliced tomatoes, chopped celery and chives make a delicious salad.

Try creaming potatoes and then baking them with breadcrumbs and cheese.

Vanilla ice cream is nice served in sherbet glasses topped with a colorful ice.

New potatoes can be brushed or rubbed with a coarse cloth to get the skin off.

Never peel or slice peaches until just before they are needed, as they turn dark.

Grated horseradish makes a nice seasoning for tomato and lettuce sandwiches.

After washing silk hose, rinse them in three waters of lukewarm temperature.

AFTER ALL IS SAID AND DONE



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