Nitrate

BY GEORGE E. BURROWES

FROM petroleum to Sodium Nitrate may seem a long way, but as the Chilean Nitrate industry consumes, directly and indirectly, a matter of half a million tons of fuel oil annually, of which the International Petroleum Co. supplies a fair proportion, also as it provides an extensive field for labourers, into which Talara Refinery products have recently gained a footing, some account of the industry may be of interest to readers of the Review.

To others than oilmen it should be of interest, as being the principal source of the nitrogen required in increasing quantities yearly for the fertilization of crops in all parts of the world and as one of the main sources of the nitric acid used in the manufacture of industrial explosives—this in time of peace—during the great war the whole of the production of Chilean Nitrate, some two and a half million tons annually, was used by the Allied Governments in the manufacture of ammunition, while the enemy, after using up stocks which had no doubt been accumulated in anticipation of a short war, had to depend on atmospheric nitrogen.

Sodium nitrate—or simply nitrate as it is known in the trade—is found on the inland slopes of the coast range of hills between the latitudes 19° and 25° south, the ports of shipment being Piagua, Junin, Caleta Buena, Iquique, Toquepilla, Antofagasta and Talcah. In some districts the deposit is found within ten miles of the sea and in others as much as 20 miles, the altitude ranging between 3,000 and 7,000 feet.

The deposit varies very much in character but is generally a conglomerate of sands of various kinds, stone and earthy matter, and a percentage of Sodium Nitrate which, in the material extracted today, averages about 16%. In many places the caliche, as the crude material is called, is found in a crystallized mass resembling rock salt, containing 40 to 60% of nitrate, and in very exceptional cases almost pure, and though this was the only class of caliche considered workable in the manufacturing plants in operation about thirty-five years ago, today improvements in machinery and methods of working make it possible to treat material carrying an average of 18% nitrate, and in some cases even less, which means that ground previously worked and abandoned as unprofitable can be worked over again, and it has even paid to re-treat the refuse dumps of some of the older works. The writer extracted 4,000 tons from one of these dumps at less than it cost to extract the same quantity from new material.
The caliche is occasionally found on the surface, and in some places at a depth of thirty feet, but generally it lies a foot under the surface and the deposit may be anything from inches to several feet in thickness—possibly several feet of sandstone. As a rule, the caliche is excavated from open workings, the gravel being first broken up by blasting with a crude powder made on the spot from various ores of soda, steam coal, and native sulphur, and afterwards the caliche is broken out and separated from stone and earth by hand.

Where the deposit is fairly regular, a light railway is run directly into the workings but where this is not possible the caliche is loaded into trucks, inumps, averaging about 300 pounds, transported to a loading station on a light railway, and thence to the works which may be two or three miles distant.

The process of manufacture is one of leaching and is fairly simple though constant changes in the character of the material treated require modification in temperature and density of solutions. The caliche is crushed to pieces of about ten cubic inches, dipped into a boiling tank of about thirty-x-foot deep provided with steam boiler ends. The tank is filled with a hot, weak solution from a previous boiling, and kept under steam for about two and a half hours when the solution will have reached the temperature and density at which it carries the maximum amount of nitrate—it is run off to a settling tank where insoluble matter is deposited together with a considerable quantity of common salt, and then to the crystallizing pans, about forty five feet deep, where it remains from four to six days.

As the solution cools and contracts, the nitrate crystalizes out, and before the chlorides and sulphates can follow, the liquor, still carrying a high percentage of nitrate, is drawn off and returned to the process in the boiling tanks which are erected in series, in sets of six or eight.

After the liquor is drawn from the pans the nitrate is left to drain for a day or two and is then thrown out on the drying floor where the greater part of the remaining moisture is lost by drainage and evaporation, and here it may be mentioned that the nitrate district is rainless and the atmosphere extremely dry. After drying it is sacked and loaded on railway cars, and its commercial assay is then about 95.5%, the remainder being accounted for by moisture, chlorides, sulphates and insolubles.

A valuable by-product is soda which exists in the caliche in the form of an nitrate acid, and is extracted from the liquor on its way from the crystallizing pans back to the boiling tanks—it is precipitated with a solution of sodium bisulphate, washed, decoted and baledod, when it is usually 98 to 99% pure. Bode is extracted from a source in the north of South America, but in Japan but by far the greater part of the world's supply comes from the Chilean nitrate district.

There are several theories as to the origin of the Chilean nitrate deposit and though it has never been conclusively explained it would seem probable that, nitrogen from the atmosphere, under certain climatic and electrical conditions, has combined with sodium from decomposed rock.

Nitrate found in the province of Tarapaca, is said to have been used by the Spanish Conquistadores in making gunpowder but the earliest reliable record was a publication in 1589 by a Lima (Peru) newspaper announcing the discovery of an extensive deposit, and giving the results of experiments made by a group of chemists commissioned by the Spanish Viceroy—this of course being before the Peruvians gained their independence from Spain. Later, the Peruvian Government attempted to make a monopoly of the industry but the war of 1879 between the United States and Peru, and the result of this trouble took over the nitrate bearing territory.

Between 1810 and 1812 eight small works were established, the plant consisting of conical iron pots about 3 feet in diameter and 3 feet deep, in which the caliche was boiled by direct firing, in the earlier days with firewood and later with English coal—small pans about 8 inches deep were used for crystallizing, and the finished product was shipped to port on mullein.
Truncheon Wielders of the Tropics

The great game of baseball and gum chewing as played at Talara, and as renewed by a

BY HARLEY SYDAX

BEING at a dead end for means to pass away the holiday days in Peru I attended a baseball match. The game was between two local teams, in fact the only teams in existence on the west coast of South America. The scene of operations was Talara.

On arrival at the ground, the teams spent the first half hour throwing a hard, very hard, ball to and fro among themselves but to the general danger of the spectators—"winding up" I believe they call this preliminary action.

Eventually a mild-looking individual picked his way gingerly to the midst of the hurly-burly, and from among which the participants affected somewhat a formation of the diamond-shaped plot of ground. At this juncture I was afforded an opportunity to penetrate the various disguises affecting, recognizing each and every fellow workman or resident companion in the game, withal the majority were dressed in a hybrid tourist, golfing and walking costume, bearing on the breast a letter "N" which, I was informed, was the advertisement for a supply firm which presented the clothing in more than one man in the centre held on his own when the question of liberty was the familiar operation in glass-filling. It was plain even to me that this was downright tainting, and my sympathy was with the man when he threw down his weapon and retired in dignity to a bench.

There was one man among them who was distinguished by a different regulator, being rigged out somewhat like an upholstered diver, and his job appeared to be to repair a monitor. Leaning on one knee with his right arm held aloft like some heroic statue. This person was sadly handicapped by a small marine, indicating his cuirass of identity. I had him spotted right away as a dart hitter and needed to keep an eye on him. The manner of execution which he displayed, kept a re-awakened the wild ball throwers gave the signal to commence hostilities.

An individual armed with a policeman's truncheon, only larger—fact it was not unlike a stab of a bludgeon, turned the mild man who politely but firmly told him to go away and eat chewing gum.

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Now that I had mastered the rudiments of this baseball affair, the action was beginning to pall. As the game progressed, my interest waned, and I lost hope of anybody being hit at all, though I knew it would be a jolly good crack when it did come. It is true that the clubmen at times would hit the ball with the club and send it soaring into the air upon which racy occurrences the clubman would express his pleasure by gallowing around the diamond-shaped playground until the ball was retrieved.

Finally, however, a sterling young man by the name of Shorty went out of his way to give the spectators a thrill. I heard someone nearby remark that he would give an exhibition of the game as played before the New York Democrats, but I am poorly informed on American politics and this comment threw but little light on his work except that it would be good. In the course of his fistic movements he evidently realized that to hit the ball would be futile and, looking around the diamond, leaped to the ground and turned his posterior full on to the approaching ball. For this act he was conceded permission to walk to the first cushion where he knelt while all eyes were upon him. This, I believe, was a practice for safety's deliverance.

I must remark that the spectators did not have a great sense of humor. All those who had bor-
dowed Ford cars for the occasion vented their ill
humor in exhausting the batteries and producing the maximum of discord. Such insensate
trifling caused danger and censure upon the players.

As the struggle progressed I became lost in a maze of minor technicalities. Why, for instance, did some of the men devote their time to running away from the diamond in pursuit of a batted ball while others seem to be under suspicion for running along the chalked line of the diamond at each point of which some thoughtful person had placed cushions for the runners to fall upon and a man was close to assist the on-
coming runner to a comfortable sitting position on the
cushion, and while on the same time endeavor to catch the ball which usually came in the
direction of purest coincidence, I think. It generally resulted in the ball, the catcher and the runner getting mixed up on the ground for a few seconds. After disentanglement the man would throw it away again and the man whose objective had been the cushion was returned to the gum-chewers rear.

It was a sport without a happy medium. Some wanted to sit on cushions, some wanted to run and others just wanted to sit and shout rude remarks to their contemporaries such as, "That is a boy, Egbert, this is a boy" or "You poor fish, swat it." Then, they would all change around and those who threw would squat, and those who swatted would throw.

Thus alternating, the game reached a point at which a gentleman called "Hawk" entered the arena. The very first time the ball was hurled at him he struck it away into the hinterland, walked calmly around the diamond and thence to the gum rack, evidently satisfied with his work and not in a frame of mind to run any further. Everybody seemed pleased with this Hawk fellow and I overheard one jovial person remark that he ought to be playing with our Pirates. Learning later that his full name was Hawkins, I was able to appreciate the joke which was no doubt a reference to his namesake, the buccaneer.

Another gentleman named "The Duke," of what Dukedom I know not, had thoughtfully provided a grandstand consisting of two Ford car wheels and two long boards. Others, too, contributed a tripod drawn by a quadruped of uncertain lineage and ancestry. Altogether the players would themselves in this dash and dash along the chalk lines apparently with intent to familiarize themselves with the route to be taken when in action. I was informed that this conveyance was known as a "sulky," but have the term was intended for the quadruped.

At the ultimate conclusion of the game much excitement prevailed and undue exuberancy was exercised. Suitable ob-
sequies were performed at the holsterey of "Iar-Bur-
kin" and I say with much truth that I was very much more at home during these final mo-
ments than at any other during the entire game of baseball.
Opposed to Autos

Twelve years ago Autos were banned from Prince Edward Island.

BY E. F. WEAVER
HALIFAX DIVISION

FEW non-residents of Prince Edward Island are familiar with its history since Jacques Cartier’s discovery in 1534 and fewer still know about the up-hill fight for a foothold which the automobile has been obliged to make on this island.

Its original name was Abegweit (Home on the wave) and it was later named by Champlain, île de St. Jean, subsequently receiving its present title after the Duke of Kent, father of Queen Victoria. It was owned by the French prior to 1758, when Great Britain annexed it as a colony. In 1755 many Acadians expelled from Nova Scotia came here.

In 1767 Great Britain parcelled out the island to British settlement, giving the owners a guarantee of the island. For over a century the Islanders remained tenants to absentee landlords. When the province joined the Canadian Confederation in 1867 the Dominion Government paid $800,000 to the Provincial Government to buy out the landlords. Of the 843,381 acres thus acquired, practically all has been sold to tenants as Freehold, at two to twenty-five cents to one dollar per acre.

With the inception of the automobile, the farmers fought against its coming to the island, and the first few brought over were restricted to such an extent as to have no association with convenience or comfort. Finally in 1909 there was an order issued to discontinue use of autos on the Island altogether.

This situation continued until the spring of 1912, when a new government came into power, with the result that the old order was rescinded and the automobile came into use again, this time to receive more determined opposition than ever from the parties who were still fighting against it. When the 1912 permit was issued, it was with restrictive clauses: namely, that no auto was allowed outside of any town or village on Tuesdays and Fridays, as these were, and still are, the two market days of the week. This restriction was allowed for the reason that at the sight of an auto an island horse was expected to become unmanageable and run away, with serious result. Another regulation was that no auto could be operated on Sunday between the hours of seven and nine in the evening, as these were considered church hours.

These restrictions continued for some time and where a certain road was closed to the automobile a canvass had to be made of all the farmers on that particular road and the decision of the majority was final. This condition existed until the autumn of 1919 when the then Premier opened up all roads and removed all restrictions prior to the time his party went out of power. Since that day there has been a steady and increasing demand for the automobile. Today there are approximately 2,500 motor cars operating on Prince Edward Island and the saturation point is not yet attained.

Automobiles do not provide the sole outlet for petroleum products on the island. Prince Edward island is often called “The Million Acre Farm” and farming is one of its chief industries. The old methods of farming have given place here, as in other parts of Canada, to the most modern machinery and practice. There are about sixty tractors in use.

The fishing industry is second only to agriculture, and here again, in the production of some important fish, the volume of business done by the fishermen is increased in known that the annual lobster haul alone exceeds $1,600,000.

Unfortunately, the population of Prince Edward Island is not increasing, but the inhabitants have helped materially to increase the population of sister provinces in the Dominion and to swell the farms and cities of many States in the republic to the south.

Forest Rangers of the Rockies

"Be sure your match is out before you throw it away;" the Forestry Branch cautions touring motorists. "Matches have heads but they can't think."

BY SIDNEY P. TOCKER

No man understands the menace of fire like the man who makes his living fighting it. From the minute he enters the service of an organization such as Imperial Oil, the hazards of fire cannot but be impressed upon him. And where such use is made of his work, he instinctively adopts the creed of the fire fighter.

I believe our company does more than any other industry in Canada to impress upon employees and public alike the danger of fire, and it supplements its warning with practical precautions in the nature of fire foam apparatus, sand, mechanical extinguishers, stringent regulations for conspicuous painting of pipe lines, boiler fires out on its tankers when handling naptha, forbidding smoking in the refinary, the warehouse, auto station and on the dock of tank steamers.

And haunting grimly over all advice is the dying, lifeless and unregretable figure of the disaster through disregard of fire hazards, while handling oil products in one form or another.

When the Bow River flows by the C.P.R. Hotel at Banff, Picture the transition after a forest fire.

1923. The Banff-Windermere Trail completes the top end of a 6,000 mile circular tour from Los Angeles to British Columbia, Banff, Calgary and back through the Yellowstone Park. Now imagine vast areas of this grand scenery, swept by fire—the undergrowth vanished, the pines but gaunt skeletons of their former selves, some leaning on others, some tilted over hanging the roots through which they used to draw the moisture for the life which has gone. The sweet scented air of the pines is replaced by the bitter tang of smoke and ashes; the homes of the protected animals laid to waste; the nesting places

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Paradise for the weary

The Water Hole at Talara where natives roll away their water supply by the barrel

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Where the Bow River flows by the C.P.R. Hotel at Banff.
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of the birds desolated. The whole area becomes one vast ash heap. And all through the criminal indiscrimination, ignorance or apathy of careless Man.

The upkeep of the Forestry Branch, its fire rangers and the Air Patrol constitutes but a modest insurance policy on Canada's timber areas. Of itself it is highly inadequate and requires whole-hearted support from the public. How many of last year's motor tourists would have visited Jasper and Banff and brought valuable business with them, had there been but desolation and smoke amid all of the forest beauty that greets them today? The value of the lost tourist traffic, which would not be regained for generations, cannot be estimated, and it has a direct bearing on the business of Imperial Oil. The foresight of some such possibility constitutes the work of the Air Patrol.

Alberta, while not a lumbering Province, still has an area of valuable timber land which is indeed a very valuable asset. The whole area is estimated at 5,416,000 acres, but at present much of this is not available as it is too far from the railways.

The areas from which most of the timber is cut are taken at present are the Crow's Nest country, on the Old Man River, the Peace River country and the upper part of the High River, Sheep Creek, Bow River, Red Deer River and Athabasca, Saskatchewan, Brazeau, Pembina, and the MacLeod. More timber is being brought in from the better watered parts of Northern Alberta as settlement progresses.

The Forestry Branch of the Dominion Government of Canada has set aside large areas as Timber Reserves and Game Reserves. The case of these involves protection against FIRE, the reforestation and the planting and seeding of favourable areas.

The Dominion Park area in Alberta is about 4,857,000 acres and is known as the Jasper, Rocky Mountain, Waterton Lakes, Buffalo, Elbow and Antelope Parks. Their chief value is their recreative and recuperative value as well as the preservation of natural scenic attraction and fauna.

These Parks have rightly earned the name of "Ten Switzerland's in one." And it is to protect these wonderful scenic areas that the Government organized the Air Patrol Station with headquarters at High River. Their work is some of the most valuable in the annals of the preservation of the Natural Resources of this wonderful Dominion.

The strength of the unit at High River is eight officers and twenty-three non-commissioned officers and men, under command of Squadron Leader A. L. Cuffe. The policy of the Air Force is to give its personnel every opportunity of becoming proficient in the air for duty by giving variety of work and courses of instruction. The various courses include seaplane training and gunnery paratroop work - aerial surveying and photography, and the many branches of airplane work.

Aerial Scouts and Forest Fires

On the eastern slopes of the Rocky Mountains the fire hazard in 1924 was increased by the prevalence of wet weather. No unnecessary flying is done from the station of the Royal Canadian Air Force at High River. The number of flying hours is spent entirely on the hazard, and amount to 3623½ hours; this is considerably less than the year 1922 which was a dry season, when the fire hazard existed for 10 months.

The territory patrolled at present includes the reserves of the Crow's Nest, Bow River and Clearwater. With fewer timber fires in the better watered parts of Northern Alberta as settlement progresses.

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Aerial Photography

In the meantime a big program of photographic work is in hand. In an unfavorable year of long snows on the eastern plains, the Air Force has done a large number of aircraft, was photographed with one aircraft, thus showing the great advance of aerial photography and methods. The ground work of the surveyors of the Topographical Survey of Canada is greatly reduced by having the photographs for guidance. An area of 5,000 square miles was photographed by the High River station. This took 226 hours of flying time in which 5,900 miles were photographed vertically and the balance obliquely. Certain areas were photographed in both ways in order to compare the results of the two methods of working. The results of the photos are being plotted in the Survey Department drawing offices and upon these will be based the revised map of the districts. The Fairchilds' camera is used as the standard for this class of work. It is an automatic film camera holding a roll of 75 feet of film, sufficient for 125 exposures 7½". The shutter is opened and closed by the same mechanism which winds the film. This can be set to give different intervals between exposures to allow for the speed and height of the plane, and also allowing for the amount of overlap required by the pictures.

Wireless Telephones

All the forest patrol aircraft are fitted with wireless telephones. At present only one way connection is used; that is, the aircraft speaks to the receiving station, but does not receive messages while in the air. Experimental work with a view to two-way communication is being continued. The aircraft is in constant communication with the base, which is linked up with the ground telephone system of the Forestry Service. This connects all the ranger stations with headquarters at Calgary. Warnings of any incipient fires can be transmitted from the air to the base and back again to the point nearest the reported fire.

The area patrolled is brought under inspection twice daily. The planes leave High River in the morning one flying to Eckville in the North and the other to Pincher in the south - refueling with Imperial Aeroplane Spirits and Mobiloil and leave for the base in the afternoon. The pilots on patrol report their position every 15 minutes and also report conditions in the reserves.

The system of wireless telephones is used in preference to Morse Code - although it has been found easier to maintain communication by the latter system, but when the telephone system is satisfactory it is preferable to Morse. The experimental work at High River during the last few years has resulted in the production of sets capable of maintaining communication to nearly 200 miles from the plane in flight to the base.

The warm and open fall of 1923 left a tremendous growth of grass and weeds. This combined with a warm and dry spring, particularly in the North, created a big fire hazard. This accounted for the large acreage burned over in 1924. The acreage burned over in all and 615,000 acres burned over, with a loss of timber estimated at 250,000,000 feet. Of this acreage about 400,000 were burned in the western end of the Lake St. John Lake Reserve and in the Sturgeon and Snake Lake Country, where there is a great deal of timber. These fires occurred in almost inaccessible country mostly muskeg land. Now comes the realization of the value

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The aerial survey at High River, Alta.

The forest fire has passed this way
of the air patrol work co-operating with the forestry protection. The fires in the well patrolled areas were incipient and the acreage covered was negligible as the fires were sighted in the early stages and checked so that the losses were correspondingly light.

The Causes of Forest Fires

Not a few fires developed during the spring from camp fires left by trappers on the winter trails. Moss and earth burn under the heavy snow coverings. These smaller for months sometimes and then break out with a high wind. In addition to this, the humidity in the North Country dropped to a low point. Many of the fires were traceable to settlers burning off when clearing land, and incendiarism is suspected as being responsible for some of the mysterious outbreaks. There was very little rain until the middle of July. One other reason for the low number of fires was that there was little or no coal moving over the northern lines owing to the coal strike.

In addition to their work in detecting and reporting fires in the patrolled areas those birdmen, hovering overhead, have a psychological effect upon the settlers and tourists, continually warning them that the danger of fire is always present and that they must combine with the Government to “Save the Forest.”

Number of Fires in Last Three Years

<table>
<thead>
<tr>
<th>Period</th>
<th>1922</th>
<th>1923</th>
<th>1924</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fires in all territory</td>
<td>1,191</td>
<td>841</td>
<td>619</td>
</tr>
<tr>
<td>Fires in Regions</td>
<td>41</td>
<td>36</td>
<td>121</td>
</tr>
<tr>
<td>Timber burned</td>
<td>309,000</td>
<td>8,900,000</td>
<td>18,900,000</td>
</tr>
<tr>
<td>Average burned</td>
<td>615,000</td>
<td>60,000</td>
<td>476,000</td>
</tr>
<tr>
<td>Average fire loss</td>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here are samples of the placards posted conspicuously around the parks:

This week will never miss a few pails of water. There is plenty more where this came from. Put lots on your fire before you leave.

LOST—thousands of feet of timber, because some careless camper has STARTED TO MAKE YER self a Social belt of timber, and has Stolen away without a final look at his camp fire.

You have had your travelling perm, forewood, horsedale, FREE. Putting out your camp fire will cost you nothing. Failing to do so may cost you a lot. MAKE THIS A CHEAP TRIP.

Greetings from Negritos

To those up north who feel, perhaps, that the Christmas season can be enjoyed only in the precincts of ice and snow, the members of Negritos Club feel that a short outline of the last festivities of the year ought to be given.

The first Christmas in Peru always appears unique because of the peculiar weather conditions which are such as prevail in midsummer at home, where we have been used to frost and snow and the attendant joys of skating, tobogganing and curling. Subsequent years, however, dispel the belief that there is only one way and one place to enjoy Christmas.

Last year, in addition to a Christmas Tree celebration for the kiddies at which gifts from the company were distributed, a dinner for the “old folk” was held at the club where a good deal of fun was caused when the medical fraternity indulged in defiant college yells amid the competitive voicings of geologists and other representative professions.

After dinner the Negritos Jazz Band provided excellent music for a dance which lasted until an advanced hour. A feature of the evening was an exhibition of the latest Colombian dance called the “Rotary No-stop.” This dance should gain favor in oil mining circles.

With 1925 started in earnest, we in Peru are looking forward to greater production and the determination to make Talara the premier port of Peru. Best wishes are extended to all our friends and co-workers in Colombia and up north.

Two Thousand Tank Cars

The work of Imperial Oil's Traffic Department extends from coast to coast and as far north as railways pole their noses.

Two Thousand Tank Cars

The work of Imperial Oil's Traffic Department extends from coast to coast and as far north as railways pole their noses.

To-day in Montreal, the next day back at Toronto, a quiet, unpretentious man may be encountered now and again in the corridors of the building at 56 Church Street. If you know him well you say, "Hello, Charlie. Back again? When are you going away?" And if you don't know him you ask who he is and they tell you it is Charles H. Lown, the Traffic Manager of Imperial Oil Limited.

If you number among the six out of ten who were not aware that there is such a department, the statement will be something of a revelation to you that not only have we one, but that it is perhaps the largest and best organized Traffic Department in Canada outside of the railways themselves.

The tremendous task devolving upon C. H. Lown and his traffic organization in distributing Imperial products to the smallest hamlet and most remote outpost makes a story of lively interest.

If it is a work requiring constant alertness and involving infinite detail, Think, for instance, of the records necessary to handle the 1924 business. In that year 2,007 cars were operated, and they made 41,756 shipments on which complete movement from shipping point to final destination and return, including junctions, had to be kept.

The mileage covered in making these deliveries was 82,756,000 miles. In other words, if one car had to make that same mileage within the period of a year it would have to travel around the earth almost four times a day for every day in the year.

The mileage quoted represents the delivery of 390,376,235 gallons of Imperial products, to effect which the equipment travelled over one-hundred and fifty railroads.

The annual freight charges run into millions of dollars, and as far as can be ascertained from the railways, Imperial Oil is the largest individual shipper. The Traffic Department is responsible for the prompt and correct payment of all these charges.

A freight tariff file has been built up over a number of years to a point where it now contains 3,000 individual issues. Without doubt it is the largest freight tariff file in Canada, and it would make a fair comparison with the largest tariff files of any concerns in the United States.

This freight tariff file comprises not only Petroleum Commodity rates in Canada, but rates from all petroleum centres in the United States to all of the principal Canadian destinations. Current tariffs are also preserved on many Special Commodity Tariffs such as lumber, coal, iron and...
Donald Grey Makes Himself Understood

In his sparsely-settled and rugged territory in the northwest corner of British Columbia, George Woodland serves what is probably the most cosmopolitan list of customers of any Imperial Oil district agent anywhere. Among the fishermen of the Charlotte Islands and the halibut fleets he has north of Europe men of every description: Finns, Swedes, Norwegians and migrants from many Baltic countries of which the names, on this side of the world, are scarcely known. In

on the habits and customs of the whites who have lived among them now for nearly a hundred years. Scattered through all these, of course, is a percentage of Anglo-Saxons, Canadians, British Islanders, Americans and Australians, and it is they who set the pace and are laying the foundations of the country's culture. But much of the business is done by members of the community who never saw Eastern Canada or the British

the mine camps of Stewart, Atlin and Alice Arm he caters to Slavs, Hungarians, Serbs, Italians and Montenegrins. In the salmon fisheries and canneries are Japs, Chinese, Swedes, Greeks and a sprinkling of Portuguese and Sicilians. In the paper camps, pulp mills, logging camps and pole camps are men of every nationality with Jean Baptiste holding a place of prominence. Up the Skeena and in the Babineos are prospectors of every degree of whiteness and a resident population of Indians who have taken

iles, and many of the missives that come to the district manager's desk are worthy of a place in the archives.

Here is one from Donald Grey, an Omineca Indian doing business as a merchant at a picturesque little Indian village just below Haselton. He has a typewriter and uses up-to-date stationery. He does his own stenography and correspondence. A glance at the letter will show that Donald makes himself understood.
Another Year

Some personal reminiscences of bygone days in the St. John Division

BY GEORGIANNA RUTTIN

TWENTY-EIGHT years of service! First with the office being located on Nelson Street, small quarters and still smaller staff, consisting of manager, cashier, ledger-keeper, stockman and office boy. The office boy in those days was really a minor executive; he shipped, invoiced, clerked, and junior boy. In addition, we had two salesmen covering the Province of New Brunswick, the Gaspe Coast, and Bay of Fundy points in the Province of Nova Scotia.

The Imperial Oil Company, Limited, took over the Eastern Oil Company, and with it, its employees.

For three years the St. John Division was operated as a sub-division under Montreal and, naturally, during that period a large number of employees were lost to the Company, which will probably explain why today the St. John Division there are only a few men and women whose years of service cover more than a period of ten years. Of this, later.

From January 1st, 1918, when New Brunswick, and again made a Marketing Division, the business has shown a steady growth; from 12 bulk stations to 26 bulk and 16 barrel stations, from 4 tank trucks 7 years ago American Kerosene was imported in wooden barrels by schooners, to empty barrels being returned by the same route, Canadian Kerosene among them were received in tank cars and barrelled at the refinery, siding. The idea of tankage at that time was in the embryonic stage. Direct shipments were made by schooner from New York and Boston to the trade at Fredericton, as well as to the Bay of Fundy ports. From this with the present system of distribution—bulk and barrel agencies dotted everywhere—International and Provincial Tank Wagons covering, roughly, a twenty-five mile radius from each large station.

Divers products also handled up to 1918; Sulphuric, Muratic and Nitric Acids, in carboys and tank cars, Raw and Boiled Linseed Oils, Turpentine, Dungs, Alum, and we must not overlook mentioning the line of Stoves, Heaters and Lamps, which were once an important line. Improved products, or improvements are the order of the day. Wooden barrels—last a poor container—have been replaced with steel packages. A large stock of refined oil and gasoline is carried at St. John, thus supplying certain of the New Brunswick tanks from this station cheaper than the products can be laid down, all rail, from the nearest refinery at Dartmouth.

Right here is a good place to mention the passing of the horses. Not a year goes by but that horse equipment is less than the previous period. The day is shortening when our trucks will be equipped with caterpillar wheels, overcoming the only reason why horse equipment is still being maintained. This is a prediction which will come true I firmly believe, within the next ten years. Doctors have equipped their Fords with caterpillar wheels for winter travel over the country roads. This idea will be worked out eventually for the heavier equipment.

Another indication of progress is the carrying of lubricating oils in bulk at the main stations and bringing forward the new Refiners lubricating oils in tank cars, rather than in barrels, thus effecting a great saving in freight. Speaking about lubricating oils brings to my mind the time when we were first applying Imperial Floor Dressing to our office floor.

I fear in a spirit of mischief, a little more oil than sufficient was used, and owing to the very porous condition of the floor, the finish was really an embarrassment, which apparently raised his ire, and our janitor paid the full penalty of his discretion and carried a painful memory with him for several days.

Another old-time recollection is that of one of our salesmen who reported that a Frenchman had occasion to give a representative of one of our competitors "Hail Columbia" for sending oil to him in keary barrels. Our salesman tried to appease him by saying "our competitor is not wilfully sending out slouchy barrels" and the Frenchman replied, "Oh yes, oh yes, they keep writing all the time to know why I didn't send back the empty barrels." I have often wondered whether other salesmen of the Company ever gave any consideration to the thought that so many Maritime Province men are today 'in executive positions in the Eastern Divisions of the Dominion. Mr. P. W. Gordon, Manager of the Hamilton Division, and Mr. W. E. McLean, Manager of Halifax Division, are both Nova Scotians. Mr. H. M. Powell, Assistant Manager of the Hamilton Division, and Mr. W. H. O'Dell, Manager of the St. John's (Nfld) Division was born at Newtown, P.E.I., and all of the following were born at St. John.

March, 1925

The Daily Review

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Dangers of Carbon Monoxide Gas

A WARNING TO MOTORISTS

Carbon Monoxide is colorless, odorless, invisible, and deadly.

Carbon monoxide may be formed by burning almost any kind of fuel without enough oxygen. A very small percentage in the air will cause headaches, then unconsciousness, and finally death. The blood has a great affinity for carbon monoxide and absorbs it from the lungs instead of the oxygen which is needed to sustain life.

An automobile engine running in an ordinary garage with doors and windows closed will produce enough carbon monoxide in a few minutes to cause death. If a person is alone in such a garage, he will usually be overcome without warning. The only safeguard is NEVER TO RUN YOUR ENGINE IN A GARAGE OR IN A CLOSED ROOM.

LESS THE GARAGE DOOR IS OPEN OR AT LEAST TWO WINDOWS. If your engine is running and you feel any headache or faintness, even if you think the vehicle is all right, go at once into the open air—there may be a pocket of gas in some corner of the garage.

If you find any one unconscious in a garage, drag him at once to the open air if possible. If you cannot do this, open the doors and windows wide. If the victim is breathing, send for help. If the victim has stopped breathing, start artificial respiration by the old method. Send someone else to call the police, or to take a message to your office floor.

TWO THOUSAND TANKS—Continued from Page Twelve

Delays in transit are the bane of transport, and the effort of every shipper is to bring the shipment to its destination without delay. When cars are held behind beyond the free time limit demurrage charges must be paid by the shipper to compensate the railways. In the fulfilling of more than one of the production of the Traffic Department had a man-sized job to keep the cars moving and eliminate tie-ups and demurrage. Did they do it?

Well, figures from the Canadian Car Demurrage Bureau state that of the cars handled in Canada during 1921, demurrage was paid on 66% of them. The demurrage report issued by Imperial Oil Traffic Department within the same period was only 32.5%, about one-twelfth of the rate for the Dominion as a whole.
JOTTINGS

Stock Quotes

The latest stock quotations before going to press give the following bids as on March 5th:

Imperial Oil (new issue) $31.00
International Petroleum $27.50

From Halifax

A most successful dance and bridge was held by Halifax Division at the Green Lantern Inn, on the last night of January. A tasty supper did much out to pleasant a evening.

The Right Way to Blow Your Nose

There is one time when it is safer to keep your mouth open—when blowing your nose. If you close your mouth when blowing your nose, the air pressure in the ear out the nose and particles from the nose and throat are apt to be dropped in the middle ear or Eustachian tube. These particles often start inflammation, earache and deafness. Opening your mouth while using those Christmas and birthday hardkerchief is a simple way of avoiding many ear troubles.

Safety Last

Lies slumbering here one William Lake; he heard the bell but had no brake.—DEAN TIMES.

At fifty miles drove Allie Pidd; he thought he wouldn't ask, but did.—HOME TIMES.

At ninety miles drove Eddie Shawn; the motor stopped, but he went on.—LITTLE FALLS TIMES.

Beneath this stone lies William Raines; ice on the hill; he had no chains.—HARRISBURG TELEGRAPHT.

Here lies the body of William Jay, who died maintaining his right of way.—BOSTON TRANSCRIPT.

Repose here one Adolf Lutie; he turned his head to watch a cutie.—MACON TELEGRAPH.

And Booher is parked in that's; he did not stop nor look nor listen.—HOUSTON POST-DISPATCH.

Hi Hubert, who lies in this here casket, turned in his seat to move a basket.—YOUNGSTOWN TELEGRAPH.

You are here no pedestrian's stone. They have a graveyard of their own.

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A Change

THE Changeless Coast of Talara," an article published on page twelve of the January REVIEW, was credited to the pen of L. M. Stone, who advises it is an error and that the contribution was written by Allan Campbell. The editor joins with Mr. Stone in regretting that this information was not received prior to publication.

"He Was Careful.... But"

"He was one of our most careful employees. He had worked for 15 years on that machine without an accident."

How often we have heard similar words re-explain to the victim of an accident. The fatalities and the scoffers at safety will say, "What's the use! If an accident is going to get you, it'll get you anyway."

Such an accident is sometimes hard to explain. The careful employee may have let his attention wander elsewhere at the critical moment or one of his fellow workers may have slipped on some unnecessary precaution. But his fifteen years of caution were wasted. A reckless or negligent employee might have lasted about six months on that particular job or perhaps a year if he was lucky. And even that extra fourteen years of freedom from accidents was worth the effort of being careful.

The Answer

To Last Month's Crossword Puzzle

JOINT COUNCILS, 1925

Imperial Oil Limited
Elected and Selected Representatives for the Year

MANUFACTURING DEPARTMENT

DELEGATES

Montreal Refinery

Elected
C. M. Hughes
J. McCarthy
M. L. Fairen
C. Abram
N. Winterhuffer
O. Tolumson
R. J. Stenkeren
D. D. Spencer
E. Thoeren
P. C. Morin
(Chairman)

Sarnia Refinery

Elected
C. M. Hughes
A. H. McDonald
George B. Emslie
J. J. Craven
J. H. H. Hunt
H. P. Napper
Thomas Dughe
J. Miller
Roy Carrall
Gordon Brown
John Moore
Sixtus Brown
William Keir
E. C. Tempens
D. H. Allen
(Chairman)

Regina Refinery

Elected
W. W. Stainsby
H. Matthews
Frank Chrysler
J. H. Smith
J. H. Callow
G. W. Brown
William Smith
E. H. Winter
W. F. Godfrey
N. H. Whalen
W. H. D. Alexander
D. H. Keating
R. E. Church
F. L. Thistle
C. G. Sturgeon
(Chairman)

Halifax Refinery

Elected
W. S. Pinto
W. J. Hillman
Fred Sellers
Joseph Wragg
G. W. MacDonald
E. Hart
James Broom
Russell Rexon
Albert Kindy
D. M. Allen
(Chairman)

Calgary Refinery

Elected
Fred Gardner
J. Murray
Peter Laps
t R. E. Napper
R. W. Mahone
W. G. Brown
F. C. Tempens
(Chairman)

Iroquois Refinery

Elected
A. A. Wilcox
W. Seppel
J. W. Jenkins
L. Rhon
J. Fraser
T. King
C. R. McAdoo
A. H. Martin
J. A. Hillson
F. J. Miller
(Chairman)

Marketing Divisions

Hamilton

Elected
J. H. North
S. J. Jones
Roy Robertson
Ralf Massin
F. W. Gordon
(Chairman)

Toronto (Princess St.)

Elected
J. Sims
S. Bright
S. Mckean
J. R. Pallott
E. Craven
N. D. Keating
(Chairman)

Winnipeg

Elected
T. J. Giffen
J. Murray
N. Thorne
C. S. Griffin
(Chairman)

Edmonton

Elected
J. G. Noble
Alexander Fraser
W. M. Murrin
B. E. Wilson
(Chairman)

Annunities and Benefits Committee

P. F. Sinclair (Chairman)
C. D. Dean
W. B. Elvestra
E. A. Oliver
E. A. Kennedy
G. L. Thompson

To Last Month's Crossword Puzzle
One ship goes east, another west,
By the selfsame winds that blow;
'Tis the set of the sail, and not the gale
That determines the way they go.

Like the winds of the sea are the ways of fate
As we journey along through life;
'Tis the set of the soul that determines the goal
And not the calm or the strife.

—Rebecca R. Williams