

# Grim Fight With Nature

"Peace hath her victories  
No less renowned than war."  
These oft-quoted words of Milton will occur to the mind of a reader of Mr. F. A. Talbot's latest book, which tells the wonderful story of the making of the Grand Trunk Railway, says the Canadian Mail, London. Yet as you read the book you have to confess that although railway building is a peaceful occupation, the story is one of war with nature—a war that claimed its heroes and its victims. The track of this new continental line passes many a wayside grave wherein lie the bones of a hero who lost his life in the terrible fight with nature that the pioneers of this railway fought in the practically undiscovered country through which the line runs. The story told by Mr. Talbot is one of heroism, undaunted courage, and physical endurance, and a veritable battle of the strong, for the weaklings were soon eliminated. None but the toughest and the hardest could stay long in that long and desperate struggle against the forces of nature.

Here is a faint idea of the prospect that confronted those entrusted with the reconnaissance (in Northern Ontario): "Conceive a vast country rolling away in humps, towering ridges, and wide yawning valleys, as far as the eye can see, and with the knowledge that the horizon can be moved onwards for hundreds of miles without bringing about any welcome break in the outlook. On every hand is interminable forest, a verdant sea, except where here and there jagged splashes of black and brown betoken that the fire fiend has been busily at work. The trees swinging wavelike before the breeze conceal dangers untold beneath their blanket like branches, the existence of which are beyond contemplation until one is brought to close grips with them. Here it is a swamp whose viscous, treacherous mass stretches for mile after mile to all points of the compass until it attains an area sufficiently large to absorb an English county."

## Trackless Forest

"The forest is trackless save for narrow pathways, some of which are scarcely distinguishable, and are merely inches in width, wandering in apparent aimlessness through the gloom to one knows not whither. One cannot wander far from the trail beaten down by moccasined feet of the Indians without having to fight his way foot by foot with the axe, for the bush stands up impregnable and bristling with snags. Advance must be made warily to avoid sudden immersion in a swamp, while, if astride of a pack horse, he must be ever on the alert to spring clear the moment one's mount gets into difficulties. In summer the ground is well nigh impassable, for it is soft and treacherous as quicksand, and advance is reckoned in yards per hour. In winter when the ooze has become hardened by the grip of the frost, and snow has covered the whole with a thick pall, progress is easier and more rapid. But winter brings fresh dangers peculiarly its own. There is the blinding blizzard, the relentless drift, the slush which superficially appears sufficiently strong to withstand one's weight, but collapses beneath one's feet and leaves one floundering waist high in a freezing slough. Then there is the cold—the pitiless low temperature which penetrates the thickest clothing, for when the thermometer is hovering about 35 deg. or more below zero, supreme ingenuity is required to keep the blood circulating through one's veins and to avoid that terrible enemy frost bite."

Commissariat is naturally a very serious matter in surveying a railway across such wild country. In the winter supplies are brought in by dog sleighs, and weary work it must be for the drivers who traverse long distances—even as much as 350 miles—all alone. "One French Canadian," says the author, "who had dog trained supplies through some of the roughest parts of the country, related to me how on one occasion his team played every imaginable trick when they were first brought under his charge. Moreover, they were the most ferocious and wicked brutes he had ever handled. It was the first day out. He was lining up in the morning to harness them when they broke into rebellion, and in a combined movement made a rush at him. He clubbed the first comer with his rifle and then set about the others with his whip. Standing with his back to the wall of the shack, he laid out right and left with his murderous thong as the enraged animals sprang at him. For some minutes the battle raged furiously, the yell of the dogs as the lash of the whip got home being furious. Then it suddenly dawned upon the brutes that they had met their master, and they un-animously drew off and lay down panting. For some minutes he stood still watching developments before, whip in hand, he approached the nearest dog, who happened to be the leader, it gave a savage snarl but showed no further fight, so was harnessed quickly. Then it sprang to it feet to take up its position in the team. The other animals suddenly followed suit, and the train set out as if nothing had happened."

## Filling Up Swamps

The tale of the grim tussle with nature carried on by the hardy constructors of the line loses nothing in the telling of Mr. Talbot's hands. The labor necessary to fill in muskegs, large, deep swamps, was almost endless. These had to be filled by pouring in tons of rock and gravel. Progress was necessarily very slow, weeks being occupied

in progressing 100 feet, owing to the swamp's insatiable appetite.

Once the track is cleared and graded and the steel is begun to be laid, a change is soon visible on the prairie. Towns spring up rapidly. On the completed line between Edson and Winnipeg no fewer than 120 towns have

"This mangrove tree grows in either fresh or salt water swamps, and even in water three or four feet deep. The limbs of the trees send shoots or roots down into the water and so a thicket of mangroves is a matted mass of trunks and limbs and roots. Deep down under the surface of the water cling bunches of single oysters, and thus are formed the oyster groves I had heard of."

"We poled our dory round to the south of the island, but could not get very near, as we were scraping bottom all the time. We passed over numerous oyster beds while doing so, and, with an ordinary rake, which had been

# THE FRIEND OF CHRISTMAS



PHOTOGRAPH OF THE GREAT AUTHOR TAKEN ABOUT 1869.

"A MERRY CHRISTMAS, GOD BLESS US!"  
"GOD BLESS US, EVERY ONE."

been created, all owing their existence to the G. T. P. Mr. Talbot has much of interest to tell about the growth of prairie towns. Take Melville, for instance. Three years ago it was not dreamt of, and its site was a mere expanse of prairie. In three years it became the home of 1,500 people.

Perhaps the survey of the route through the Rockies provides the most exciting reading. The narrow escapes from starvation, owing to loss of supplies from one cause or another, from drowning, from perils of the mountains, the terrible difficulties to be overcome, and the pluck of the pioneers are vividly described.

The Grand Trunk Pacific will, when completed, be one of the wonders of the age, and its building makes a tale of heroism. Moreover the construction of it has been carried out with the most perfect organization. Without that organization it is difficult to see how the army of workers on the line could have throughout its length been fed. Space will not allow us to dilate upon the skill of the engineers in building a line with such low gradients as are maintained throughout its length, nor to describe the pictures of life at the railway head as given by Mr. Talbot. He has evidently made a most careful study of his subject, and has succeeded in bringing home to us what marvellous skill and heroic fortitude and perfect organization have been needed to build the line. Moreover, it must have meant many months of personal experience of the rough life of a pioneer to write the book, for no one could write as Mr. Talbot does without such experience.

There is no end to the natural aids to living in South America. They meet you at every turn. A correspondent, who recently returned from that part of the world writes:

"Business recently called me to Honduras. I had often heard of oysters growing on the trunks and branches of trees, and my friend and I set aside a day to investigating the fact. Our dory cut the water like a knife and slipped along rapidly and easily, with hardly a ripple in her wake, and in about half an hour we had left the town with its convent and shipping and soldiers' barracks behind us. We were nearly abreast of an island called Mona Cave. The front of it is embowered in graceful cocoanut trees and the lower part trends off into swamp and is covered with a dense growth of the red mangrove.

provided, we hauled aboard a lot of oysters. They were small and fat, but tasted all right, and our boatman swallowed them with a relish. I did not care much for them myself, except as curiosities, for the mud that stuck to them did not smell appetizing."



STAFF OF LETTER-CARRIERS AT THE VICTORIA POST OFFICE

Reading from left to right: Rear row—Frank Clark, E. J. Lambourn, R. Wright, W. E. Cave, Percy Murton. Next row—A. Grist, Frank Wright, George Baird, P. Walker, T. Watling, Percy Frigatt. Next row—Frank Holdridge, Christian Sivertz (secretary), Arthur Bird (president), F. Colley. Next row—E. G. Ray, Harry Webber. In front—A. C. Charlton, M. D. Small.

"Talk 'bout railroads bein' a blessin'," said Brother Dickey, "des look at de loads an' loads 'er watermelons deys haulin' out de state, ter dem folks 'way up North what never done nuthin' ter deserve sich a dispensation!"—Atlanta Constitution.

# A Canadian Copper King

George Iles, of New York, writing in the Montreal Witness, says:

Dr. James Douglas, of New York, gives \$100,000 of the million dollars now being collected for McGill University, which accorded him ten years ago the degree of Doctor of Laws.

Dr. Douglas was born in the city of Quebec, in 1838, the son of the most eminent Canadian surgeon of his day, who is still remembered by old Quebecers as a man of exceptional force of character, and an enthusiast for education. Adjoining his house he established the first school of medicine in Quebec, training many a physician who afterwards became famous north or south of the border. His large investments in mines brought his son into that field of industry, so that when Dr. James Douglas went to the United States in 1875, it was not long before his services were in request by the leading firm of Phelps, Dodge & Co., of New York, who, having long been metal merchants on a vast scale, were now becoming owners of mines. Today this firm has expanded into a point stock company, possessed of immense fields of copper ore both in Arizona and Mexico. Its mines, smelters, and the railways joining the whole to El Paso, Texas, are under the direction of Dr. Douglas, as president. Associated with him in his tasks are his sons, Mr. James Douglas and Mr. Walter Douglas. It is estimated that Dr. Douglas directs the production of one-ninth the copper production of the world.

His education began at Laval in Quebec, and was continued at Queen's College, in Kingston, and in Edinburgh University. On graduating he took an extended tour which included France, Italy and Egypt. At a later period he studied theology and was ordained as a clergyman of the Presbyterian Church. He has preached in St. Paul's and St. Andrew's churches in Montreal, and, when more than forty years ago, the Rev. Dr. Mathieson, pastor of St. Andrew's, needed an assistant, he invited Dr. Douglas to the post, which would have probably carried with it succession to the pastorate.

But the career of the young man was to follow other lines than those of a minister of the Gospel. He began work in his native city as a mining chemist, and, finding Quebec an unproductive field, he proceeded to the United States. Shortly afterwards he received from Phelps, Dodge & Co., of New York, a commission which proved to be the turning point in his career. That firm owned the Copper Queen mine in Arizona, and it was offered the lands immediately adjoining. Were they worth buying? Dr. Douglas was requested to examine these lands and report. He found nothing of especial value on the surface, but the veins of the Copper Queen were so wide and rich that he felt certain that they extended to the adjacent property. As this was priced at but \$40,000, he advised purchase. His principals bought, and they never secured a better bargain.

## His Courage Rewarded

quired, proved to be of amazing richness. But one morning, in 1884, after the habit of mines, they threatened to peter out completely. Both old and new veins seemed all but exhausted, and fresh leads could not be discovered. With undaunted pluck Dr. Douglas kept on prospecting, and, one day, he struck a deposit of wonderful value. This lode for months yielded about twenty-three per cent of pure metal, fif-

pete with other ores less troublesome in composition? Simply by burning out the sulphur with a stream of heated air, on the plan by which a Bessemer converter burns out carbon from pig iron, leaving only pure metal behind. This method reduces to minutes what of old demanded hours, makes hand labor almost unnecessary, and is performed with allied tasks at the city of Douglas, Arizona, which has a population of nearly eleven thousand, where ten years ago there stood but a single tent, used as a saloon.

## A Drop in Freight Rates

In 1885 the railway station nearest to Bisbee, the site of the original Copper Queen mine, was Fairbank, and teaming for the intervening thirty-seven miles cost \$7 a ton. Today the El Paso and Southwestern railway, controlled by Dr. Douglas and his associates, charges only 22 cents for carrying a ton ore these thirty-seven miles. A daring feat of engineering is displayed on another of the lines—the Morenci Southern railway, leading to the Detroit mine. In a distance which, a sa-bee-line, is little more than a mile, this road rises 500 feet by four loops stretched out as a huge spiral. To this mine, perched on a range of hills absolutely arid, water has to be lifted from the San Francisco river to a height of 1,500 feet. Both here and at the mines of his company in Mexico, Dr. Douglas has installed gas engines of high economy. They yield a horse-power for an hour with a pound and a quarter of coal, or two pounds and three-quarters of air-dried oak. Good steam engines would show merely one-half this efficiency.

## Where Does All the Copper Go To?

One evening, at his home in Spuyten Duyvil, I asked Dr. Douglas: "Where does all the copper go to?" He replied: "An impression prevails that electricians are the chief buyers, with their enormous demands for telegraph, telephone and railroad circuits, their long-distance transmission lines, their windings for dynamos, motors and transformers. But that impression is wrong. A copper wire stays where an electrician puts it, and never rusts nor wears out; but copper for the brasses and bronzes used in machinery is constantly wearing out, and on so huge a scale as to create the principal market for copper. The grain or two of metal shed every hour as dust by a car-axle seems a trifle, but multiplied by a number of car-axes steadily in rotation it is no trifle, and brings to the copper miner his best customer. Then please remember that many roofs, gutters, and cornices are now built of copper, whereas thirty years ago, iron or even cedar shingles were deemed good enough."

Dr. Douglas lived for a year in Chili, and has high esteem for the mineral and agricultural resources of that country. He has repeatedly visited Spain, the mother country of Chili, where the Rio Tinto copper mines are among the best in the world. These deposits were worked by the Phoenicians two thousand years ago. Those skilful miners left behind them vast mounds of debris separated from their ores; so perfectly did they complete their task that no modern method, says Dr. Douglas, however economical, is worth applying to their enormous refuse-heaps.

## A Many-Sided Man

For all the burden of his administrative cares, Dr. Douglas is a man of letters, a connoisseur of art, and an active and generous friend of education. His aptitude as a photographer is remarkable, and was acquired in the old days when collodion produced pictures still unrivaled in delicacy and depth. In 1895 he wrote a sterling brochure on Imperial Federation and other political possibilities of the Dominion; this was published by Putnam's, of New York and London. Through the Burrows' Brothers Company of Cleveland, Ohio, he has published "Old France in the New World," a history of Quebec in the seventeenth century. Last year he edited his father's autobiography for distribution to his friends. He was for many years a trustee of Queen's University, at Kingston; and he has come liberally to the aid of Morrill College, Quebec, where he was at one time the professor of chemistry. His father, a distinguished alienist, was for many years in charge of the Asylum for the Insane at Beaufort. Dr. Douglas has inherited his interest in the mentally afflicted, and has given a spacious area as a recreation ground to the Protestant Asylum for the Insane at Verdun. One of his keenest interests is in the establishment of public libraries. Long before he became a man of fortune he founded and maintained three public libraries, two in Arizona, the third at Spuyten Duyvil.

Through all the years of his residence in the United States he has remained a British subject. To the credit both of himself and his neighbors, this has not stood in the way of his being appointed a scientific commissioner to represent the United States in Europe. His brethren of the mining profession hold him in the highest regard. In 1901 he was elected president of the American Institute of Mining Engineers, retaining that place to two years—an unusual honor. During 1901 the institute paid a visit to the Maritime Provinces of Canada. It fell to the lot of Dr. Douglas to deliver many addresses at Halifax, Sydney, Pictou and elsewhere on his tour. His audience will long remember the pith and fire of his speeches.

Condescending Chappie—I weally can't remember your name, but I've an idea I've met you here before.

Nervous Host—O, yes, very likely. It's my house.—Sketch.

ten times as much as does ordinary ore. To be sure this deposit had limits, and by degrees the ore grew leaner and harder to treat. As deeper veins were reached, the copper was found united to sulphur. How could this ore be brought to com-