

BUILDING OF PANAMA CANAL IS TRIUMPHANT ACHIEVEMENT



Ultimate Success Demanded Solutions of Problems of Diplomacy, Health and Engineering; Failure of French Furnished Valuable Experience to Americans.

It (the International News Service) said there was a way by water, said the Forty-niners, "we could all get there."

They said it in the mire and the miasma of the Black swamps, now Gatun lake. They said it by the Chagres banks in the hot season, when death, grim and dreadful, marched a corporal of the guard. They said it climbing the Little Divide, the neck vertebrae of the Sierras. They, the dreamers of gold, they, the dreamers of the unknown, they were the men who first planned the Panama canal.

Morgan, the buccaner; Yernon, the bravo; might have thought dimly of the thing as a way out, but to them, from that day on, it was a way to live with them, it was impossible.

But on the mule-back trail, astride the burro, totting behind the pack train, the striding through the deep rut and the sticky adobe of the road that marked the way of the freighters, where swarmed (and died) the thousands rushing to the golden sands of California, was born the colossal idea.

Enter the Aspinwails.

Then came Aspinwall, the intrepid. Three generations had built up to this man. His grandfather had crossed the sea and had dreamed of conquest of foreign lands and foreign markets. His father had owned the ships and made ventures that built up the Aspinwall fortune. William H. Aspinwall was born and bred in New York. He profited by the courage and the foresight of both ancestors.

When, from the helicon-bordered trail, marked by the bones of some of those who had gone before, a cry went up for a way, it was Aspinwall who heard. He had been a clerk, but he knew how to command.

So one year after the first rush to California, in 1850, Aspinwall told two friends, Henry Chauncey and John L. Stephens, of his plan to cross the Isthmus. He already had in mind a waterway.

When Aspinwall reached the Isthmus and ventured into that endless, terrible morass he was convinced that a canal was possible.

But the idea was fixed. Out of it came the first railroad across Panama. It was pushed to completion, with unexampled speed, backed from the start by Aspinwall, and his two business associates.

It was said that every tie on the railroad stood as a tally for the death of a man. This was not true quite, for there were 500,000 ties.

From the start the railroad succeeded wonderfully. Aspinwall was able to retire in 1856.

SETTLE and Ramezes II thought of a canal to marry the seas. They reigned in Egypt between 1550 and 1300 B. C. A waterway actually was constructed by them from the Nile to Lake Timsah, and thence to the Red sea.

This canal was choked by sand. A new canal was started by Necho, the son of Psammetichus I in B. C. 600. It was not finished until 488 B. C., when Darius Hyastaps broke down the dykes and let the waters of the sea flow into the Nile. Again, in time, the sands intruded.

Centuries lapsed before finally Ferdinand de Lesseps pointed a final triumphant way across Suez.

This had an important bearing on the project at Panama. Suez proved the value of such a project.

What De Lesseps succeeded in doing at Suez he tried to do at Panama—and failed.

Work began in 1876.

France began her brave and futile project in Panama in 1876. In 1879 De Lesseps took charge. In 1889 the first dirt flew. That was the tragedy of it. No preparation, no protection for the working army from the deadly tropic sun, from the deadlier tropic sickness.

It was a civil company. Funds were raised by popular subscription in France. De Lesseps estimated the need of \$120,000,000. Much of the money was raised by government lottery. The whole French nation went into a game of chance.

In nine years 104,100 patients died of yellow fever at the Ancon hospital. All were white persons and nearly all French. Outside the hospital the deaths

from yellow fever numbered 2632. Other diseases in the nine years laid low 5618 in the hospital and 11,235 outside. Best estimates place the total death score at 24,000. France was horrified.

When the work stopped 75 per cent of the remaining workmen were in hospital.

Tragedy on Financial Side.

On the financial side was another tragedy. Examination proved that \$200,000,000 had been received and expended. The number of stockholders reached a total of 800,000. Of this expenditure \$18,000,000 had been paid for the Panama railroad. Another \$157,000,000 had been spent on the isthmus. In Paris \$78,000,000 had been paid out in "dividends" to the investors, though not a penny had been earned.

Revelations that followed filled France with humiliation, the whole civilized world with amazement. The chief financial agent had received 6,000,000 francs in commissions for sale of stock, and for "publicity," another word for bribery.

Another financial agent got 4,000,000 francs for services and commissions. Charles de Lesseps confessed that he had paid one agent 600,000 francs because of his great influence with the government. The French minister of public works admitted that he had accepted a bribe of 75,000 francs and paid over 75,000 francs out of this money, to the man who had tempted him to accept the bribe.

Ferdinand de Lesseps and his son Charles were sentenced to fine and five years in prison. The sentence against the son was subsequently annulled. That against the father was never executed. Impoverished, disheartened, De Lesseps, then 85 years old, died in December, 1904.

WHEN the French workers on the isthmus were decimated by fever and disease, when the money of France was wasted in bribery and stolen by dishonest officials and when bankruptcy and then disgrace ended the project and sent the perished De Lesseps to a dishonored grave, the United States was struggling to rise after another

Even then the seaboard commercial interests, the shipping interests, urged that this country was the logical builder of the canal. But the United States could not then pick up the burden that France had been forced to put down. It was not until 1904 that this country bought the rights of the second French company for \$40,000,000.

Dismissal Over Route.

Prior to this there had been much discussion during all the years that had passed since the Oregon finished her 15,000 mile run on May 23, 1853. Many had favored a canal across Nicaragua as more practicable than one across Panama. Panama was represented as a country, unstable, volcanic, subject to earthquakes and upheavals, physical and political.

A second French company had succeeded the first, organized in the wrecked, sinking like a phosinic. The company had a relatively small capital, and about all it had been trying to do was to preserve the physical property at Panama in as good condition as it remained. It had continued to employ a force of from 1000 to 2500 men during the interval—this to maintain its concession from Colombia.

What the United States contracted to buy was a concession to employ a force of thirty thousand four hundred and thirty-one buildings, including offices, quarters, warehouses, shops, hospitals and terminal sheds, usable structures worth \$2,544,000.

An immense collection of dredges, tugs, barges, excavators, cars, locomotives and other machinery and appliances, all of it rusted and archaic, but estimated at \$3,112,000.

Work done by the old and new French companies, with an estimated removal of 25,000,000 cubic yards of material at a cost of little more than \$85,000,000 to the French. The present value of this work was estimated at \$35,250,000.

Maps, drawings and records gathered by the French engineers, valued at \$2,000,000.

Ship channel, Panama bay, \$500,000. Clearing, roads, etc., \$100,000. Of the purchase price of \$40,000,000, the sum of \$24,000,000, minus obliga-



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tions, went to the old French company, which spent \$200,000,000.

The Republic of Panama received \$10,000,000.

REGARDING the purchase of the canal rights from France, or the French company, the American people were agreed. The order to the president, spoken unmistakably in every state, echoed from cliffs of Eastport to the hills of San Diego, was to buy.

But regarding the acquisition of the right to build a canal in the first place, there has never been agreement. It has been the subject of controversy from the beginning; it will remain a matter of dispute to the end.

Theodore Roosevelt has summed up the argument in the following paragraphs, defending the action of the government.

Through two army officers, who had visited the isthmus in September, I gained concrete and definite information. They informed me that, owing to the dissatisfaction because of the Hay-Herran treaty, a revolution was certain to break out on the isthmus, and that the people were in favor of it, and that it might be expected immediately on the adjournment of the Colombian congress without ratification of the treaty.

Ready for a Revolution.

In response to my questioning, they said they were certain that a revolution—several different revolutions were being planned independently of one another—would occur after the adjournment of the Colombian congress in October; while on the isthmus they had calculated that it would not occur until after October 20, because not until then would a sufficient quantity of arms and munitions have been landed to supply the revolutionaries.

Acting in view of all these facts, I sent several naval vessels to the isthmus. The order to the American naval officers were to maintain free and uninterrupted transit across the isthmus, and with that purpose, to prevent the landing of armed forces, with hostile intent, at any point within 50 miles of Panama. These orders were precisely such as had been issued again and again in preceding years—1890, 1891 and 1892, for instance. They were carried out.

Their necessity was conclusively shown by the fact that a body of Colombian troops had landed at Colon and threatened a reign of terror, announcing their intention of killing all the American citizens in Colon. The prompt action of Captain Hubbard of the gunboat Naahville prevented this threat from being put into effect; he rescued the imperiled Americans, and finally persuaded the Colombian troops to re-embark and peacefully return to Colombia.

With absolute unanimity the people of the isthmus declared themselves an independent republic, and offered immediately to conclude with our government the treaty which Colombia had rejected, and to make its terms more favorable to the United States. No bloodshed whatever had occurred, and it could not occur unless we permitted the Colombian troops to land. The Re-

public of Panama was the de facto government, and there was no other on the isthmus.

But of the two, France had more completed its treaty, took possession of the canal zone, and in that strip has since constructed the Panama canal, to the final success of the uniting of the waters of the Pacific and the Atlantic.

WHY did France fail in Panama and the United States succeed?

"Because France had no Goethals and no Gorgas," will be the answer uttered by everybody.

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Work of Colonel Gorgas.

Colonel William Crawford Gorgas went into the Panama canal zone when quarantine was simple there and malaria, yellow fever, the plague, and other diseases were endemic. The death rate was 49.4 per 1000 of population. In 1913 the death rate has been cut down to 2.13. This means that the Panama zone has been made healthier than many American cities.

Smallpox, plague and other such virulent diseases have been banished altogether. In all the time that Colonel Gorgas has been on the isthmus there has been only one epidemic of yellow fever, this in 1905, and it was checked after 37 employees had died.

Colonel Gorgas has effected a sanitary organization as wonderful as the greater organization of workers formed by Colonel Goethals. In Gorgas' department there are 1300 men, each man trained in the methods of killing off the deadly mosquito.

While the French toiled "yellow jack" raged through the towns on the seaboard, malaria held wild and fatal debauches with wasted laborers, and the dread "blackwater fever" of the Chagres Valley sapped the strength from the non-immunes. Elephantiasis assailed the negroes and beriberi took its toll.

Colonel Gorgas made the isthmus as safe almost for the non-immune as for the immune blacks from the West India islands. So the force was able to exert itself and there was emulation to do things. This the French could not get.

Lesson for World.

Incidentally, Colonel Gorgas has instructed the whole world how to meet and worst the mosquito. Under his leadership was evolved a system for ridding a country of mosquitoes that has proved marvellously efficient and at the same time inexpensive.

Small pools near the sea are connected with tidal waters and the rise and fall of the tide, this moving water makes it impossible for the wrigglers to develop. A way is opened for the

tiny fish to kill the mosquito larvae. Smaller pools inland are covered with petroleum. Coming up for air the wrigglers find it impossible to get it through the oil and die.

The whole Canal zone is treated in this way. The country has been changed from the dreaded "Death Hole" of the old days to a summer resort, world famed for its healthfulness. This has been done at an expense of \$1,600,000.

A thousand proofs might be given of the wonder wrought by Colonel Gorgas, but one will do. The sale of quinine on the Canal zone is now practically nil—not as much of the drug is purchased as would be sold by one busy drug-store in the United States. In 1906 the amount of quinine sold at retail to the natives of the zone was 1,575,000 two-grain capsules.

Less than nine years the real constructive wonder of the world has been created on the Isthmus.

The canal cost, despite the slides and countless obstacles unlooked for, will be within the estimate of \$375,000,000. The work is a year ahead of time.

A Wall Across Gandy.

Tourists travel half around the world to see the Chinese wall, marvelling in its immensity. The earth moved at Panama—the earth and rock—would build such a wall across the United States, from New York to Portland, afloat.

The man who has gazed a car load of loam in his yard will understand dimly what it means to say that it would require a train of flat cars 100,000 miles long to carry the excavated material at Panama. This train would reach five times around the globe.

The number of men on the payroll rose to 45,000 in August, 1910. Of these 3000 were Americans and the others were Italians, Greeks and Spanish laborers and colored laborers from Jamaica, the Barbadoes and other West Indian points.

Perhaps the average size of the labor army at Panama has been 35,000 men. It has been a constantly changing force, of necessity, though wages paid have been high. Wages for skilled labor were twice, or nearly twice, the wages paid in the United States. Boiler-makers, for example, were paid 65 cents an hour, with time and a half for over time, 75 days' leave of absence and 30 days' sick leave.

Set Pace for World.

What these men have done at the isthmus is to set the pace for the world in construction work. In excavation records were made that have astounded the engineers of every country.

An average cart load is a cubic yard of earth. The French expended \$80,000,000 in actual work on the isthmus and left for the builders of the new canal 25,305,000 cubic yards of excavation usable in the new plan.

The American canal diggers at first aimed to reach 1,000,000 cubic yards a month. For more than two years the average monthly total exceeded 3,000,000 yards. In one month it reached 4,000,000 cubic yards.

To conceive what this accomplishment is, even for an engineer to picture it, it is necessary to consider that



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Top, left to right—Colonel Goethals, engineer in charge of the Panama canal; water pouring through four 26 inch pipes in Gamboa dike into Culebra cut prior to the blowing away of the dike; this water being admitted to act as a cushion against the discharge of the explosive.

Bottom, left to right—Pump house at Gamboa dike partially destroyed preliminary to the blowing away of the dike October 10; Colonel Gorgas, chief sanitary officer of the canal zone, whose work made the actual construction of the canal possible.

nine months of the year at Panama is a rainy season.

When unfavorable weather compelled the work to stop, the organization achieved its average speed, in the wet months, precisely as in the dry months. The aggregate excavation exceeded 22,445,765 cubic yards.

Considering the wages paid, and the cost of living, the laborer's job at Panama was the best offered anywhere. The skilled laborer also could scarcely do better. The government looked upon these men as wards.

The employe was provided with free

quarters, and a married man with a modern house. The house was furnished. The doctor responded in case of sickness and the government footed the bill. Even the druggist's charge for medicine was paid by Uncle Sam.

The ice man hammered with his long ax at the door and left a chunk that in the states would be a ten-cent piece, and the work was at government expense. Light was furnished free and there was no charge for fuel and no water bill.

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