## CHAPTER III

FIRST TRANSIT ROUTES ACROSS THE ISTHMUS — EARLY PROJECTS FOR A WATERWAY — THREE CENTURIES OF SPANISH RULE AND OBSTRUCTION

THE first transit route across the isthmus for the transportation of gold, silver, and merchandise from the various Spanish colonies on the Pacific to Spain ran from the city of Panama to Nombre de Dios, on the shores of the Caribbean, a distance of about ninety miles. It was cut through the forest and jungle and over mountain tops and across mountain streams, and was roughly paved with stones. It ran from Panama in a northeasterly direction for about twenty miles to a point on the Chagres River, which was given the name of Venta Cruz, changed later to Cruces. Thence it extended northward for about seventy miles to Nombre de Dios. A line of posts was established along the route. It was put in use in 1519, and was the sole route between the two oceans till about 1535, when the Chagres River between Venta Cruz and the Atlantic, a distance of about thirty-six miles, was made navigable for boats of light draught, and a water route was established between Venta Cruz and Nombre de Dios. The land route between these points was not abandoned, however, but continued to be used in con-

nection with the water route. So well was the paving laid that parts of it remain in position to-day, and the entire trail from Panama City to Cruces is open and is used by the natives as a highway for pack-mules and ponies. In 1597 Puerto Bello was substituted for Nombre de Dios as the Atlantic terminus. This town, which was situated about twenty miles northeast of the present city of Colon, and nearer to that city than Nombre de Dios by about fifteen miles, was in a bay which had been visited and given that name by Columbus in 1502. It was taken and sacked by Morgan in 1668, previous to his descent on Old Panama.* It is an interesting fact that when the American builders of the canal were in search of suitable sand and cracked stone with which to construct the locks at Gatun, they found the former at Nombre de Dios and the latter at Puerto Bello, erecting temporary quarters and machinery at both places for the purpose of securing the needed supplies.

In addition to the Panama route there were others across the isthmus at Tehuantepec and Nicaragua which at one time were of great importance. The use of these overland routes led naturally to talk about the possibility of opening a waterway between the two oceans. As early as 1529 Alvaro de Saavedra Ceron, a follower of Balboa who had made a voyage along the coast of the isthmus, proposed to connect the two oceans by a waterway, mentioning as suitable places

* Sir Francis Drake attacked it on his second freebooting expedition, but was repulsed and died of fever on board his fleet, lying off the harbor, on January 28, 1596.

The American settlement and quarry plant at Porto Bello.

View from old Spanish fort, looking seaward, December, 1911.

Panama, Nicaragua, Darien, and Tehuantepec. Each of these lines had its advocates, and from the outset there was keen rivalry between the advocates of Panama and those of Nicaragua.

Charles V, whose interest in the question was constant and keen, issued a royal decree in February, 1534, directing a survey of the lands between the Chagres River and the Pacific for the purpose of deciding as to the most effective means of establishing water communication. This is the first formal step of record toward the construction of an isthmian canal. The governor of the Panama region, Pascual Andagoya, who made the survey, reported that the work proposed was impossible, and that no king, however powerful he might be, was capable of forming a junction of the two seas or of furnishing the means of carrying out such an undertaking.

This report apparently discouraged Charles, for during the remaining twenty-two years of his reign he took no further steps in that direction. He abdicated in favor of his son Philip II in 1556, and this monarch, after directing a survey of Nicaragua in 1567, and receiving a report quite as unfavorable as that which his father had received in regard to Panama, entered upon a policy which postponed all consideration of an isthmian canal for two centuries.

The basis of this policy was the conviction that a waterway would be a menace to that monopoly of South American commerce and products, including the rich output of the gold and silver mines of Peru, which Spain was able to maintain through her control

of the land routes of the isthmus. Philip realized as fully as did Sir Walter Raleigh the value of the position held by Spain, and undoubtedly concurred in the latter's statement to Queen Elizabeth: "By seizing the Isthmus of Darien you will wrest the keys of the world from Spain." He knew that so long as the monopoly of isthmus transit remained unbroken Spain held the "keys of the world," and he not only opposed the construction of a canal on the ground that, since the Almighty had divided the two oceans, for man to unite them would be to invite Divine wrath, but also forbade, on penalty of death, the opening of new land routes. This policy was so attractive to Spain that it was continued till the end of her three hundred years of South American domination, or till the beginning of the nineteenth century. During all that time no progress whatever was made in the direction of a canal, and no information was accumulated in regard to the physical structure of the isthmus.

When Humboldt visited Central and South America, in the early part of the nineteenth century, he spoke of this lack of accurate knowledge, saying that the elevation of no mountain, plain, or city from Granada to Mexico was known. He gave conclusive evidence of his innocence of such knowledge by proposing no less than nine routes for a maritime canal, including Tehuantepec, Nicaragua, Panama, and Darien, saying he had no doubt of the practicability of construction, and that the enterprise would "immortalize a government occupied with the interests of humanity." Most of the statements which he made in regard to the phys-

Street scene in Old Porto Bello.
December, 1911.

Village of Cruces, Canal Zone.
A street scene, 1912.

ical character of the isthmus were shown by later investigations to have been mere guesses.

Humboldt's views, which were widely published, revived interest in the question of an interoceanic waterway, and in April, 1814, the Spanish Cortes passed a decree for the construction of an isthmian canal adequate for the passage of vessels of the largest size, and providing for the formation of a company to undertake the enterprise. Nothing was done under this decree. Five years later the Spanish provinces in Central and South America began to throw off the yoke of Spain, and by 1823 all of them had established their independence. With this separation from her American possessions the possibility of constructing an isthmian canal passed from Spain.

## CHAPTER IV

### AWAKENING OF AMERICAN INTEREST

With the passing of Spanish domination in Central and South America there came a general revival of interest in the subject of an isthmian waterway. For the first time the United States took official notice of the project. Scarcely had Guatemala, San Salvador, Honduras, Nicaragua, and Costa Rica formed the Federal Republic of the United Provinces of Central America, when Aaron H. Palmer, a merchant of New York City, in behalf of himself and other merchants, made formal proposals to the new federal republic for the construction of a canal through Nicaragua. Prompted by these proposals, the envoy of the federal republic at Washington was instructed to call the attention of the United States Government to the matter. This he did in a letter addressed to Henry Clay, Secretary of State, under date of February 8, 1825, stating that a company of respectable American merchants was ready to undertake the task as soon as it could be arranged by treaty between the two governments, and assuring the secretary that nothing would be more grateful to the "Republic of the Centre of America" than the co-operation of the American people in the work. Mr. Clay responded favorably, assuring the

envoy of the "deep interest taken by the government of the United States in an undertaking so highly calculated to diffuse an extensive influence on the affairs of mankind," and informing him that the President had decided to instruct the United States envoy to Central America to investigate the merits of the Nicaraguan route.

The American envoy was so instructed in 1826. There is no record of a report by him. Without waiting for action by the United States Government, the Republic of Central America entered into a contract with Palmer and his associates on June 16, 1826, for the construction of a canal, but after nearly a year of futile effort to induce capitalists to invest in the enterprise, Palmer abandoned it.

An agreement between the Central American Republic and a company in the Netherlands, in 1830, resulted in like failure. The Congress of the republic appealed to the United States again in 1835, and in Response the United States Senate, on March 3 of that year, passed a resolution requesting the President to consider the expediency of opening negotiations with the new republics of Central and South America for the purpose of protecting by suitable treaties such individuals and companies as might undertake to construct a canal, and for securing forever to all nations the free and equal right of navigating it on payment of reasonable tolls.

In accordance with this resolution President Jackson sent Charles Biddle to Nicaragua and Panama, with instructions to examine the different routes of pro-

posed communication and report, but nothing of importance resulted, and on June 9, 1837, the President sent a message to the Senate saying it was not expedient at the time to enter into negotiations with foreign governments with reference to an interoceanic canal. A year later a memorial was sent to Congress, signed by the mayor and other influential citizens of New York, setting forth the national importance of a canal and requesting that competent engineers be sent to the isthmus to investigate the various routes and report as to the most desirable. A committee report was the only outcome.

In 1839 President Van Buren sent John L. Stephens to the isthmus to investigate and report on the different routes. He recommended the Nicaraguan route, estimated the cost of a canal there at $25,000,000, but said the time was not favorable for the enterprise because of the revolutionary condition of the country.

There were many other proposals and investigations by various persons and governments between the years 1824 and 1840, but nothing of importance resulted.

In November, 1831, New Granada, Venezuela, and Ecuador, which in 1819 had united in forming the Republic of Colombia, separated into three independent republics. As the Panama route was in the territory of New Granada, that republic had full control of it, and in 1838 it granted a concession to a French company to construct railways or canals across the isthmus, with the Pacific terminus at Panama. Several years were spent by the company in making surveys, and a statement was put forth to the effect that a depression

had been found in the mountains of the continental divide which offered a passage only about thirty-seven feet above Pacific sea-level.

This was so much in conflict with previous reports that Guizot, at the time French Minister of Foreign Affairs, sent Napoleon Garella to Panama in September, 1843, to investigate the matter. He reported that the lowest mountain-pass was about 375 feet above sea-level. He favored a lock canal, about 158 feet above sea-level, with 34 locks, 18 on the Atlantic side and 16 on the Pacific side, and proposed either a cut through the mountain range or a tunnel. The estimated cost, with a tunnel, was $25,000,000; with an open cut, about $28,000,000. This report was a serious disappointment, and led to the abandonment of the project and the forfeiting of the concession.

## CHAPTER V

### A CANAL FOR ALL NATIONS

From the very beginning of its active interest in an isthmus canal the United States Government contended that if such a waterway were to be opened it should be free to all nations on equal terms. In 1825, when the matter was formally presented for the first time to the United States Government, President Adams appointed Messrs. Anderson and Sergeant delegates to a congress of nations at Panama, and in his instructions to them Secretary Clay said:

A cut or canal for purposes of navigation somewhere through the Isthmus that connects the two Americas, to unite the Pacific and Atlantic oceans, will form a proper subject of consideration at the Congress. That vast object, if it should be ever accomplished, will be interesting, in a greater or less degree, to all parts of the world. But to this continent will probably accrue the largest amount of benefit from its execution; and to Colombia, Mexico, the Central Republic, Peru and the United States more than to any other of the American nations. What is to redound to the advantage of all America should be effected by common means and united exertions and should not be left to the separate and unassisted efforts of any one power. . . . If the work should ever be executed so as to admit of the pas-

sage of sea vessels from ocean to ocean, the benefits of it ought not to be exclusively appropriated to any one nation, but should be extended to all parts of the globe upon the payment of a just compensation or reasonable tolls.

In 1835 the Congress of the Republic of Central America offered to grant to the United States the right to construct a canal across the isthmus, and in response to this action the United States Senate, on March 3 of that year, passed the following resolution:

*Resolved*, That the President of the United States be respectfully requested to consider the expediency of opening negotiations with the Governments of other nations, and particularly with the Governments of Central America and New Granada, for the purpose of effectually protecting, by suitable treaty stipulations with them, such individuals or companies as may undertake to open a communication between the Atlantic and Pacific Oceans by the construction of a ship canal across the isthmus which connects North and South America, and of securing forever, by such stipulations, the free and equal right of navigating such canal to all such nations, on the payment of such reasonable tolls as may be established, to compensate the capitalists who may engage in such an undertaking and complete the work.

The House of Representatives took up the question four years later, 1839, and adopted unanimously a resolution in which the President was requested:

To consider the expediency of opening or continuing negotiations with the governments of other nations,

and particularly with those the territorial jurisdiction of which comprehends the Isthmus of Panama and to which the United States have accredited ministers or agents, for the purpose of ascertaining the practicability of effecting a communication between the Atlantic and Pacific Oceans by the construction of a ship canal across the Isthmus, and of securing forever, by suitable treaty stipulations, the free and equal right of navigating such canal to all nations.

Seven years later the principle of a canal for all nations was embodied, in a form which established it as the traditional policy of the United States, in a treaty with New Granada, which was concluded in December, 1846, but not ratified and proclaimed till June, 1848. In that treaty the government of New Granada granted to the government of the United States the right of free and open transit across the Isthmus of Panama upon any modes of communication then existing or that might thereafter be constructed, and in return the United States guaranteed the perfect neutrality of the isthmus, with a view that free transit from the one to the other might not be interrupted or embarrassed, and guaranteed also the rights of sovereignty and property which New Granada possessed over said territory.

In his message to Congress, transmitting this treaty for ratification, on February 10, 1847, President Polk said:

In entering into the mutual guarantees proposed by the thirty-fifth article of the treaty, neither the Government of New Granada nor that of the United States

has any narrow or exclusive views. The ultimate object, as presented by the Senate of the United States in their resolution (of March 3, 1835), to which I have already referred, is to secure to all nations the free and equal right of passage over the isthmus. If the United States, as the chief of the American nations, should first become a party to the guarantee, it cannot be doubted, indeed it is confidently expected by the Government of New Granada, that similar guarantees will be given to that Republic by Great Britain and France.

Secretary Cass, in a letter to Lord Napier, British minister to the United States, on September 10, 1857, spoke of the treaty as offering "free transit to all desiring it," on condition of such guarantee.

The Clayton-Bulwer treaty of 1850 declared the "great design of this convention" to be "that of constructing and maintaining the said canal as a ship communication between the two oceans for the benefit of mankind, on equal terms to all."

On January 14, 1869, a treaty was concluded with the United States of Colombia and sent to the Senate for ratification by President Johnson, containing a clause which read: "The Government of the United States of America shall establish a tariff of tolls and freights for the said canal on a basis of perfect equality for all nations, whether in time of peace or war."

This was not ratified. On January 26, 1870, another treaty was concluded with the same republic and sent to the Senate by President Grant, on March 31, for ratification, containing a clause authorizing the United States to establish and from time to time change and

alter a tariff "upon a basis of perfect equality at all times and among all nations." This also was not ratified, but in neither instance was objection made to the free and equal provision.

Hamilton Fish, Secretary of State, writing, on September 4, 1869, to S. A. Hurlbut, United States minister at Bogota, in reference to a canal treaty with Colombia, said:

> The President (Grant) is disinclined to enter into any entanglement in participation of control over the work with other powers. He regards it as an American enterprise, which he desires to be undertaken under American auspices, to the benefit of which the whole commercial world should be fully admitted.

Secretary Evarts, writing to Ernest Dickman, American minister at Bogota, on April 19, 1880, said:

> In all language that this Government has ever used, in all the action it has ever proposed, in reference to an interoceanic canal, it has expressed not only its willingness, but its anxiety that such an enterprise should be for the benefit of the world's commerce, and in no proposition that it has ever made has it sought for its citizens or its commerce special advantages.

When the question of modifying the Clayton-Bulwer treaty was under discussion in 1881, Secretary Blaine wrote, on June 24, to James Russell Lowell, American minister at London:

> Nor, in time of peace, does the United States seek to have any exclusive privileges accorded to American

ships in respect to precedence or tolls, through an interoceanic canal any more than it has sought like privileges for American goods in transit over the Panama Railway, under the exclusive control of an American corporation. It would be our earnest desire and expectation to see the world's peaceful commerce enjoy the same just, liberal, and rational treatment.

In his anuual message to Congress, in 1885, President Cleveland said:

The lapse of years has abundantly confirmed the wisdom and foresight of those earlier administrations which, long before the conditions of maritime intercourse were changed and enlarged by the progress of the age, proclaimed the vital need of interoceanic transit across the American Isthmus and consecrated it in advance to the common use of mankind by their positive declarations and through the formal obligation of treaties.

The Hay-Pauncefote treaty, abrogating and succeeding the Clayton-Bulwer treaty, was ratified on December 16, 1901. It contained this clause, which embodied, as the foregoing citations abundantly prove, the unbroken "free and equal" canal policy of the United States Government for three-quarters of a century:

The canal shall be free and open to the vessels of commerce and of war of all nations observing these rules, on terms of entire equality, so that there shall be no discrimination against any such nation, or its citizens or subjects, in respect of the conditions or charges of traffic, or otherwise. Such conditions and charges of traffic shall be just and equitable.

In transmitting the treaty to the Senate, President Roosevelt said in his special message:

It specifically provides that the United States alone shall do the work of building and assume the responsibility of safeguarding the canal and shall regulate its neutral use by all nations on terms of equality without the guaranty or interference of any outside nation from any quarter.

In another message sent to Congress on January 4, 1904, President Roosevelt said:

If ever a Government could be said to have received a mandate from civilization to effect an object the accomplishment of which was demanded in the interest of mankind, the United States holds that position with regard to the interoceanic canal.

This was the unbroken attitude of the United States Government down to August 24, 1912, when President Taft approved a bill* which had been passed by Congress, providing for the opening, operation, etc., of the Panama Canal, in which American ships engaged in coastwise trade were exempted from the payment of tolls. This action called out a formal protest from Great Britain, on the ground that it was a violation of the Hay-Pauncefote treaty, and the question became a subject for animated controversy on both sides of the Atlantic. In the United States there was formidable opposition to the law, and a strong demand for its repeal. The most influential newspapers of the

* Appendix C.

* No guaranty asked for now. Conditions had entirely changed; we were the land-holders now.

country were nearly or quite unanimous in favor of repeal, and popular sentiment, so far as it manifested itself through the expressions of commercial and other organizations, sustained their position. Senator Root, of New York, introduced in the Senate, on January 14, 1913, a bill repealing the exemption, but it did not reach a vote before adjournment, on March 4. The question was thus passed on by the Taft administration to that of its successor, President Wilson, who assumed office on that date.

## CHAPTER VI

### THE FIRST PANAMA RAILROAD

THE treaty with New Granada in 1846 was the outcome of a steadily increasing need for a better route of communication between the eastern section of the United States and its new possessions on the Pacific coast. Its negotiations were begun at the opening of an important epoch in human progress. In 1846 a treaty was concluded between Great Britain and the United States which settled the dispute between those two nations as to the boundary line west of the Rocky Mountains and in accordance with which Oregon became a territory of the United States in 1848. The war between the United States and Mexico began in May, 1846, and resulted in a treaty, signed February 2, 1848, by which California was added to the United States. Almost simultaneously with the signing of the treaty gold was discovered in California (January 24, 1848), and the demand for a transit route across the isthmus was greatly increased. The value of a right of way across it was correspondingly enhanced.

To the thousands of gold-seekers who started almost immediately from the East, haste in reaching the new gold-fields was the great desideratum. To enable them to avoid the tedious and arduous journey across the

plains and the no less tedious and arduous one around Cape Horn, steamship and packet lines were opened between New York and the Atlantic termini of the isthmus trails and between Panama and San Francisco on the Pacific. The trials and tribulations of those crossing the isthmus in this manner naturally called renewed and most insistent attention to the need of a better isthmus route, and the matter was brought before Congress in the form of a joint resolution in the House of Representatives, at the thirteenth session, 1848–9, authorizing the survey of certain routes for a canal or railway between the two oceans. The resolution was referred to a committee, which reported it back, on February 20, 1849, recommending its passage.

In the meantime three enterprising American citizens had taken the first steps, never to be retraced, in the actual construction of an isthmian railway.

The first contract for a railroad across the isthmus was granted by the government of New Granada in June, 1847, to Mateo Klein, agent and attorney for an organization in Paris called the Panama Company. This, under certain conditions, conferred upon the company, for a period of ninety-nine years, the exclusive privilege of constructing and maintaining a railway across the Isthmus of Panama, to be completed within six years. Because of the failure of the French company to secure the capital necessary its privileges lapsed in June, 1848.

In December of that year, William Henry Aspinwall, John Lloyd Stephens, and Henry Chauncey, of New York, under the name of the Panama Railroad Com-

pany, obtained from New Granada a grant which was a modified form of the Klein concession. It conferred the same exclusive privileges, declared all previous concessions of like character null and void, and was to run for forty-nine years after the completion and opening of the road to public use. The road was to be completed in six years, with the agreement that if it were found to be impracticable to complete it in that time, an extension of two years would be allowed without penalty.

A few months later, April 7, 1849, the New York Legislature passed an act incorporating the Panama Railroad Company with a capital stock of one million dollars, with privilege of increasing it to five million dollars, and liberty to begin operations when five hundred thousand dollars had been subscribed and twenty per cent of each share subscribed for had been paid in. On April 12, 1855, the Legislature passed an amendment increasing the capital stock to seven million dollars. The road is still operated under the original charter as thus amended.

Soon after the granting of the charter the Panama Railroad Company sent a party of experienced engineers, under the command of Colonel G. W. Hughes, of the United States army, to the isthmus to make a survey of the line of the road with a view to its location. In his report Colonel Hughes confirmed previous opinion as to the practicability of the road, and announced the discovery of a gap in the continental divide that was thirty-seven feet lower than any previously found.

In the meantime the company had made a contract with Colonel George M. Totten and John C. Trautwine for the construction of the road. They visited the isthmus and located the line to run from Manzanilla Island (afterward Aspinwall, now Colon) to Panama. Returning to the United States, they asked to be released from their contract on the ground that they had entered into it in ignorance of conditions on the isthmus and were unable to execute it. The company released them, took charge of construction itself, and retained them as associate engineers-in-chief.

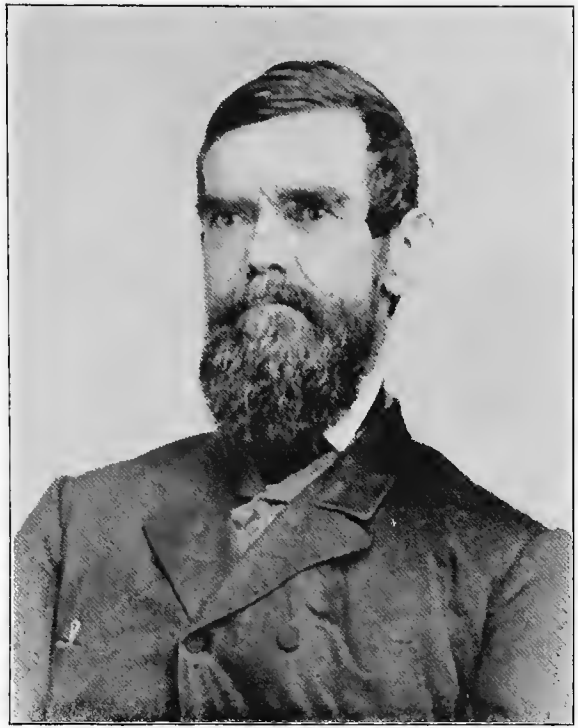
The real pioneers of an isthmian canal were these builders of the Panama Railroad: John Lloyd Stephens, Colonel George M. Totten, John C. Trautwine, and their chief associates, James L. Baldwin and Captain John J. Williams. They cut through pestilential jungle and morass the pathway which the canal of the future was to follow. The story of their struggles with the obstacles and perils of a tropical wilderness, with sickness and death as their constant companions, is a record of American pluck and indomitable persistence rarely equalled and never surpassed in our annals.* Nothing that those who followed them in canal work, under French and American direction, were called upon to endure was comparable to what they encountered and overcame. It cost Mr. Stephens his life, and the price

* "Handbook of the Panama Railroad," Dr. F. N. Otis, New York, 1861.
"Panama in 1885," Robert Tomes, New York, 1855.
"Five Years at Panama," Dr. Wolfred Nelson, New York, 1889.
"Fifty Years at Panama, 1861-1911," Tracy Robinson, Panama, 1912.

that many of his associates paid was years of debilitating illness ending in permanent loss of health. Mr. Trautwine and Captain Baldwin retired at the end of the first year, the former because of disagreement with the directors of the company on questions of policy, and the latter because of impaired health, though he returned to the work later and continued to the end. Colonel Totten remained chief engineer in charge till the completion of the road, riding over it from ocean to ocean on the locomotive which made the first trip on January 28, 1855.

The road had cost in money about $8,000,000. What it cost in human suffering is incalculable, and in human life mainly a matter of estimate, for no accurate record of deaths was kept. Colonel Totten, who was the best authority, placed the number at 835, divided as follows: white laborers, 295; black, 140; Chinese, about 400; in a total force of about 6,000.* There had been brought to the isthmus by the railway company about 1,000 Chinese. "Every possible care," says Otis, "had been taken which could conduce to their health and comfort. Their hill-rice, their tea and opium, in sufficient quantity to last several months, had been imported with them—they were carefully housed and attended to—and it was expected that they would prove efficient and valuable men. But they had been engaged upon the work scarcely a month before almost the entire body became infected with a melancholic, suicidal tendency, and scores of them ended their unhappy existence by their own hands. Disease broke

* L. N. B. Wyse, "Le Canal de Panama," 1885.



John C. Trautwine.

Colonel George M. Totten.

out among them and raged so fiercely that in a few weeks scarcely 200 remained." *

This incident has been made the basis of one of the most persistent of the many historic "fakes" of the isthmus. On the original line of the Panama Railroad, now under the waters of Gatun Lake, there was a station called "Matachin." It was said that this was a combination of two Spanish words, *mata*, meaning dead, and *chin*, meaning Chinaman. It was a plausible fable and commanded general belief until the discovery was made that the name, affixed to the same locality, appears upon a map published in Esquemeling's Buccaneer "Narrative," in 1678, about one hundred and seventy-five years before the Panama Railway was under construction! The word *matachin* appears in every Spanish dictionary and means "butcher," and the place was probably the headquarters of such a personage, or a slaughter-house. But so deep and abiding is the love of historic "fakes" that the "dead Chinaman" tradition lives and finds ready believers to the present day. An amusing version of it is to be found in the *Bulletin* of the French Canal Company. In the bound volume of that publication for the year 1884, there appears an elaborate article by L. Simonin on the history of the isthmus, which contains this passage: "It is said that upon the railway of the Isthmus, which is seventy-five kilometres in length, there is buried a Chinaman under each cross-tie: that would make exactly seventy-five thousand Chinamen! Ah, well! in having recourse to the statistics of the time it

* Otis, "Handbook of the Panama Railroad."

appears that two or three thousand Chinamen at most had died in a work which lasted nearly five years."

This is an amusing confusion of two favorite isthmus "fakes," the "Dead Chinaman—Matachin," and the "Dead-man-for-every-tie." In its usual form the latter does not put a defunct Chinaman under each tie, but merely says that the "Panama Railroad cost the life of a man for every tie." This is repeated by nearly every visitor to the canal, and by nearly all high medical authorities who have written upon past and present sanitary conditions on the isthmus. As there were about one hundred and fifty thousand ties on the original Panama Railway, it will be observed that as a "thriller" this version of the "fake" has doubled the capacity of the French-Chinaman version. An entirely new "fake" appeared as late as 1911, in a statement that at one time the "Panama Railway construction company imported one thousand negroes from the West Coast of Africa, and within six months these had all died off."

This is the first and only appearance in print, so far as my observation goes, of such an importation, and no record of it is to be found anywhere. If the one thousand were not imported, they could not have died. It is needless to say that if such a veritable holocaust had taken place it could not have escaped the attention of Doctor Otis and other historians of the building of the railway. It is, in fact, the most purely imaginative of all the fables connected with the project. It lifts the death total at a single bound one thousand higher than it had ever been placed before, or to about one

Scene on the old Panama Railroad, now under Gatun Lake

The tree, one of the most imposing in the Canal Zone, was known as the Stephens Tree, because of a false tradition that John L. Stephens, president of the railroad at the time of construction, died under it. He died in New York, October 10, 1852, from effects of hardships, exposure, and disease incurred on the Isthmus.

hundred and fifty-one thousand. This, in a total force of six thousand is an achievement that must rank as the supreme triumph of Direful Death. Colonel Totten's statistics, cited above, show conclusively what gross exaggerations all these inventions are.

The chief cause of illness and death was malarial fever in various forms, the worst of which was known as Chagres fever. No mention is made by Doctor Otis or any other contemporary writer of yellow fever, and there is no record of a case of it during the period of railway construction, so that there was no heavy mortality from that disease. Malarial fevers, while causing great suffering and debilitation, have a much lower percentage of deaths. That the railway working force was at times completely incapacitated by these is a matter of record. It is also a matter of record that the *anopheles* mosquitoes were the busy and swift agents of dissemination. The working force was compelled during the early months of construction to labor by day amid swarms of these insects and to sleep at night in the hull of an old brig at Colon amid other swarms of them. Dr. Otis gives harrowing accounts of the sufferings thus entailed. Mr. Trautwine, writing on January 6, 1851, to the *American Railroad Journal*, said in a long and extremely interesting letter:

At this time (May and June, 1850) no accommodation was procurable for ourselves and our workmen, except a small brig. Our laboring force was consequently very limited, and the rainy season having fully set in, converted the earth into a perfect swamp; and moreover prevented the burning of the dense forest

which we were attempting to clear. The mosquitoes and sand flies were at the same time so numerous, that it was with difficulty we could induce the laborers to continue at their work—and that only by remaining with them, in person, and aiding them during the whole day. These discomforts, together with the stifling heat and myriads of insects in the cabin and hold of our small brig, prevented other sleep than that arising from exhaustion and frequently compelled us to pass whole nights on deck, in the rain, rather than encounter the annoyances below.

There was no suspicion at that time that the mosquitoes were transmitting the fevers from one person to another, and were something worse than annoying pests. In his "Private Notes," published some years ago, Mr. Trautwine made this interesting and curious entry:

TROPICAL PRECAUTIONS

A veil over the face is a partial protection from miasmatic vapors.

*Dry* rooms are important. Sheet iron stoves. When camping out a large brushwood fire all night.

Keep closed such doors and windows as open to winds blowing across marshes, very important; especially to the sick. But if they must be open have screens of gauze or *copper* wire, which is better than iron, if near salt water, as it does not rust.

Mosquito nets are good, not only against insects but miasma. Bolting cloth is strongest and best.

Because there was less fever among persons protected by veils and screens, it was a natural conclusion that those barriers were excluding the miasma itself rather than the transmitters of it.

The original contract between the Panama Railroad Company and New Granada was revised in 1850, and modified in 1867, 1876, 1880, and 1891. As thus amended the contract was to run for ninety-nine years from August 16, 1867, or till August 16, 1966, during which time the company was to enjoy the exclusive privileges conferred in the original grant, and to have use and possession of all the property connected with the road and its service. In return the company was to pay an annual indemnity of two hundred and fifty thousand dollars to the Republic of Colombia. At the expiration of ninety-nine years the entire property was to revert to Colombia.

In August, 1881, the French Canal Company secured possession of the Panama Railroad through a total expenditure of about twenty-five million dollars.

Under the treaty of February 26, 1904, between the United States and the Republic of Panama all rights to the property of the Panama Railroad Company which the Republic of Panama had as a result of the transfer of sovereignty from Colombia to Panama were granted to the United States. The road thus became the property of the United States Government, which now owns all its stock.

A few years later the construction of the canal compelled the relocation, or rather abandonment, of the road, and the cutting through forest, jungle, and morass of a new one in its stead. The story of this portion of auxiliary canal work is related in another part of this volume.

## CHAPTER VII

### A FIFTY-YEAR OBSTACLE

In 1850 the United States and Great Britain entered into a compact for the avowed purpose of hastening the construction of a ship-canal across the isthmus. The astonishing result was that they blocked completely for half a century every enterprise of the kind that was undertaken. They agreed, in the famous Clayton-Bulwer treaty, ratified July 5, 1850, that "it being desirable that no time should be unnecessarily lost in commencing and constructing said canal," they would "give their support and encouragement" to all efforts in that direction and would extend their joint protection over any canal or railway that might be constructed anywhere across the isthmus. They agreed that neither of them should exercise exclusive control over an isthmian canal or should fortify the same, but that they would mutually guarantee its neutrality and security and would invite other nations to co-operate with them in thus protecting it.

There were many political considerations, domestic and international, which had a controlling influence in the making of this compact, but they are not a necessary part of the present narrative.

The deadly provision of the Clayton-Bulwer treaty was that of "joint control." Between 1850 and 1860 there were many projects, all futile, for the construction of a canal. The Clayton-Bulwer treaty had been designed especially to aid the plan of a canal across Nicaragua, but it failed in this respect, and the contract of 1849 between Nicaragua and an American company for such a waterway was revoked because of the company's default, in 1856. One project after another was broached, discussed, and investigated, only to be abandoned. During the Civil War the interest of the American people was necessarily suspended, but it was reawakened soon after peace had been declared. In 1866 the Senate passed a resolution requesting the Secretary of the Navy to furnish such information as had been collected in regard to the various proposed routes for an isthmian canal. In response Secretary Welles transmitted to the Senate a report compiled by Rear-Admiral Charles H. Davis, which mentioned nineteen canal and seven railway routes on the isthmus between Tehuantepec and the Atrato River.

By this time there had developed in the United States a distinct sentiment in favor of a canal constructed and controlled by Americans. This sentiment had shown itself only slightly at the time of the ratification of the Clayton-Bulwer treaty. It found partial expression in the Senate when Senator Stephen A. Douglas, of Illinois, opposed ratification in 1850 on the ground that the United States should have no partnership with Great Britain in the control of a canal, but should have exclusive control over the

transit route and open it to the world on such terms as were compatible with American interests.*

When General Grant became President, in 1869, this sentiment had become so strong and wide-spread that it could be called properly the American doctrine in regard to an isthmian canal. Writing to S. A. Hurlbut, United States minister at Bogota, Colombia, under date of September 4, 1869, Hamilton Fish, Secretary of State, gave this interpretation of President Grant's attitude:

> The President is disinclined to enter into any entanglement in participation of control over the work with other powers. He regards it as an American enterprise, which he desires to be undertaken under American auspices, to the benefit of which the whole commercial world should be fully admitted.

In his first message to Congress, in December, 1869, President Grant recommended consideration of the question of an isthmian canal. On March 13, 1872, the President, by proclamation, appointed "Brevet Major General Andrew A. Humphreys of the United States army, Professor Benjamin Pierce of Massachusetts, and Captain Daniel Ammen of the United States navy, to be Commissioners for the United States to examine and consider all surveys, plans, proposals, or suggestions of routes of communication by canal or water connection between the Atlantic and Pacific Oceans, across,

* Speech in secret session in 1850, as reported by Senator Douglas to his brother-in-law, J. Madison Cutts. in 1859. Senate Document No. 41, 2d session, 56th Congress.

over, or near the isthmus connecting North and South America, which have already been submitted, or which may be hereafter submitted to the President of the United States, during the pendency of this appointment, or which may be referred to them by the President, and to report in writing their conclusions and the result of such examination to the President of the United States with their opinion as to the probable cost and practicability of each route or plan, and such other matters in connection therewith as they may think proper and pertinent." Professor Pierce resigned in December, 1874, and on the 24th of that month the President appointed as his successor, Carlisle P. Patterson, Superintendent of the United States Coast Survey. Under the direction of this commission thorough and valuable surveys were made of the Tehuantepec, Nicaragua, and Panama routes between 1870 and 1875, the reports of which were published as congressional documents and proved of great service to subsequent canal commissions.

There was, in fact, during the eight years of President Grant's administration a great increase of public interest in a canal, with a steady consolidation of opinion in favor of the exclusive American control of such a waterway, which continued undiminished after President Hayes came into office, in 1877. When Ferdinand de Lesseps paid a personal visit to him at Washington in the spring of 1880, in the hope of getting the consent of the American Government to what he called a European control of his projected canal at Panama, President Hayes not only refused his aid, but sent, on

March 8, a special message to Congress in which he used the memorable words:

> The policy of this country is a canal under American control. The United States cannot consent to the surrender of this control to any European powers.

The failure, in 1888, of the French effort at Panama, a history of which appears in another part of this volume, made it apparent that if an isthmian canal was ever constructed the work would have to be done by the United States. Experience had demonstrated that private enterprise and private capital were entirely inadequate to the task. The fixed policy of the United States Government to permit no European power, either singly or in combination with other European powers, to control a canal if one were built made it morally impossible for any of those powers to undertake the work.

After the French failure various canal projects were undertaken by Americans, the most important being that of the Maritime Canal Company of Nicaragua, which was incorporated by Act of Congress on February 7, 1899, but all of them were confronted with the "joint control" of the Clayton-Bulwer treaty, which stood squarely and immovably in the way of a canal built by Americans and controlled exclusively by Americans. Several efforts were made to have it abrogated, but none was successful till 1901. On December 16 of that year the Hay-Pauncefote treaty was ratified, superseding the Clayton-Bulwer treaty and giving the United States the right to construct a canal, and

the exclusive right of providing for its regulation and management, the canal to be free and open to the vessels of commerce and of war of all nations on terms of entire equality. It was stipulated that the canal "shall never be blockaded, nor shall any right of war be exercised nor any act of hostility be committed with it," but that the United States "shall be at liberty to maintain such military police along the canal as may be necessary to protect it against lawlessness and disorder." The United States Government has construed the last clause to mean that it may, at its discretion, fortify the canal, and it is erecting fortifications at the entrance in both oceans.

Thus the way was cleared, after fifty years of obstruction, for "an American canal, built by Americans and controlled by Americans."

# PART II

# THE FRENCH EFFORT AND FAILURE
## 1879–1902

# PART II

# THE FRENCH EFFORT AND FAILURE
## 1879–1902

## CHAPTER I

### LEADERSHIP AND METHODS OF FERDINAND DE LESSEPS — HIS INTERNATIONAL CONGRESS OF 1879 — PURCHASE OF THE FIRST CANAL CONCESSION

For several years after the Americans entered upon the task of opening a waterway across the isthmus there were visible from the car windows of Panama Railroad trains long rows of abandoned locomotives, dump-cars, excavating and other machinery, partially hidden by a jungle growth of creeping vines. Visitors were told that this was "old French machinery," standing where it had been left when the French company collapsed twenty years earlier. The little locomotives and cars, almost toy-like in appearance when compared with those in use by the Americans, bore eloquent testimony to the irresistible onward march of mechanical invention. Time had retired them from active service as completely as if they had never existed, leaving them stranded as mere "junk" along the wayside of progress. Covered with the softening mantle of vine and leaf and flower, and overshadowed by waving palms, they stood,

in silent dignity, as the fitting monuments of a "lost cause," making a spectacle so eloquent with the sadness of failure, the pathos of defeat, that few beholders could contemplate it unmoved, and no Frenchman could look upon it with eyes undimmed.

The story told by these silent witnesses was a true one, for the record of French effort and failure at Panama, with its mingling of folly, absurdity, greed, and heroism of the highest quality, is one of the most pathetic as it is one of the most diverting in the history of human endeavor. The project was doomed to failure from the outset, and was fairly rushed to destruction by reckless and rascally management; but it deserved to succeed because of the rare courage and patriotic devotion of the men, many of them the very flower of young France, who did the work in the field. The shame of the failure has been told by many pens, and not always with either charity or careful regard of truth; but the deeds of the men who faced pestilence and death with unflinching courage, many of them dropping into unnamed graves, have passed with slight and far from adequate mention. The Americans who have succeeded them in the task at Panama, and who have studied the results of their work, have a very high appreciation of their intelligence and zeal and the warmest admiration for their courage. They were a brave and skilled army led to pitiful disaster by incompetent and unworthy commanders.

I have said that the story of the French endeavor is one of the most diverting as well as one of the most pathetic in human annals, and this is the simple truth.

One reads the narrative in bewilderment and wonder. Through it comedy and tragedy walk hand in hand. At intervals there is presented a performance of opera-bouffe in a grisly setting of pestilence and death, with the leading actor, the all-powerful director of the entertainment, dancing and pirouetting in the front of the stage blissfully unconscious, apparently, of everything except his own capers. His deeds and doings fill large space in the record, and have for many years been the subject of animated and bitter controversy. Was he an enthusiast so blind as to be irresponsible, or was he so bent upon success that he was willing to adopt any means to secure it, or was he the foremost impostor of his time? The record of his proceedings may be left to supply the correct answer to these questions.

It was his success with the Suez Canal which inspired Lesseps with the ambition to score a second triumph at Panama. The completion of the Suez project in 1869, with the world-wide fame which it brought him, including the intoxicating adulation and high honors bestowed upon him by the people and government of France, came at the time when interest in the question of an isthmian waterway was at a higher point than it had attained hitherto. President Grant had widened and intensified this interest by his expressions of approval soon after taking office, in 1869, and especially by his appointment, in 1872, of an Interoceanic Canal Commission, with General A. A. Humphreys, Chief Engineer, United States Army, at its head, to make a thorough investigation of all explorations, surveys, etc. In no part of the world did this action

arouse keener interest than in France, for steps were under way there already to secure a concession for an isthmus canal from the republic of Colombia. The leader in this enterprise was Etienne Türr, a Hungarian by birth and a royal major-general in the Italian army, who was an intimate friend and fervent admirer of Lesseps. The plan was discussed in the International Geographical Congress at Antwerp in 1871 and in Paris in 1875. In the spring of 1876 General Türr sent Anthoine Gogorza to Colombia, where he obtained from the Colombian Government, for himself and General Türr, under date of May 28, 1876, a ninety-nine-year concession in the name of himself and General Türr, authorizing them to make a survey of the Isthmus of Darien, and, in case the survey should show the practicability of a canal without locks or tunnels, to form a company for the construction of such a canal and an auxiliary railway.

When Gogorza returned to France with this concession, General Türr organized a company styled the Société Civile Internationale du Canal Interocéanique de Darien. In November, 1876, this company sent Lucien Napoleon Bonaparte Wyse, a lieutenant of marines, and brother-in-law of General Türr, with a party of engineers to the isthmus to make the survey required by the Gogorza-Türr concession. Wyse returned to France in 1877, and made a second trip to Colombia in 1878, accompanied by Armand Reclus, completing the survey and obtaining from the Colombian Government, on May 22 of that year, a contract superseding and amending that obtained by Gogorza, and granting

to the society of which General Türr was the president exclusive right to construct and operate for ninety-nine years after completion a canal across the territory of Colombia, provided that in case they were to select for a route the region in which the Panama Railroad had exclusive rights an amicable arrangement should be made with that company.

A stipulation of the contract was that the route of the canal should be determined by an international commission of individuals and competent engineers, who should make a survey on the ground and report to the Colombian Government not later than 1881. A "Congrès International d'Etudes de Canal Inter-océanique" was assembled through the exertions of Ferdinand de Lesseps, at Paris, on May 15, 1879. It opened with 135 delegates, 74 of whom were French and very friendly to Lesseps, and only 42 of whom were engineers. There were 11 delegates from the United States. Lesseps presided, and among the various projects considered was that of the Wyse concession. General Türr as well as Wyse and Reclus appeared in advocacy of it.

After a fortnight's session the congress, by a vote of 78 ays, 8 noes, and 12 abstentions, declared in favor of a sea-level canal at Panama from the Bay of Panama to the Gulf of Limon. Of the American delegates, 3 voted ay, 4 abstained, and 4 were absent. Of the 78, only 20 were engineers, and only one of these had been on the Isthmus of Panama. The cost was estimated at 1,070,000,000 francs ($214,000,000), and the least time of completion at twelve years.

On July 5, 1879, the company of which General Türr was president transferred to Lesseps all the rights acquired under the Wyse contract of 1878, which Lesseps was authorized to transfer to a canal company to be organized in such manner as he should see fit. The consideration was the payment to General Türr of 10,000,000 francs by the canal company when organized.

On August 6 and 7, 1879, Lesseps sent out circulars in Europe and America announcing the formation of the Compagnie Universelle du Canal Interocéanique, with a capital of 400,000,000 francs ($80,000,000), represented by 800,000 shares at 500 francs ($100) each. The subscription, which was opened in Europe and America, was a failure, only 30,000,000 francs ($6,000,000) being taken. The project was bitterly assailed, and in order to overcome hostility, Lesseps ordered new surveys of the route and started in person for the isthmus, accompanied by an international technical commission of nine members, to make the survey required by the Wyse concession.

## CHAPTER II

### LESSEPS'S FIRST VISIT TO THE ISTHMUS — FIRST BLOWS OF PICK AND DYNAMITE

SURELY no great engineering work was ever undertaken in a more jocund spirit than Ferdinand de Lesseps exhibited when he entered upon his second task as the world's chief canal-builder. His success with the Suez Canal seemed to have turned his head so completely that all obstacles were virtually invisible to him. He was the first promoter of the age, the flamboyant collector of capital under whose seductive appeals all French purses flew open. Had he been an engineer, his appeals would necessarily have been deprived of that appearance of boundless confidence, that jaunty disregard of all difficulties, which made them so attractive and so nearly irresistible to his own people. If he saw obstacles, he refused to take cognizance of them. When trained engineers called his attention to them, he pushed them aside as unworthy of serious attention. He had cut a sea-level canal through the Isthmus of Suez, he would cut a sea-level canal through the Isthmus of Panama. He had ruled his so-called "Scientific Congress" at Paris, in 1879, carefully constituted to do his bidding, with a rod of iron, "jamming through," in a manner which would do credit to a

modern American political boss, his sea-level plans for Panama, turning a deaf ear to all arguments advanced by the few experienced engineers in that body against the feasibility of those plans, and securing adoption through the votes of delegates who were not engineers and who had never been on the Isthmus of Panama.

As soon as he had secured this prearranged approval of his plans, he established in Paris, on September 1, 1879, a fortnightly publication, called the *Bulletin du Canal Interocéanique,* which from its first issue till the final one in February, 1889, was devoted mainly to his personal glorification and the unqualified defence of all his proceedings. In it he published his circulars appealing for funds, stating at the outset his conviction that "*Le Canal de Panama sera plus facile à commencer, à terminer et à entretenir que le canal de Suez.*"

The stage having been set, the performance opened with the first visit of Lesseps to the isthmus in December, 1879. Every step of preparation, every stage of his journey, was heralded and accompanied by an unbroken blare of trumpetings in the *Bulletin.* His party comprised his wife and three children and an international technical commission of nine members. They reached the isthmus on December 30, and were joined there by a party of American visitors, guests of Lesseps, among whom were Colonel Totten, builder of the Panama Railroad, Trenor W. Park, president of that road, and Nathan Appleton, of Boston.

Lesseps was at that time in his seventy-fifth year, but alert and active and bubbling over with enthusiasm. To all questions about the proposed canal, all

Count Ferdinand de Lesseps.

Photograph taken at time of his first visit to the Isthmus, 1879–80, in his 75th year.

suggestions of difficulties or obstacles, he replied with smiling amiability: "The canal will be made!" In fact, he began to make it at once in person. Two days after landing he conducted his guests across the isthmus from Colon to Panama to take part in an elaborately organized ceremony of striking the first blow of the pick (*le premier coup de pioche*) at the Pacific entrance of the proposed canal. A small steam-boat had been chartered for the purpose of conveying the party to the mouth of the Rio Grande, in the Bay of Panama, where the ceremony was to take place. It had been stocked liberally with provisions and champagne, and the Bishop of Panama, officials of the Colombian Government, and other distinguished personages had been invited. A reception, with much toasting, was held on board, and many of the guests were dilatory in arriving. The tide in the Bay of Panama, which has an average oscillation of about twenty-one feet, is no respecter of persons. It began to recede while the toasting and feasting were in progress, and, having a considerable distance to go, it travelled with rapidity. The result was that when the expedition finally got under way it was discovered that the steam-boat could not get within two miles of the spot chosen for the ceremony. This would have been disheartening to an ordinary master of ceremonies, but it was not a particle so to Lesseps. As for the guests, they were at the time in a condition of cheerfulness that rose superior to any disappointment. Lesseps promptly rallied them on the deck of the steam-boat, armed with a beautiful shovel and pickaxe which he had brought

from Paris for the purpose, and proceeded to address them.

He explained the heedless action of the tide, and said that while it was in a way disappointing, it really did not matter, since the proposed ceremony, being only a *simulacro*, could as well be given on shipboard as on land, and he had decided to proceed with it accordingly. A champagne-box filled with earth was then brought forward, and a young daughter of Lesseps administered the first blow of the pick to its contents, amid enthusiastic applause. The representatives of Colombia and other distinguished visitors also gave successive blows of the pick and delivered their speeches, and the venerable Bishop of Panama invoked a benediction upon the entire performance. So far as the testimony of eye-witnesses still living goes, no one giggled while this delightful opera-bouffe act was in progress. In the faithful *Bulletin* no mention of the delay or the champagne-box of earth was made, but the events of the day were set forth in the best Lesseps manner in the text of his speech over the box concluding the ceremony, which was as follows (I give the French text. Translation would so far deprive it of its theatric merits as to be little less than criminal):*

Sous l'autorité de la République des États-Unis de Colombie:

Avec la bénédiction de Monseigneur l'évêque de Panama:

En Présence du délégué du gouvernement général et de ceux des États-Unis de Colombie:

* *Bulletin du Canal Interocéanique*, Feb. 1, 1880.

Avec l'assistance des membres de la Commission technique des études définitives du Canal maritime universel interocéanique:

Il sera donné, aujourdhui, 1er janvier 1880, par Mlle. Ferdinande de Lesseps, le premier coup de pioche, sur le point qui marquera l'entrée du Canal maritime sur la côte de l'Océan Pacifique.

Tous les assistants donneront successivement leur coup de pioche, en signe de l'alliance de tous les peuples qui contribuent à l'union des deux océans, pour le bien de l'humanité.

The second act in this entertaining drama was performed a few days later, on January 10, with the neighborhood of Culebra Cut as the scene. Lesseps was accompanied on this occasion by the same distinguished party that had assisted at the first blow of the pick. A heavy charge of dynamite had been placed in advance deep in a rock near the line of the canal, and an electric battery had been connected with it. Mademoiselle Ferdinande de Lesseps was on hand to press the button. According to the faithful *Bulletin*, the operation was "perfectly successful," and all present "hailed the explosion as the beginning of an immense series of labors that should have for their termination the opening of the interoceanic canal." It was added with much gravity that the explosion showed that the "rocks were much less resistent than we had anticipated, which is a good augury of the rapidity with which the great trench will be made." It was also stated that the performance took place on the summit of Cerro de Culebra. Again the official narrative is in sad conflict with the testimony of eye-witnesses. Mr. Tracy Rob-

inson, who was a member of the local committee of reception, and was present at the time, gives in his interesting book of reminiscences* this account of the affair:

In order that the enterprise might have the blessing of Heaven and be officially inaugurated at the same time, with that gayety so dear to the French heart, a numerous audience was invited to Empire Station, on the line, to witness the good Bishop of Panama bestow his benediction upon the great undertaking; and then to see what dynamite could do in the way of blowing up a few hundred thousand cubic meters of rock and earth, along a part of the canal where tons of that explosive had been placed for the purpose.

Was it prophetic? The blessing had been pronounced, and the champagne, duly iced, was waiting to cool the swelter of that tropic sun, as soon as the explosion "went off." There the crowd stood, breathless, ears stopped, eyes blinking half in terror lest this artificial earthquake might involve general destruction. *But there was no explosion!* It wouldn't go! Then a humorous sense of relief stole upon the crowd. With one accord everybody exclaimed "Good gracious!" and hurried away, lest after all the dynamite should see fit to explode.

*"Fifty Years at Panama, 1861–1911," Tracy Robinson.

## CHAPTER III

ESTIMATED COST OF THE PROPOSED CANAL — REDUCED BY LESSEPS — NO SUBSCRIPTIONS IN UNITED STATES — ABUNDANCE IN FRANCE

WHILE Lesseps was engaged in the diverting performances mentioned in the preceding chapter, the nine members of the international technical commission were making careful studies and estimates of the work and cost of his proposed canal. On February 14, about six weeks after their arrival, they made their report. The head of this commission was Colonel George M. Totten, the builder of the Panama Railway. The report, which was signed by all the members and which was a very thorough and scientific document, estimated the cost of the canal at 843,000,000 francs ($168,500,000) and the period of construction at eight years. Lesseps took the report and on the following day set sail with it for New York. During the voyage, pursuing his regular policy of disregarding the opinions of experienced engineers, he composed a "note" on the report, in which he reduced the estimated cost of construction to 656,000,000 francs ($131,600,000), a cool cut of about $37,000,000, or nearly a quarter of the commission's estimate. When he reached New York he issued a circular to *Les Banquiers Américains*, in which he announced that he had fixed the capital of

his company at 600,000,000 francs ($120,000,000), because of his "conviction" that there would be much economy in the execution of the work. In the same circular he declared that since the European capitalists who had taken part in the Suez enterprise had expressed their intention to subscribe for 300,000,000 francs of this capital, that amount had been reserved for them, leaving an equal amount for all the States of America, which had been set aside for them.

Lesseps was received with much cordiality in New York. There were many receptions and dinners in his honor, including a great banquet by the citizens of New York at Delmonico's, but there were no subscriptions to the stock of his company. He went to Washington in the hope of getting the support of the United States Government for his proposed "Isthmian Canal under European control," but was disappointed. He had an interview with President Hayes, which resulted in the President's sending to the Senate a special message avowing the principle that the "policy of this country is a canal under American control." While this message was a distinct and serious repulse to his plans, Lesseps rallied quickly from it and sent on the following day a cable message to his *Bulletin,* in Paris, saying: "*Le message du Président Hayes assure la sécurité politique du Canal.*"

From Washington he visited Boston, Chicago, San Francisco, and other American cities, receiving everywhere flattering attentions, which he described in brief and stirring cable messages to his *Bulletin* as "*une adhésion enthousiaste et unanime à notre entreprise,*" "*un*

*accueil chaleureux,*" "*un plein succès.*" But the enthusiasm, however warm, was unaccompanied by subscriptions to the capital stock of the Lesseps company, and when he sailed from New York, on April 1, 1880, for France by way of England, Holland, and Belgium, he had still in his possession the 300,000,000 francs of that stock which he had reserved for the United States.

In France it was quite another story. He made a tour of its principal cities during the summer of 1880, and aroused such enthusiastic faith in his project that when he opened his subscription, in November, for a capital of 300,000,000 francs ($60,000,000) in 600,000 shares of 500 francs each, the stock was subscribed for twice. He announced during that tour that a firm of French contractors had offered to build the canal for 512,000,000 francs ($102,400,000) and to complete it within eight years. The subscription was closed on December 10, and the first assembly of shareholders was held in Paris on January 31, 1881. At a second assembly, on March 3 following, the Compagnie Universelle du Canal Interocéanique was definitely constituted (*définitivement constituée*), with a capital of 300,000,000 francs ($60,000,000) and with 102,230 subscribers, of whom 16,000 were women.

The great promoter was thus entering, in the jauntiest manner upon the task of constructing with a capital of $60,000,000 a canal which, according to the estimate of its own chosen commission of engineers, was to cost $160,000,000, and according to the lowest estimate which he himself was able to reach would cost $131,600,000.

## CHAPTER IV

### WORK ON THE ISTHMUS — SECOND VISIT OF LESSEPS

THE arrival of the first detachment of the canal construction force at Panama was proclaimed by Lesseps in his best promoter manner. The detachment sailed from France for the isthmus on January 6, 1881. It was under the direction of Armand Reclus, who had surveyed the canal route with Wyse, and comprised thirty-five men, five of whom were accompanied by their wives. It arrived at Colon on January 29, and a few days later Lesseps gave out for publication in the Paris newspapers the following cable message from the isthmus, dated February 1: "*Travail commencé.*" Upon which the newspaper *La France* commented, "*Voilà de l'éloquence en peu de mots,*" and Lesseps himself, in his formal report under date of February 22, spoke of it as "*ce télégramme éloquent dans son laconisme.*"

This was pure humbug. Aside from crossing the isthmus on the Panama Railroad, responding to addresses of welcome from local Panama officials, and finding living quarters in Panama, there had been no "*travail*" of any kind. In fact, actual work in construction did not begin till nearly a year later, January 20, 1882, when the first *chantier*, or working section, was opened with formal ceremonies at Empire. In the evening

there was a banquet, followed by a ball, in the city of Panama.* Other *chantiers* were opened during the year at Culebra, Mindi, Monkey Hill (now Mount Hope), Bas Obispo, Gorgona, Cristobal, and Paraiso. On September 17 of the same year the present Ancon Hospital, on the slopes of Ancon Hill, near the Pacific terminus of the canal, was dedicated with formal exercises. It comprised at the time twelve buildings.

It had been made plain to Lesseps and his representatives on the isthmus, very soon after preparatory work began, that it was absolutely necessary for them to purchase the Panama Railroad. What with the railroad company's contract with Colombia and its own arbitrary rates and methods, it constituted an insurmountable obstacle to economic and expeditious canal construction. It had Lesseps at its mercy, and he had no choice except to purchase a controlling interest at the company's own price, which he did when he paid $17,133,500 for 68,534 of its 70,000 shares of stock. The full significance of this "hold-up" by the railroad company is revealed when it is stated that Lesseps was compelled to pay $250 for every share of stock the par value of which was $100, and which at the time was barely at par. In addition, he paid the directors of the railroad company a cash bonus of $1,102,000, bought $7,000,000 of the company's bonds; and these

* There is an erroneous statement, published in several books on Panama, to the effect that the work was "inaugurated formally" on February 1, 1881, and that Sarah Bernhardt went to the isthmus to take part in it and gave a performance at a theatre in Panama in the evening. This is pure fiction. Sarah Bernhardt was not in Panama either in 1881 or 1882, her only visit to the isthmus being in 1886.

outlays, together with commissions, etc., brought the total cost of the railroad to the Lesseps company up to about $25,000,000. It was an expensive introduction of the great promoter to the mysteries and possibilities of a Wall Street railway "deal."

Very little actual excavation was accomplished in 1882. The French contractors who had offered to construct the canal for 512,000,000 francs in eight years, and who had been in charge of the preliminary work, asked on December 31, 1882, to have their contract annulled, recommending a division of the work among several contractors. Lesseps consented to the annulment and appointed Jules Dingler director-general of the work. Dingler sailed for the isthmus February 6, 1883, arriving at Colon on February 27. He made a thorough examination of the route, and in an elaborate report recommended a canal with a depth of 29.5 feet and a bottom width of 72 feet, with a large dam at Gamboa to control the waters of the Chagres. The total excavation was estimated at 157,000,000 cubic yards, which was more than the estimate of the International Congress of 1879. The plan was accepted, and the work, under Dingler's direction, was divided into seven divisions and let to as many contracting companies, two of which were American, and all of which agreed to have their tasks finished before the end of 1889.

Work began on a large scale in 1883, and continued with steadily increasing activity through 1884 and 1885. In March, 1885, an insurrection occurred, during which the city of Colon, then called Aspinwall, was burned

Columbus statue on water-front, Cristobal, near Lesseps residences.

Presented to the United States of Colombia by the Empress Eugenie, and by Colombia presented to the French Canal Company, to be erected at the Atlantic entrance to the canal. Formally dedicated by Lesseps on February 24, 1886, during his second visit to the Isthmus.

and the city of Panama was threatened. Order was restored by the intervention of the United States, acting under the obligations of the treaty of 1846 with New Granada, to preserve the neutrality of the isthmus and maintain free and open transit across it. President Cleveland sent three war vessels, under command of Rear-Admiral James E. Jouett, and about five hundred marines at once to Aspinwall, thus saving the city of Panama from destruction and preventing damage to canal property and serious interruption of construction work.

Early in 1885 it became apparent that the canal company was in serious financial trouble. The cost of the work was known to be greatly in excess of the estimates, and money was not forthcoming to meet it. At a meeting of shareholders of his company, in Paris, on July 29, 1885, Lesseps postponed the completion of the canal from the end of the year 1888 till July, 1889, and admitted that the cost of construction would reach the amount fixed by the international congress of 1879 —1,070,000,000 francs ($214,000,000). At the same meeting he announced that on May 27 preceding he had asked the French Government for authority to issue lottery bonds for a loan of 600,000,000 francs ($120,000,000). The government decided, before acting on this request, to send a special commission of its own to the isthmus to investigate conditions and report. It selected for this task Armand Rousseau, an eminent French engineer, who went to the isthmus in the latter part of 1885, and returned in February, 1886.

Lesseps then took steps to forestall the report of

the government commission by assembling a sort of commission of his own to accompany him to the isthmus. He invited representatives of the chambers of commerce of the principal cities of France, an eminent engineer from Germany and another from Holland. The party sailed from France in January, 1886, reaching Colon on February 17, where it was joined by the Duke of Sutherland and Admiral Carpenter, of the British navy; and by John Bigelow, representing the Chamber of Commerce of New York; Nathan Appleton, representing the Chamber of Commerce of Boston; and Admiral Jouett, of the United States navy.

This second visit, only a fortnight in length, was as continuously theatric as Lesseps could make it. There was an almost unbroken series of banquets and speeches, and an unrestrained flood of adulation and eulogy for Lesseps, to which the most expert contributor was Monsignor Thiel, Bishop of Costa Rica. When Panama was reached the whole city, according to the faithful *Bulletin,* waited to "render homage to the Creator of Canals."

The homage found expression in a gorgeous procession with allegorical floats; triumphal arches upon which Lesseps was acclaimed the "Genius of the Nineteenth Century," and his portrait was displayed with Glory crowning him with laurel; an obelisk in his honor and a garden of flowers into which Lesseps stepped from his carriage to receive a crown of laurel from the hands of a little girl. The line of march from the railway station to the central square of the city was "*une véritable procession triomphale.*" In the evening

By courtesy of Mr. Tracy Robinson.

Count Ferdinand de Lesseps, his second wife, and nine children.
Photograpb taken about the time of his first visit, 1879–80.

By courtesy of Mr. Tracy Robinson.

Group of Lesseps and his friends.
Taken at Cristobal at the time of the dedication of the Columbus statue, with Bishop Thiel, of Costa Rica, standing at the right of Lesseps.

there was a popular fête, with fireworks and illuminations, a banquet with innumerable speeches and felicitations, and a grand ball.

The tour of inspection along the line of the canal was also a "*procession triomphale,*" with Lesseps in the front, usually on a prancing horse. "M. de Lesseps," says a member of the party, recorded in the *Bulletin*, "always indefatigable, held the head of the caravan. I saw him escalade at a gallop an escarpement of Culebra amid a roar of enthusiastic hurrahs from blacks and whites, astounded by so much ardor and youthfulness." There is a tradition on the isthmus that he went about in a flowing robe of gorgeous colors, like an Eastern monarch.

Delightful opera-bouffe this, but in a very grewsome setting. If Lesseps had even the most superficial knowledge of the financial condition of his company he must have known that it was on the verge of collapse. His spectacular antics on the isthmus were simply a final frantic effort to conceal the truth about the situation and raise more funds. If ever a man danced above the crater of a volcano he did during that fortnight of his last visit. He was in the eighty-first year of his age and the bodily vigor which he displayed was amazing. That he knew what he was about, knew how to succeed with his own countrymen, subsequent events were to prove.

## CHAPTER V

LIFE AT PANAMA IN FRENCH DAYS — ITS PECULIARITIES, HARDSHIPS, AND PERILS — EXTRAVAGANCE AND GRAFT

THE tragic and heroic phases of the enterprise began with the arrival of the French engineering and organizing forces on the isthmus. They landed in a country which, with the exception of two cities, one on the shore of either ocean, was little more than a wilderness. Along the line of the railroad there were a few scattered villages composed of rude buildings and shacks whose population was mainly native. As for the section through which the proposed canal was to run, it was for the most part an impenetrable jungle. Throughout the entire country pestilence and the worst forms of malarial fever were epidemic. The two ocean cities, Colon and Panama, were the permanent abodes of disease, for they were without even the most elementary provisions for health protection. They had no sewers, no water supply, no sanitary appliances whatever. Their only scavengers were the huge flocks of buzzards that circled constantly above them. Colon was a collection of wooden buildings harboring a population which contained more of the dregs of humanity than could be found in any other settlement of its size on the face of the globe. Panama was superior to

Colon in its buildings, which were mostly of stone, and while the bulk of its population was mongrel—a mixture of many races, Indian, negro, Spanish, Chinese, Japanese, and others—it contained also a white element of merchants, bankers, and persons engaged in other occupations who were the dominating class. But with these elements of superiority, its sanitary condition was as bad as that of Colon, and its moral condition differed only in degree. Both cities had, in fact, all the debasing qualities of a mining camp or rude frontier town, with the usual facilities for gambling, drinking, vice, and general debauchery supplemented by tropical laxity in morals and conduct.

A graphic picture of life in Panama at this period is given in a narrative of personal experience on the isthmus, published in Paris in 1886, under the title of "Deux Ans à Panama." Its author, H. Cermoise, was a French engineer who went to the isthmus with the third party that was sent out by the French company. He arrived on the isthmus in the spring of 1881, and was in the canal service for two years. Describing the scenes which he witnessed in the Grand Hotel at Panama on the evening of his arrival, he wrote:

A great, an enormous nall with a stone floor was the bar-room, in which all persons about the hotel were now assembled. In the centre were two billiard tables, the largest I have ever seen. They were so large that there were four balls to a game; with three it was impossible, in most of the strokes, to reach the ball to be played, lost as it was in the middle of this *steppe* of green cloth.

Beyond the billiard tables, at one end of the hall, stood one of those vast bars which are so much a part of American life.

In front of these rows of bottles with many colored labels most of the commercial business of Panama is transacted;—standing and imbibing cocktails,—always the eternal cocktail!

Afterwards, if the consumer had the time and money to lose he had only to cross the hall to find himself in a little room crowded with people, where roulette was going on.

Every diversion was there at hand in the hall of this hotel. But then it was useless to look for other pleasures. They were nowhere to be found. In this town there was neither theatre, concert nor café,—nothing, but the hall of the Grand Hotel, to which one must always return.

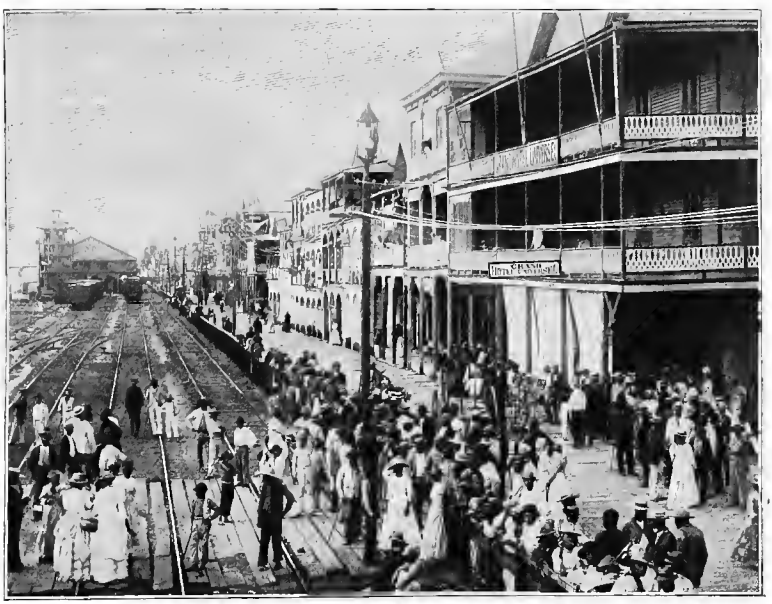
Oh, this roulette, how much it has cost all grades of canal employes! Its proprietor must make vast profits. Admission is absolutely free; whoever wishes may join in the play. A democratic mob representing every class of society pushes and crowds around the table. One is elbowed at the same time by a negro, almost in rags, anxiously thrusting forward his ten sous and by a portly merchant with his pockets stuffed with piastres and banknotes.

Very like a mining-town episode is the following:

Some time before our arrival on the Isthmus, on an evening when the play was especially high and furious, a band of thieves planned to rob the roulette-table. Under it they concealed a powerful petard or bomb, which they lighted at the critical moment. There was an explosion and a frightful panic. Everyone, believing that the house was blown up, rushed for the doors and

Grand Hotel, Panama.

Made administration headquarters of the French company about 1884. Used for a time as administration headquarters by Americans.



Front Street, Colon, during the flourishing French times.

windows. The lights went out. When the panic subsided it was discovered that all the stakes had disappeared under cover of the tumult.

This accident was more disagreeable than serious and the authorities paid little heed to it. But then the authorities never minded anything, letting the manager of the game take such steps as he saw fit to prevent the repetition of the occurrence. He, accordingly, surrounded himself with certain precautions which at first seemed odd to us until we understood them.

Before each turn of the wheel, at the solemn moment of "Make your plays, gentlemen!" the following dialogue took place between the chief croupier and his assistants:

"*Mira la bomba!* (Look for the bomb!)" he commanded.

A croupier immediately went down on all fours, lifted the carpet, inspected the under side of the table, reappeared and announced that he had seen no bomb.

"Very well!" gravely replied the chief croupier.

And only then, strong in this assurance, he pronounced the "Make your plays, gentlemen!"

He threw the ball. When it stopped he announced the number in three languages, as was necessary for the cosmopolite attendance with which he had to deal: "*Treinta y seis, colorado!* Thirty-six and red! *Trente-six, rouge!*"

Colon differed from Panama in having no central point for its debauchery. It had no Grand Hotel in which all its gambling, drinking, and accompanying vices were congregated, but it had a single main street, running along the water-front, which was composed

almost entirely of places in which these diversions were in full progress day and night with such abandon as to make the town uninhabitable for decent persons. It was a veritable sink of iniquity, if ever one existed. In these two centres of isthmus life, Panama and Colon, the French canal-builders found their sole places of abode outside the jungle. There was nowhere else to go for habitation or recreation. The advent of the various detachments from France, with plenty of money and generous cargoes of wines and other liquors, gave a tremendous incentive to the wild gayety of the two towns. Nothing like the supply of liquor which the French poured out upon the isthmus during the years of their occupation was ever seen there before, or has been seen there since. It was well-nigh unlimited in quantity and was sold to everybody at the prices at which it had been bought in large quantities at wholesale in France. Nothing was added for transportation across the ocean or to defray the cost of handling. Champagne, especially, was comparatively so low in price that it "flowed like water," and other wines were to be had in scarcely less profusion and cheapness. The lack of a pure water supply was doubtless the moving cause for this abundance, which was justified on the ground of health preservation, but the consequences were as deplorable as they were inevitable. The ingredients for a genuine bacchanalian orgy being supplied, the orgy naturally followed.

Money was scarcely less abundant than wine. Vast sums were sent from France to the isthmus during the first five or six years of canal work, and at least one-

half of it, according to most competent authorities, was either misapplied or stolen. The chief canal officials received enormous salaries, ranging from $50,000 to $100,000 a year, were allowed travelling expenses ranging from $5 to $50 a day, were provided with expensive residences and with fine horses and carriages. Previous to June, 1886, there was expended for office buildings and residences $5,250,000. The residence of the director-general cost $150,000, including a $40,000 bath-house. He had a private railway car which cost $42,000. In order to select a suitable carriage and horses for him a commission of seven of his assistants was sent to New York at the expense of the company to make the purchase. The hospital buildings at Ancon cost $5,600,000 and those at Colon $1,400,000. Stables had cost $600,000, carriages and horses for employees, $215,000, and $2,700,000 had been spent for servants for employees. Three men were employed in nearly every instance to do the work of one, and all were extravagantly paid. Every house, hospital, stable or other building that was erected, nearly or quite every purchase that was made of machinery and supplies of every sort, were charged to the company at double or treble the original cost, and the surplus was divided. If there was an orgy of gambling and drinking and vice, there was in progress with it one of the most unrestrained orgies of extravagance, corruption, and "graft" that the world has ever seen. Froude scarcely overpainted the picture when he wrote, after visiting the isthmus during his tour of the West Indies in 1885–6:

In all the world there is not, perhaps, now concentrated in any single spot so much swindling and villainy, so much foul disease, such a hideous dung-heap of moral and physical abomination as in the scene of this far-famed undertaking of nineteenth-century engineering. The scene of operations is a damp, tropical jungle, intensely hot, swarming with mosquitoes, snakes, alligators, scorpions, and centipedes, the home, even as Nature made it, of yellow fever, typhus and dysentery and now made immeasurably more deadly by the multitudes of people who crowd thither.

## CHAPTER VI

PESTILENCE AND DEATH — RAVAGES OF YELLOW FEVER — TESTIMONY OF EYE-WITNESSES — HEROISM OF THE MEN IN THE FIELD

BEHIND all the debauchery, extravagance, and bad management there lurked constantly the grim shadow of death. "Eat, drink, and be merry, for to-morrow you die!" This could well have been the motto to hang above the bars and gambling-tables in Colon and Panama, and in the camps amid the jungle. The most vigorous among the living to-day might be among the dead and buried to-morrow, smitten without warning by the swift and (at that time) mysterious scourge of yellow fever. It is not surprising, when one reads the authentic accounts of the ravages of this disease, that men sought to forget their peril by plunging into the wildest forms of diversion. What is surprising is that so many remained and faced the danger—faced it only to fall before it.

Estimates of the number of the French who lost their lives by this disease, mainly, vary greatly because no accurate record was kept, but it is a reasonably safe assertion that two out of every four who went from France died of it, and possibly three out of every four. It is said that many of them were induced to go to the isthmus in the first place and to remain there by the

very high salaries paid and by the opportunities for illicit gain; but this is not, in my opinion, either an adequate or a just explanation. There was something more than desire for pecuniary profit necessary to induce men to remain under the conditions which prevailed both in the working camps and in the two cities. It required no ordinary kind or degree of courage to induce a man who saw his companions fall one after another dead beside him, to continue at his post; yet this is what hundreds of Frenchmen did. To get a proper estimate of their courage and devotion, let me cite a few authentic instances of the silent and swift working of disease.

Sir Claude Coventry Mallet, at present British minister at Panama, was, in the early days of French occupation, British consul at the same place. Through love of adventure he accompanied one of the French surveying parties to the upper waters of the Chagres River. The expedition started with twenty-two men. Within a few weeks all its members except Mallet and the engineer in charge were incapacitated by disease. Twenty men went into hospital, where ten died. Mallet and the engineer in charge, a Russian named Dziembowski, returned to Panama, both in apparently unimpaired health. Dziembowski asked Mallet to advance him money with which to buy a suit of clothes, since he could get no money till his accounts had been rendered and approved. On the afternoon of the day of their return, the suit was bought and Dziembowski accepted Mallet's invitation to luncheon on the following day. The luncheon hour arrived, but the guest

did not appear. Going to the Grand Hotel in the evening Mallet inquired for Dziembowski, saying he had promised to lunch with him but had failed to appear. "Why," was the reply, "have you not heard of his death? He died of yellow fever at three o'clock this morning and was buried at six!" He had been buried in the new suit of clothes.

M. Cermoise, from whose book I have quoted on previous pages, records several equally dramatic cases. A dinner had been arranged at a field camp near Gamboa, in one instance, in honor of Henry Bionne, general secretary of the company, who was on the isthmus charged with a confidential mission.

The guests had assembled and were waiting to sit down when M. Bionne should arrive. Suddenly a lady present, who had been looking at the table with particular attention, cried out in much agitation: "We are thirteen at table!"

At this moment M. Bionne arrived. He heard her exclamation. "Be assured, madame," said he gayly, "in such a case it is the last to arrive who pays for all." And he sat down without seeming in the least disturbed by this sinister portent.

Never was there so gay, so lively a meal. M. Bionne was at his best, a delightful and witty conversationalist. He drank to our success on the Isthmus; we drank to his good luck, for in fifteen days he was to take the steamer and return to Europe.

Fifteen days later he sailed from Colon. At the end of forty-eight hours he was taken with yellow fever and died in a few days. The body was thrown into the Gulf of Mexico. He had not long delayed the payment of his debt!

Continuing, M. Cermoise gives a further history of what happened in the same camp:

Blasert had also left the camp. His wife wished to return to Europe with her children. He accompanied them to Colon, put them on board a steamer, and returned to Panama that same evening.

What could have affected him? Was it the result of the sudden change from life in the open air to that in town? At all events, the day after his return he took to his bed with yellow fever.

And he had crossed the far West and believed himself invulnerable. Certainly his moral character was above reproach. Alas! Nothing, neither strict morality nor crossing the far West, renders one invulnerable to yellow fever. Some days later the unfortunate man died like a new arrival from Europe.

He had also taken part at M. Bionne's dinner.

His wife and children, who had left him in good health, learned of his death on reaching France. That was a sad period for the administration. It seemed as though a wind of death were blowing over its employes.

After M. Bionne, Blasert; after Blasert, M. Blanchet continued the black series. He had just made an expedition on horseback into the interior of the isthmus, during which he had endured great fatigue. On his return the yellow fever declared itself, he took to his bed, and died in three days.

Perhaps the most tragic case was that of Jules Dingler, who was the first director-general of canal work on the isthmus. It was for him that the one-hundred-and-fifty-thousand-dollar residence had been erected. This was placed high upon the southern slope

"La Folie Dingler."

The $150,000 residence of the first French director-general as it appeared in 1904.

French machinery in the jungle.

of Ancon Hill, overlooking La Boca, now Balboa,* and the Bay of Panama. Before he could occupy it his wife, son, and daughter died of yellow fever, within a few months of each other, and he returned to France a broken-hearted man, where he died soon afterward. The house was known for many years as "La Folie Dingler," on account of its excessive cost and rather inaccessible location. It was used for a time as a small-pox isolation house, later as barracks for Colombian troops, still later by the Americans as a quarantine detention station, and finally, in February, 1910, was razed to the ground to make room for works in connection with canal construction.

Dingler was succeeded by Léon Boyer, who arrived on the isthmus in January, 1886, and had hardly entered upon his duties when he was smitten with yellow fever, dying on May 1.

Philippe Bunau-Varilla, who was a division engineer during this period, makes many references to the ravages of yellow fever in his book on the "Past, Present, and Future" at Panama. He says the effect the disease had upon the courage and activity of the working force cannot be estimated; that the elusive and mysterious malady defied all precautions, laughed at all remedies, and that all that the most expert physicians could do for its victims was to administer palliatives whose effect was moral rather than curative.

* The name was changed to Balboa by order of President Taft, on April 30, 1909, in accordance with a suggestion by Federico Alfonso Pezet, at that time Peruvian minister at Panama. See *Canal Record*, May 5, 1909.

"Two talented engineers," he says, "Messrs. Petit and Sordillet, were sent to me from Paris to occupy posts as chiefs of division. Their coming had given me hope of a strong reinforcement, but unfortunately, arriving together, they were taken to the cemetery fifteen days later, victims of the fatal malady which had so terribly thinned the ranks of the personnel of all classes."

Speaking generally of the working force, he says:

Out of every one hundred individuals arriving on the isthmus, I can say without exaggeration that only twenty have been able to remain at their posts at the working stations, and even in that number, many who were able to present an appearance of health had lost much of their courage.

Colonel Gorgas, in an address delivered at Los Angeles, Cal., in June, 1911, gives the following instances which came within his personal knowledge:

One of the French engineers, who was still on the isthmus when we first arrived, stated that he came over with a party of seventeen young Frenchmen. In a month they had all died of yellow fever except himself. The superintendent of the railroad brought to the isthmus his three sisters; within a month they had all died of yellow fever. The mother superior of the sisters nursing in Ancon Hospital told me that she had come out with twenty-four sisters. Within a few years twenty-one had died, the most of yellow fever.

Conditions like these were calculated to try even the strongest nerves. That for eight years Frenchmen were found in considerable numbers who were willing

to fill the constantly thinning ranks is a fact of which their nation may well be proud. They kept the force recruited sufficiently to enable the work to be carried forward till funds for its prosecution were exhausted.

How many of them gave up their lives in the struggle? It is impossible to state the number accurately. The Ancon Hospital records show that during the eight years of work by the first French company 1,026 patients died of yellow fever. As the West Indian negroes are immune to yellow fever, these were all white persons, and nearly all French. Colonel Gorgas estimates that as many died of yellow fever outside the hospital as in, and places the number of victims at about 2,000. This is, of course, mere surmise, but it is not unreasonable. Neither is the supposition, quite general among those who have studied the subject carefully, that two out of every three Frenchmen who went to the isthmus died there. But there is no exact information obtainable. Lesseps, in accordance with his uniform policy, minimized or suppressed the truth, and outside the hospital rolls no records were kept. The hospital rolls show that during the eight years of the first French company's work 5,527 employes of all kinds died of various diseases. As the French contractors were charged a dollar a day for each hospital patient, only a small proportion of sick laborers were sent to them. It is not an unreasonable supposition, quite generally made, that for one who died in hospital two died outside, which would raise the total death-roll during the eight years to about 16,500. This again is mere surmise, but after carefully weighing all attain-

able evidence, it seems to me to be a plausible estimate. Colonel Gorgas, who adopted that figure for several years, raised it later to about 22,000, but his reasons for doing so, which he has not published, but which he has stated to me, do not strike me as convincing.

It is the undivided testimony of the Americans who succeeded the French that they did their work well and accomplished results which were little short of marvellous when the conditions which surrounded them are taken into consideration. It is also the opinion of those Americans that, had similar conditions prevailed when the United States undertook the task, no better, if as good, results could have been secured. The French were ignorant of the mosquito transmission of disease, for the discovery had not been made. They erected and equipped admirable hospitals, and, in their ignorance, furnished them with the means of spreading, rather than checking, disease. To protect their patients from annoyance from the hordes of ants which infest the isthmus, they placed the posts of the hospital bedsteads in bowls of water. In these bowls the deadly *stegomyia* mosquito was bred, and when a yellow-fever patient came in the mosquito fed on him and carried the germs of the pest throughout the hospital, infecting other patients. Being ignorant also that another mosquito, *anopheles*, transmitted malaria, they placed no screens in the windows and doors of hospitals and other buildings, and thus permitted the unchecked dissemination of that disease.