

THE COLON SECTION OF THE PANAMA CANAL.

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In any enterprise the means adopted should be in direct proportion to the importance of the work to be done. At Panama the problem is a gigantic one; hence the preparation for work to be accomplished will necessarily assume similar proportions. The isthmus can supply but few of the needs of this great enterprise; all must come from Europe or the United States; and, this being the case, among the first requirements was a port of entry, with all its marine and industrial outfit, its docks and workshops. After this a city had to be built to contain the population which the work attracted to itself.

This preparatory work was commenced in January, 1881, and the point first selected on the Atlantic side was the harbor of Colon. This place had many advantages; it was the point of arrival of several lines of steamers from Europe and New York; it was the east end of the Panama Railroad, and most of the wharves were well-equipped for the transfer of material from ships to the railroad. But on further consideration, the company recognized the fact that it could not count upon any of the six existing wharves for its service; they belonged to as many different lines of steamers, and the Panama R. R. wharf, wrecked by storms and the shock of vessels against it, was entirely out of service.

The company soon found itself much embarrassed in the handling of its material, having no especial place for unloading; and as the day of arrival and departure of the steamers was fixed in advance, all material had to be hastily unloaded from the Canal Company's boats, and as hastily removed from the wharf to make room for the new arrivals. It was at first intended to buy and reconstruct the Panama R. R. wharf for the exclusive use of the company. But supposing this action would solve the question of handling the material, the problem yet remained of providing storehouses, workshops and houses for the employés; for the Island of Manzanillo, upon which is built the City of Colon, is, properly speaking, a mere swamp, in the interior of which it is impossible to erect any buildings. The west coast is already occupied by a few farms, by the city, and by the railways and wharves; the north coast presents only a narrow strip of land between the swamp and the sea. This last spot, however, is the best on the island, as it is exposed to the direct sun breeze; but room was wanting for the required constructions, which would necessarily cover a large space, and furthermore it was too far removed from the Panama R. R. wharf. Some other point than the island of Manzanillo must evidently be selected for the use of the company.

We ought to here remark that Colon has always had an unpleasant reputation for its unhealthiness. Without repeating all the stories told of this unhappy country, we are obliged to admit that a stay in this city is not agreeable. It is, in a word, the most sickly point in the Isthmus, and the chances of being stricken by disease are further enhanced by the gross ignorance and filthy habits of the colored natives. They seem to think that it is handy to have an open sewer before their doors, into which all manner of unclean things are daily thrown, to fester under a tropical sun.

M. Blanchet, failing to find a seaport, resolved to found a port on the River Chagres, as a solution of the problem presented. About six miles from Colon, following the line of the railroad, and about nine miles from the mouth of the Chagres, is the town of Gatun, which is surrounded by uplands sufficiently elevated to seemingly promise a healthy location. One of these hills is situated upon the right bank of the Chagres River; the railroad passes at its foot alongside the river, and canal will be located on the left bank and about a thousand feet from the Chagres. Between the sea and Gatun, the Chagres is from 23 to 26 ft. deep; but a bar at the mouth of the river reduces this depth to about 13 ft. While the present water is sufficiently deep over the bar, for most of the vessels using it, a dredge can easily make and maintain a deeper channel when required.

M. Blanchet now gave the order to abandon the unhealthy and crowded ports of Colon, and to create an entirely new port, with its docks and workshops, at Gatun; and put the houses of the men upon the top of the hill. This was the *Cité de Lessops*. Work was rapidly pushed, the top of the hill levelled off, and a sufficient number of buildings erected; at this place the first excavators were put together ready for work. But unhappily the climate declared itself against this enterprise. The first officials sent to Gatun, not having as at Colon the advantages of hotels, at least habitable, were compelled to

lodge either in the huts of the Indians, or in the unfinished barracks. The swamp fever broke out; some died, and the remainder, panic stricken, declared Gatun more unhealthy than Colon. The scheme of an interior port was then condemned; fault-finders abounded; and this idea, conceived in a proper and humane spirit, was made a reproach to its author and looked upon as a gross blunder. The first mistake was the first step toward the grave of the unhappy Blanchet.

In abandoning Gatun, where the new city stood sad and deserted, it was necessary to return to Colon. But if Colon, with its certain insalubrity, was preferred to the perhaps accidental state of affairs at Gatun, the necessity did not the less exist for founding an entirely independent port, and providing land for the required structures. The entrance to the canal being fixed in the arm of the sea which separates the Island of Manzanillo from the mainland, it was decided by M. Hersent to fill in the marshy coast lying between the railroad and the southwest shore of the island; and even to reclaim a certain area from the sea, by pushing out into the Bay of Limon a mole destined to protect the future entrance port against the heavy gales and waves from north and northwest. This filled in ground took the name of the *Terre-plein de Christophe Colomb*, and the entire force of this section was directed toward the speedy completion of this indispensable work.

Having finished the historical portion of our paper, we will now return to the question of the practical execution of the works of the company.

As the construction of the *Terre-plein* would consume much time, it was found necessary to buy or rent a number of small properties on the habitable portions of the island. In this way an establishment was founded on the northwest point of the island, near the light-house comprising the administration residency, the offices, barracks for workmen, a shed for the mounting of locomotives, a work-shop and a saw-mill. Between wharves 4 and 5 (see plan) a slip was built for setting up the dredges and lighters; to the south of Wharf No. 6 was a slip for setting up the great floating crane of 40 tons capacity. The temporary storehouses were placed a little behind the south end of the town, and different houses in Colon were finally utilized for offices and lesser storehouses etc. All this was, of course, very inconvenient, and necessitated for the employés fatiguing journeys and much loss of time. This period of provisional organization brings to mind some of the saddest memories connected with the history of the canal. All who were present must recall the chief of service at Colon, laboring 16 hours per day, filling every rôle, even that of nurse, who, after exhausting his forces, succumbed to disease at the end of three months of his superhuman labor. This chief was M. Etienne Antoine, an engineer well known, an old student of the *Ecole centrale*, and before entering that school, a workman to the age of thirty. It was difficult to find a successor, and the post remained a long time unfilled; then it was given to an engineer who remained but a short time on the Isthmus. A third was seized by the fever after a sojourn of two or three months. At last a fourth appeared—to whom we wish a sturdy and long resistance to climatic influences—and since August 1882 he has held the reins of this perilous government. From an administrative point of view, the organization of service at Colon has been somewhat modified. Originally Colon formed a general depot for the works, comprising the work properly so called, the workshops, material and the storehouses. It was thought finally that this service was too complicated, and there were other objections and inconvenient features in leaving in the hands of a chief charged with the execution of the work at Colon, the care of the workshops and storehouses, and the furnishing of materials and all machinery needed on the other portions of the Isthmus. Evidently this chief ought to be free to provide first for the needs of his own works. The general superintendency at Colon has now been suppressed, and the service has been reorganized under separate and distinct heads, or sections, including works, workshops and material, and general store-houses.

We will commence by giving for each of these sections a description of the labor required.

Of the general magazine we shall have nothing to say except that the company is compelled to provide all necessary material, not only for the works but for the material life of its employes. The storehouses are amply furnished with food, furniture, bedding, and even laundries; all, in fact, that the laborers need to keep them in good condition on leaving the work. M. de Lessops was opposed on principle to an organization which was certainly disastrous to local trade, but he has practically admitted the right of the men to have the oppor-