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THE PANAMA CANAL.

M. Ferdinand de Lesseps has promised that the first sod of the interoceanic canal shall be turned on the 1st of January, 1880. And M. Ferdinand de Lesseps has earned a great reputation in the achievement of the greatest work of the kind—the Suez Canal—ever prieviously undertaken. The same doubts about the feasability of the Panama Canal, that found ready expression in regard to the Suez, do not appear to be entertained. The Panama Canal is perhaps the most stupendous work of the kind ever undertaken by man; but its achievement is a question of means. The sands through which the Suez Canal was cut were unfavorable for obtaining secure banks on which land slides should not occur; but the soundings on the Panama promise comparative safety against this danger: they show a combination of sandy soil and hard rock.

Though the cutting will reach a depth of 340 feet on the highest point of the Cordilleras to be crossed, it has been determined that there are to be neither locks nor tunnels. This is one of the most notable features of the plan on which the work is to be conducted. To make one open canal, far enough below the sea level to admit the passage of large vessels, will involve an enormous cost. But a canal in that form will be far better than a canal with locks or tunnels. It will afford the greatest possible facilities to navigation; and that is deemed, as it undoubtedly is, the most important object in connection with the work. Stupendous as is the scale on which the canal will be made, there ought not, perhaps, to be any very great engineering difficulties, except the torrents on the Chagres during winter. It is possible to cut through rocks without having to slope at a very great angle to guard against landslides, or, more properly, rock-falls. The part of the isthmus where the canal is to be made is less subject to convulsions of nature than most others in that volcanic region. And the rivers, the beds of which will be utilized, will be found useful in transporting materials.

The route, unless changed, will be from the valley of the Chagres River, on the Atlantic, to the city of Panama on the Pacific. This is the route which, out of five that have at different times been suggested for an interoceanic canal, at first view, most forcibly arrests attention. The Bay of Panama, on which the city of that name is situated, is out of all proportion the finest on that part of the Pacific coast. The proposed line is nearly identical with that which was recommended by Spanish engineers to the Government of Madrid, before new Spain had thrown off the hard yoke of the mother country. They, at that distant date, projected a canal from the Venta du Cruces to Panama, in which the Chagres River would have been used. But if these engineers ever made a survey of the route, the facts it disclosed were kept from the public; for Humboldt afterwards confessed to a complete ignorance of the height of the mountain range at this point. All that that great geographer knew was that from the Cruces the ascent is at first rapid, and that there is then a descent of several hours to the South sea. Before Humboldt's time an open canal without locks, and of the nature of that now determined upon, had been proposed; but Humboldt evidently thought its execution impossible. "It appears to me," he said, "that the expectation of a canal of seven metres in depth, and from twenty-two to twenty-eight metres in breadth, which, like a strait, should go from sea to sea, and admit the vessels which sail from Europe to the East Indies, ought to be completely abandoned." And his reason for this suggestion was that "the elevation of the ground would force the engineer to have recourse either to subterranean galleries or to the system of sluices," on which only flat-bottomed boats, incapable of sea-service, could be used. But the timid counsels of Humboldt are discarded, and the former plan of a great, open, strait-like canal has been adopted.

If a better route than that under consideration be found, in the meantime there may be nothing to prevent its being adopted. The congress which had the matter in hand only expressed the opinion that this line ought to be adopted; and the question is whether that opinion was intended to be final. It does not seem that all the knowledge which surveys might give has been obtained; and if this be the case the final choice of route may have to depend on facts yet to be considered. The incidental advantages of the route indicated are considerable. It passes through a fertile country, inhabited by a population engaged in agriculture and commerce; a country especially adapted to the raising of cattle, and which produces nearly all the necessaries of life, and is besides well watered and well wooded. The canal will probably have to follow the centre of the valley of the Chagres River, as a means of avoiding on either side marshes, extremely dangerous to health. These marshes proved fatal to large numbers engaged in the construction of the Panama railway across the isthmus.

The cost of this gigantic work will of course be enormous. The first estimate, $100,000,000, has been successively increased till the amount now reaches $280,000,000. This includes right of way and the purchase of the Panama railway, but it does not include interest on capital during construction. It is not possible to tell how long the canal will take to construct, or at what rate the capital will be expended. Eight or ten years has been mentioned as the probable time of construction; and the rate at which the capital would be required to be called up would necessarily bear some proportion to the time. Interest at five per cent. would probably swallow up not less than $100,000,000 during the process of construction. Such additions to capital are serious obstacles to works which take a long time to construct becoming paying investments. The financial basis of the scheme is calculated upon a minimum revenue of $4,500,000 a year at first. This revenue would be derived from the passage of 6,000,000 tons of merchandise; but it is thought that the tonnage would reach 7,500,000 at first, with a prospect of a great future increase. The tonnage of the commerce which would have gone through this canal, if it had been in existence, has increased sixty per cent. in the last fifteen years. The very existence of the canal, it is contended, would increase international exchanges. But admitting all this, it cannot be said that the financial outlook is good; and the question is whether the prospect is such as to tempt so enormous an amount of capital into the enterprise. That question must receive some sort of answer before the work can be regarded as an assured success. The successful launching of this canal scheme will be proof that the turn of the wheel of time has brought round one of those frequently recurring periods in which speculative investments find favor with the public, and in which, while apparent prosperity is enjoyed, the seeds of future commercial crises are sown. In this way the cycle is completed; and before we suspect that the old one is over, a new one is well on its round.