

THE NICARAGUA SHIP CANAL.

UNITED STATES Minister Mizner, at Managua, has finally succeeded in settling the dispute between those two Central American states, Costa Rica and Nicaragua, in regard to the boundary between them in case an inter-oceanic canal should be constructed across the latter country on the route that is generally conceded to be the most feasible. This would involve the building of a canal into which the San Juan river would be turned a number of miles above its mouth. As that river is the boundary line between the two states a question was raised as to the ownership of the land between the present and the proposed channels of the stream. The settlement of that international difficulty leaves the field clear for the construction of the ship canal across the isthmus, and it is likely that active operations toward the consummation of the enterprise will soon be undertaken.

The scheme of constructing a ship canal across the isthmus originated shortly after the discovery of the Panama barrier to a direct route from Europe to the East Indies. Columbus was searching for a shorter route to India when he discovered America, and he thought he had reached the Asiatic coast. The operations of Balboa, however, dispelled that illusion and the old problem again presented itself. As early as 1528 Galvao, a Spanish engineer, proposed to Charles V. an artificial waterway across the isthmus, and six years later that sovereign directed Cortez to locate a route, which was subsequently done. In 1551 Gomara suggested three routes, one of which was by way of Nicaragua. In the two centuries following a number of explorations and plans were made, but without any practical results. The publication in 1804 of the able discussion of the merits of the various routes by Humboldt aroused new interest in the matter, and since then the growing importance of the problem has commanded wide attention. The abandonment of the search for a northwest passage, or, rather, its demonstrated uselessness, revived the idea of cutting through the land that communication between Europe and India might be established by water without the necessity of doubling Good Hope, which was a tedious and dangerous voyage. Then the Suez canal was conceived by that celebrated French engineer, M. de Lesseps, who recently wrought such a gigantic failure on Panama, and it was carried to successful issue. In a measure that drew attention from the Nicaragua canal because it relieved the old world of the previously existing difficulty of communication between its extremities. But the rapidly growing new world would not permit the question of cutting through the isthmus to retire from consideration. Its fast extending commerce and the development of the Pacific slope as well

as of the eastern portion, especially of North America, made more urgent each year some means for transferring ships between the Atlantic and Pacific oceans without making the long voyage through the tropics and around Cape Horn. The failure of the de Lesseps canal enterprise on Panama directs more attention to the Nicaragua route, and, now that all international complications likely to in any manner interfere with the consummation of that enterprise have been amicably adjusted, there is a probability amounting almost to certainty that the Nicaragua ship canal will be a living agent in the commercial world within a few years.

The route in most general favor may be briefly described as follows: Starting from Brito harbor on the Pacific a canal sixteen miles long will connect with lake Nicaragua, which is 107 feet above the ocean. The vertical distance could be overcome by ten lift locks. Thence the course will lie in a southeasterly direction through the lake, passing the volcanic island of Madera-Ometepe, in a straight line to the outflow of the San Juan river. The lake varies in depth between five and sixteen fathoms. At the outflow of the San Juan there is a considerable shoal that will have to be removed. Passing down the river it has a natural navigable channel for a distance of about twenty-five miles. Then a series of rapids will need to be overcome by artificial means and near the mouth of the San Juan it will be necessary to construct a harbor, which is the most difficult engineering feat presented in the entire scheme. In order to avoid the silt that washes down from the mouth of the Rio Grande (not the one that forms the boundary between the United States and Mexico) a revetment must be constructed, and it is also considered essential to the complete success of the Atlantic end of the enterprise that the San Juan river be turned from its course some twenty or thirty miles above its mouth and conducted in a canal to tide water a few miles northward of the present mouth of the stream. Restoring the harbor of Greytown is the greatest difficulty to be overcome. But that is considered of small importance in comparison with some features of the other routes suggested.

Another route across Nicaragua is to go up the San Juan river to Lake Nicaragua, through that lake and to Lake Maragua a short distance to the northwest, through that lake and to the ocean by means of a canal forty-five miles long across the great plain of Leon. This is longer than the one first described, but it is said to be much more easily constructed, mile for mile, and for that reason it is viewed with favor by many engineers. Still, the course through Lake Managua is little better than it would be if the lake were not there, it being necessary to dredge and blast the channel nearly the whole distance of about fifty miles.