

	Miles.
De la vuelta.....	8,900
The width of the Amazon at its mouth, from Punta Tijoca to Cabo Norte, is 180 miles and the impetuosity with which it enters the sea is such that it does not mix and its waters are potable at a distance of more than 120 miles from the coast.	
The Amazon contains islands like Marajó or Joanes of more than 60 miles in length by 24 in width. The difference in the height of the waters of the Amazon between the dry and the rainy season is 30 feet.	
The Huayaga, navigable for river steamers.	300
The Ucayali, " " " "	600
The Yurúa, " " " "	700
The Yavari, " " " "	900
<i>Bolivia.</i> —The Purús has a length of 1800 miles of which are navigable for steamers....	1,500
The Madera, which can easily be connected with the Beni and Madre de Dios, has a course of 1,200 miles of which are navigable for steamers.....	1,000
<i>Brazil.</i> —Besides the river Amazon or Solimoes, as it is called there, which flows through the Pará and Amazon States, it has also the river Xingú with a course of 1,000 miles of which those navigable for steamers are.....	600
The Tocantins has a course of 900 miles, passes at the foot of the Sierra Esclavona, Thich separates it at a distance of not many miles from the River Alto de la Plata or Paraná with which it could be connected by means of a railway or of a canal, and thus the navigation in the basin of the River de la Plata could be united with the immense one of the Amazon. This river is navigable for steamers.....	500
TOTAL MILES.....	15,000

I accompany a map whereon can be followed the course of these rivers, the explorations made with my brothers and the other important data consigned in the explanation of the same map.

It is proper to take into account that, if to these fifteen thousand miles of river navigation, the 10,223 miles of Inter-Continental Railway are added, there is a total of 25,223 miles, from which it is easy to calculate the immense industrial and commercial development which they would effect, for the ample repayment of the capital required for the construction of the Inter-Continental Railway.

As an example of the great facilities of these communications, let us suppose the Inter-Continental Railway to be accomplished and that a traveller were to start from New York; he would traverse the United States, Mexico, Guatemala, Salvador, Honduras, Nicaragua, Costa Rica, Colombia, Ecuador, Peru, Bolivia, and would finally arrive in the Argentine Republic. At Buenos Ayres he could embark on the Río de la Plata, or Parand, ascending the same, after traversing Paraguay, in order to seek the communication with the Tocantins river, across the Sierra de la Esclavona. He would embark on the Tocantins, descend by it to the Amazon, take the Trombetas river, and by it visit the Guianas; he would go to the Madera and Purus Rivers, and by them he would visit Bolivia; he would go to the Yavari and Yurúa, the Huallaga and the Morona, and by them he would visit Peru. By the Tigre, the Pastaza and Napo rivers he would visit Ecuador; by

the Caquetá and the Putumayo he would visit Colombia and Venezuela; by the Rio Negro, and ascending the latter until meeting the Caciquiare, which communicates with the Orinoco, he would pass to the latter to seek its affluent the Meta; he would ascend the latter by steam-boat to Cabuyaro, at a distance of sixty miles from Bogota, the capital of Colombia, and returning to the Amazon by the same route, he would arrive at the city of Iquitos and there take the trans-Atlantic steamer which, without transshipment, would take him to Liverpool.

It is not an exaggeration to call the Amazon river the American Mediterranean Sea, for on its waters navigate, as stated before. Trans-Atlantic steamers for 3,000 miles and river steam-boats for 12,000 miles.

MEASURES WHICH SHOULD BE TAKEN BY THE INTER-CONTINENTAL CONFERENCE FOR THE DEVELOPMENT OF THIS RICH REGION, AND TO FACILITATE THE CONSTRUCTION OF THE INTER-CONTINENTAL RAILWAY.

All the countries represented at this Conference being interested in the construction of the Inter-Continental Railway, and the majority of them being joint owners of the 4,000,000 square miles which the Amazon region contains and which it may be said is in its entirety uncultivated and uninhabited and consequently merely vacant land, and as the rivers which water it in all directions belong to them, we think that, for the benefit of each country in particular and for the benefit of the Continent and of Humanity in general, it would be proper to ask the different Governments:

1. That they declare the navigation of said rivers free for all the flags of the World, subject to the provisions of the Custom House regulations of each country; and

2. That they assist the enterprise of the Inter-Continental Railway, with liberal grants of the vacant lands and mines of the region referred to, which in their larger part are entirely unknown at the present time and consequently are without any value.

This, Mr. President, is the work which in the name of the Delegation of Colombia I respectfully offer to the Conference which is engaged in the consideration of the destinies of America; it has no other merit than that of the constancy with which it was realized, of the personal desinterestedness and the ardent desire to further the welfare and progress of our Continent.

Mexico, December 30th. 1901.—(Signed.) *Rafael Reyes.*

The Honorable Mr. Davis, Delegate from the United States of America.—Mr. President, before the American Delegation left Washington the President of the United States referred to me a document which had been prepared by the Honorable Delegate from Colombia, which I have read with great interest and information, and I now wish to thank him for the additional information which he has so ably given us.

His Excellency the President Raigosa.—As the very interesting report read by the Honorable General Reyes, Delegate from Colombia, embraces matters of very distinct character, that would be cause for the reunion of various Committees, the Chair, if the Honorable Conference so accepts, is of opinion that it is preferable to name a special committee

charged with the examination of the important work of Mr. Reyes.

Secretary Macedo.—The special committee named by His Excellency the President, charged with examination of work of General Reyes, will be composed of Messrs. Delegates Augusto Matte, Alfredo Chavero, William I. Buchanan, Manuel Alvarez Calderón and Lorenzo Anadon.

SESSION OF JANUARY 2, 1902.

Secretary Macedo.—At petition of various Delegates, the number of members of the special committee charged with the issuance of a report regarding the work presented by General Reyes, is increased, there being designated as additional members the ir Excellencies General Rafael Reyes, Manuel M. Galavis, Luis F. Carbo, Juan Cuestas, Cecilio Baez and Fernando E. Guachalla.

His Excellency General Reyes, Delegate from Colombia.—I beg His Excellency the President to please excuse me from forming part of the Committee, for being author of this work, I would be embarrassed to form part of it. Respecting the opinion of the Delegation of Colombia, upon the subject in concrete and to the terms of the work, it is already consigned in it.

His Excellency Secretary General Casaus.—The Chair, ought to inform the Conference of the motive that led to the designation of General Reyes as member of the Committee. Some of Their Excellencies the Delegates indicated to the Chair respecting the probable conclusions that the Committee would have to arrive at, and esteemed it very proper that all the countries of South America interested in the work that is sought to be carried out by the concert of the Governments, be represented on the Committee. For this reason the Chair was of the opinion that it should give representation to the Government of Colombia, and as said Government is represented here solely by His Excellency General Reyes, he was designated to form part of the Committee.

SESSION OF JANUARY 30, 1902.

Secretary Macedo.—A note has been received from the special committee named to examine the work presented by His Excellency General Reyes, Delegate from Colombia, in which said committee informs that the Delegations of the Argentine Republic, Bolivia, Colombia, Ecuador, Paraguay, Peru and Uruguay, have subscribed a convention for the reunion of a Geographical Congress in Rio de Janeiro, for the purpose of occupying itself principally with the communication of the three grand hydrographic basins of South America, and in which it solicits that after inserting in the minutes the said Convention, that it be transmitted, with the statement accompanying it, to the Secretary of Foreign Affairs of Mexico, for its perfection. The note, the statement of motives and the Convention read as follows:

Mexico, January 28th 1902.

To His Excellency, the Secretary General of the Pan-American Conference:

The Special Committee appointed to study the problem of the interior navigation of South America, has received a Convention, signed by the Dele-

gates of the Argentine Republic, Bolivia, Colombia, Ecuador, Paraguay, Peru and Uruguay.

In the said Convention the representatives of the countries named, have agreed to call a meeting of a Geographical Congress at Rio de Janeiro, for the purpose of treating principally on the communication of the three great South-American Hydrographic basins.

The Committee believes that this idea, the practicability of which has been demonstrated some centuries ago, is of the greatest importance for the civilization of the Continent, and fully appreciating the value of the agreement at which the interested nations have arrived, the Committee does not hesitate to submit the same to the Conference, as an international act of the highest importance, and to request that, after inserting it in the respective minutes, it be transmitted, with the annexed statement, to the Department of Foreign Affairs of the Mexican United States, for its action.

Mexico, January 28th., 1902.—(Signed.) *Lorenzo Anadon.*—*Alfredo Chavero.*—*Rafael Reyes.*—*W. J. Buchanan.*—*L. F. Carbo.*—*Fed. Henriquez i Carvajal.*—*Juan Cuestas.*—*Cecilio Baez.*—*Manuel Alvarez Calderon.*

CONVENTION celebrated by the delegations of the Republics of Argentina, Bolivia, Colombia, Ecuador, Paraguay, Peru and Uruguay for the reunion of a Geographical Congress in Rio de Janeiro.

STATEMENT OF REASONS.

The mystery which envelops the interior of South America, with its immense territory covered by forest and traversed by thousands of rivers, is to-day no better cleared up than in the last period of Spanish domination. It may be said, on the contrary, that the explorations and the diaries of voyages, which were so numerous in the 18th. century, have not had any sequels,

Spain, in the three hundred years in which it was occupied in colonizing this country, sent out legions of missionaries who penetrated bravely to the most retired spots. The information gathered by these missionaries served as antecedents in many cases to the audacious adventurers who, if not by reason of religious zeal, then in the sphere of ambition and for political reasons, effected the most difficult expeditions into the deserts, into the forests and into the net of rivers of the Southern Continent.

From the famous voyages of Francisco Orellana, Pedro de Orsua and Pedro Texeira, and the scientific explorations of La Condamine, of Malaspina, and of Haenke, up to those of Humboldt and of the celebrated surveyors George John and Antonio de Ulloa, there is a fruitful epoch of investigations and discoveries, which are the subject of a vast and rich literature, which was almost exhausted at the beginning of the independent life of our nationalities,

These struggles for liberty changed the current of ideas of the new American generations. To the ancient Castilian spirit, essentially adventurous, in perpetual attempts of audacious enterprises and of discovery of unknown countries, succeeded first the spirit of revolution, and later the lively ambitions to constitute the states. In their wake came the interecine struggles, caused by the lack of adaptation to the new order of things and the quarrels among

countries: all this, as was natural, paralyzed the work of exploring and colonizing the centre of South America.

* *

It is true that attempts of more or less importance have been made in this direction, as well by the governments, as by private persons. There exist accounts of official expeditions and private explorations, like those of D'Orbigny, Tucker, Raimondi, Grevaux, and, in our days, those of Wertheimann, Proaño, Maldonado, Portillo, Pando and many others. But these expeditions were limited to certain zones and, up to the present day, nobody has effected a well concerted work. In addition, the disbandment of South America into ten Republics, and the entire lack of harmony between them, have not permitted to make the explorations, according to a common and general plan, as was the case when the sovereigns of Spain stimulated and promoted them.

* *

Nor has the European policy of expansion, which has been active since the last third of the century just past, taken any part in modifying this state of things. By reason of the new tendency caused by the density of the populations and the necessities of commerce, European civilization has compelled Africa to disclose its mysteries, and will very soon traverse it by a railroad from one extreme to the other.

In America, it has not been possible for the same to succeed. From the time that the American territories ceased to be *res nullius* for the work of colonization, only the abnegations of science have been able to inspire some men with the desire to undertake excursions into the immense territories which again have become as unknown as in the times of Columbus.

* *

The sons of South America, on their part, have not inherited the love for extensive excursions, which before characterized their race, and which now is an attribute of other nations. The work of the ancient explorers and travelers continues to be, for this reason, the only literature, properly speaking, of this nature, and still constitutes the only source of consultation for the clearing up of many points. For this reason also, the European nations do not take into account that, among the natural wealth of the South American soil, its greatest part, without doubt, consist in its hydrographic system, which is really marvelous and without rival in all the world.

Europe only has the Volga and the Danube, which, in South America, will be rivers of the third class. In the immense expanse of Africa there are only the Nile and the Congo to be mentioned as rivers of great size. And in the North of the New World, the Mississippi and the St. Lawrence together are not equal to the Parana. The three hydrographic basins of South America, formed by the Orinoco, the Amazon River and the Plata, with the thousand of rivers which are their tributaries, constitute in this manner a net work of natural communication, which, if they could be united, would increase the wealth of our countries a hundred-fold. We shall see, in the following statement, that this possibility can be demonstrated.

* *

The idea of opening an interior communication, by utilizing these water course in an extension of more than 45 degrees of latitude, is not entirely new. Since the days of the Conquest, river navigation across the whole Continent has been thought possible. La Condamine was one of the first who explored the basin of the Amazon River in a scientific spirit, navigating the rivers which come from the North and unite with it on its left shore. This celebrated savant was much occupied with investigating the communications between the Orinoco and Amazon rivers, and it may be said that he accomplished his object. In the report presented by him to the Academy of Sciences of Paris, he expressed himself as follows:

«On August 23, 1743, we entered the Rio Negro, which is another sea of sweet water, which the Amazon River receives from the North. Being engaged on this river, we obtained very particular notices of its communication with the Orinoco, and consequently of the Orinoco with the Amazon River; the most decisive of these notices consisted in the indubitable testimony of an Indian of the Spanish mission of the shores of the Orinoco, with whom I spoke, and who had come in his canoe from Para. This proof, and others which I might cite, are, however, useless, in view of the last notice I received. I have just read a letter, written at Para, by Padre Juan Ferreira, rector of the College of Jesuits, in which letter he states that the Portuguese had ascended in a flying trip from river to river, until they had found the superior of the Jesuits of the Spanish mission of the Orinoco, with whom the said Portuguese had returned, and, without disembarking in any place, had arrived at the camp of the Rio Negro, which communicates the River Orinoco with the Amazon.»

The communication of the Orinoco with the Amazon which recently has been demonstrated, La Condamine adds, may be accepted as a geographical discovery, inasmuch as, although the confluence of these rivers is marked on the ancient maps (according to the data furnished by Acuña) all the modern geographers, as if actuated by a common accord, had suppressed it in the new maps. This is not the first time that the is positive has been believed to be an illusion, that the spirit of criticism has been believed to be chimerical by those who best ought to have known it.

* *

The famous Humboldt occupied himself enthusiastically with the possibility of communicating the hydrographic basins of South America. Alluding to the same doubts, which La Condamine had expressed, Humboldt says: '«When some travelers had already recognized the nature of the communication of the Orinoco with the Amazon river, a doubt was cast on the possibility of the fact, on various occasions. A chain of mountains, which the geographer Hondius had imagined, at the end of the sixteenth century, to separate the basins of these rivers, was admitted and denied successively. It was forgotten that the existence of these mountains did not prove in an absolute manner the separation of the two

1 Humboldt, Voyage to the Equinoxial Regions.

hydrographic systems, inasmuch as the waters have opened a passage for themselves through the Cordillera of the Andes and the Himalaya chain, the most elevated of the world. It was affirmed, on the other hand, and not without reason, that the voyages which it was said had been executed by means of canoes, were certainly no sure sign that the navigation had not been interrupted by portages. I myself have been able to ratify all the circumstances of this bifurcation, so long disputed, but I am far from reproaching the savants, who, guided by a noble zeal in the search for truth, have hesitated to admit what did not appear to them to be completely demonstrated.»

In order to dispel these doubts, Humboldt describes with the greatest clearness the topography of the great zone which, to the East of the Andes, extends from the River Plata to the Orinoco.

The following is the description:

«The three isolated groups of mountains, that is to say, those which are not branches of the Cordillera of the Andes, and of their continuation towards the litoral of Venezuela, there is one to the North and one to the East of the Andes; the first mentioned is that of the Sierra Nevada de Santa Marta, and the other two are the Sierra de Parima, between the fourth and the eighth degree Northern latitude, and the mountains of Brazil, between the fifteenth and twenty-eight degree Southern latitude. This peculiar distribution of the great differences in height, produces these plains or basins, which together form an area of 420,620 square leagues or four-fifths of the South American Continent East of the Andes. Between the Coast Range of Venezuela and the group of Parima, the plains of the Apure and of the lower Orinoco extend themselves; between the group of Parima and the mountains of Brazil there are the plains of the Amazon, of the Rio Negro and of the Madeira; between the group of Brazil and the Southern extremity of the Continent there are the plains of the River Plata. As the group of Parima, in Spanish Guayana, and the group of Brazil, or of Minas Geraes and of Goyaz, are not united towards the West with the Cordillera of the Andes, of New Granada and of upper Peru, the three plains of the lower Orinoco, of the Amazona river and of the Plata communicate among themselves by low straits of considerable width. These straits are also plains, with a direction from North to South, and are traversed by almost invisible ridges, which form the watersheds. These ridges or ranges of hills (and this remarkable phenomenon has not attracted the attention of geognots until now), are located between the second and third degree of Northern latitude and the sixteenth and the eighteenth Southern latitude. The first mentioned forms the divide of the waters which enter to the North East in the lower Orinoco, to the South and South East in the Rio Negro and the Amazon River; the latter divides the tributaries of the right bank of the Amazon River and those of the Plata River.»

«The direction of these ridges is such that, should they be marked by mountain chains, they would form the groups from the Parima to the Andes de Turiana (Hist. recherches Vol. 6, p. 400) and the

1 By analogy with the straits of the sea, Humboldt calls land straits those communications which temporarily, in case of high water, are formed between two or more river basins.

«mountains of Brazil to the promontories of the Andes, of the Santa Cruz de la Sierra of Cochabamba and of Potosí. The vagueness of this supposition is only for the purpose of making clearer the structure (charpente) of this vast part of the Globe. These elevations of the plains, in the intersection of two slightly inclined planes, these two lines of ridges the existence of which is not perceptible, as in Volhinia, except by the watercourse, are parallel with the chain on the coast of Venezuela; and offer, so to speak, two systems of counter-slopes, not very noticeable, running from West to East, between the Guaviara and the Caquetá, and between the Mamoré and the Pilcomayo.

* *

«Of the three plains connected by narrow passes,—the plains of the Lower Orinoco, of the Amazon and of the Rio de la Plata,—the former and the latter are plains covered with grass, while the intermediary plain, that of the Amazon, is a thick forest. With regard to the two passes which form strips running from North to South (from the Apure to the Caquetá, through the Province of the Llanos, and from the Spring of Mamoré to Pilcomayo, through the Provinces of Moxos and Chiquitos), present bare and grassy plains, like the plains of Caracas and Venezuela.»

Lastly, said savant, on contemplating this part of the world, exclaimed hopefully:

«From the moment I left the shores of the Orinoco, a new era was prepared for the social condition of the people of the West. After the bitter civil dissensions will follow the benefits of peace, and of a freer development of the industrial arts.»

«This division of the Orinoco, this Isthmus of Juanini, so easy to open out by means of an artificial canal, shall call the attention of commercial Europe. The Casiquiara, as wide as the Rhine, the length of which is 180 miles, shall no longer form in vain a navigable line between two river beds which have an area of 190,000 square leagues. The cereals of New Granada shall be carried to the banks of the River Negro; from the springs of the Napo and of the Ucayali, from the Andes of Quito and Upper Peru one will descend in boats to the mouth of the Orinoco, traversing a distance equal to that from Timbuctoo to Marseilles. A country nine or ten times larger than Spain, and rich in most varied products, is navigable in all directions by means of the natural canal of the Casiquiara, and of the division of the rivers, a phenomenon which will some day become of such importance for the political relations of nations, deserves doubtless to be carefully examined.»

* *

«From 1782 to 1790 the Engineers who were commissioned to determine the limits between the possessions of Portugal and Spain, prepared a geographical map called Boundary map of the country of Matto Grosso and Cuyabá. In this map can be read, in the part relating to the springs of the Paraguay and Guaporé Rivers, the following note:

«An Isthmus of 2,400 fathoms (brazas) exists between the River Plata and the Amazon, the Gov-