

“Great as the volume of the Paraná River at its lowest summer level is, immense in comparison to the largest European river, and much larger than that of all the European rivers put together, it is but a small fraction of its flood-volume during exceptional rises; and we can only wonder at the magnitude of the sources which for months, nay, for whole years together, pour forth inconceivable masses of sweet water, every drop of which has been raised by the power of the sun from the Pacific and Atlantic Oceans above the tops of the highest mountains of Brazil and the Andes.

“The Mississippi, in the United States of America, is not unlike the Uruguay in dimensions and other features—we have similarity in width, depth, currents, and fall, although the North American is the larger of the two. Comparing, however, the Paraná with the Mississippi, the former might claim the latter as his eccentric daughter under fourteen. The low-water dimensions measure a river's greatness, although things of different natures and character do not bear strict comparison. What we, however, understand by greatness is possessed in an exceptional degree by the Paraná.

“In order, further, to compare the Paraná River with others, it may be stated that its annual flow is double that of the Ganges, three times that of the St. Lawrence, four times that of the Danube, and five times that of the Nile. We have records of 380 cubic miles in one year.

“There are differing conditions of importance between the Paraná and the Mississippi, explaining the causes of the greater discharge of the Paraná. While they both flow south, one flows from colder to warmer and the other from warmer to colder regions; and it is in the warmer regions in both cases that the rainfall is the greater. On the Mississippi, in the northern regions, where we find the greatest drainage-area, the rainfall is about 35 in. per annum; in the southern, where the area is less, the rainfall is 60 in. per annum. With the Paraná there is a rainfall of about 60 in. in the northern part, where the drainage-area is greater, and about 40 in. in the southern part, where it is less.

“The length of the Paraná River is about three thousand miles; its navigable length, between Cuyabá in the north and the mouth of the Paraná in the delta of the La Plata, is 1,825 miles. The Uruguay River, from San Javier to the delta of the La Plata, has a navigable length of 603 miles. The Paraná River is made up of the two important rivers which unite at the City of Corrientes, the Paraguay and the Alto Paraná. The length of the latter above Corrientes to the falls of the Yguazú is 365 miles and it is navigable nearly to that point. These wondrous falls excel in beauty, as well as exceed in dimensions, the Niagara Falls. The latter are 160 ft. high, as a maximum, and four-fifths of a mile long, including Goat Island. The Yguazú are 213 ft. high in one leap and 106 ft. in two leaps, and two miles and one-third long, with, at times, an immense volume of water. The gorgeous and varicoloured foliage of the luxuriant subtropical vegetation which abounds on all sides adds a charm to the falls. They rank among the most beautiful and wonderful works of the Creator. The ‘remolinos,’ or whirlpools, below the falls equal the famous whirlpool at Niagara.

“The Uruguay is an entirely different river in every respect from the Paraná. It is at times a mighty river rivalling the Paraná; at others it sinks into comparative insignificance. The Paraná is a great river at all times. The Paraná is a type of a truly great river; the Uruguay represents a mighty torrent of extraordinary dimensions. The Uruguay rises near the Atlantic seaboard in Brazil, in the Sierra del Mar, then runs west to the highland of the territory of Misiones. These highlands prevent it from uniting with the Alto Paraná River at that point, which is only about sixty-eight miles distant. Along six hundred miles of its course from San Javier to Concordia the bed of the river is filled with rocky ridges, which at low water prevent continuous navigation, but during the floods, which are quite sudden but not long-continued, the river is everywhere navigable. The river rises, in floods, at Concordia about 46 ft. Compared with the Paraná, it is a clear stream, carrying very little sediment in suspension. The Paraná is an entirely different river. Its source being in the tropical and rainy region of Brazil, on the flanks of the Andes, its floods are much longer-continued. At the confluence of the Paraná and the Alto Paraná at Corrientes the rise of the floods is about 33 ft.; at Rosario, 225 miles above Buenos Aires, it is from 19.7 ft. to 23 ft., or 23½ ft. in extreme floods. When these occur the river is about twenty-three miles wide, covering the entire country with a depth of 6 ft. to 10 ft., and extending to the highlands of the Province of Entre Rios.

“The physical characteristics of the bed of the river are consequently entirely different from those of the Uruguay; the bed of the latter is stable, that of the former very unstable. The sedimentary matters carried in suspension, however, are very much less than those of the Mississippi; probably only one-tenth of the amount carried in the Mississippi in times of flood. For this reason the changes in the bed and banks are less radical; the most noticeable change is the movement of the islands and bars down stream. For example, the Island of Espinillo, in front of the City of Rosario, lying in the middle of the river and about two miles and a half long, has moved, flanking, down stream about two miles and a half in the last fifty years, and by this movement the advancing bar of the island has approached the river-bank in front of Rosario and closed up the navigation channel. The maximum velocity in great floods often reaches 6½ ft. per second, although usually it is much less, equal to that of the lower Mississippi.

“Both rivers are susceptible of improvement by dredging, the one to Asunción, which is 842 miles above the mouth, and the second to Concordia, which is 230 miles above the mouth. In the Paraná there is nothing but sand to be removed throughout its entire length; in the Uruguay there are several places where it is necessary to remove rock and gravel. But, generally, the channel can be deepened by hydraulic or suction dredging.

“The National Government is under obligation, by the law passed by Congress for building the Port of Rosario, to make and maintain a depth of 21 ft. at low water in the Paraná River from the head of the Delta to Rosario, and in the delta of the La Plata to Buenos Aires a depth of 19 ft.