

CHAPTER XXI.

Famous Rapids and Cascades — Niagara — Amazon — Orinoco —
Parana — Nile — Livingstone.

IN all its features and characteristics the great water-course, including the great lakes, which feeds the Niagara, is peculiar and interesting. It is more than two thousand miles long; its utmost surface-sources are scarcely six hundred feet above tide-water; its bottom, at its greater depth, is more than four hundred feet below tide-water. In all its course it receives less than two score of affluents, and only two of these, the St. Maurice and the Saugeen, bring to it any considerable quantity of water, and no flood in any of them discolors its emerald surface from shore to shore. Only fierce gales of wind bring up from its own depths the sediment that can discolor its whole face. Far the greater portion of its water-supply is drawn from countless hidden springs, lying deep in the bosom of the earth. In all the elements of beautiful, picturesque, and enchanting scenery it is unrivaled.

The rapids of the Niagara just above the Falls, from the Leaping Rock down through the Witches' Caldron to the edge of the precipice, are nearly a mile in width, and discharge ten million cubic feet of water each minute. But for a combination of grandeur and

beauty, and for imparting a sense of almost infinite power, nothing can surpass the Whirlpool Rapids below the Falls, where the ten million cubic feet of water are compressed into a tortuous, tumultuous channel, less than four hundred feet wide.

There are many lesser rapids in the St. Lawrence, from the Thousand Islands to Montreal, the passage of which in the large lake steamers is an exciting voyage. The constant changes of scenery at every turn and in every rood of progress is almost bewildering. Then the alternation of rapids and broad expanses of river, the bird-like motion as the steamer sinks and sails down through the rapids, and the sense of relief when it seems to rise and glide over the smooth river, vary and increase the excitement. There is developed in one of those expanses a peculiar geological feature called the Split Rock. The name is strictly accurate. The descending steamer finds but one narrow channel, a little more than its own width, through which it can pass in a stream more than half a mile wide. It lies between the sharp corners of a broad, wedge-shaped cleavage in an immense rock which, by some convulsion of nature—not by any abrading process of the elements—has been literally split downward more than eighty feet. The last crooked and turbulent rapid passed just before reaching Montreal is the terror of the river pilots, and they never attempt its passage except by daylight. From Montreal to the Gulf of St. Lawrence the constantly deepening channel flows with an unbroken current.

It is a notable fact that the great river of rivers, which drains a larger territory than any other on the globe, the Amazon proper, has a fall of only two hundred and ten feet in a course of three thousand miles, and while it has a deep channel and a uniform current of three miles an hour for its whole length, it has no broken rapids. But in its many great affluents rapids are numerous, though not so famous as those found in other South American rivers.

The river Orinoco, more remarkable in some respects than the Amazon, receives the waters of four hundred and thirty-six rivers, besides two thousand smaller streams. It is one thousand five hundred miles long, is navigable for seven hundred and eighty miles, and at Bolivar, two hundred and fifty miles from its mouth, it is four miles wide and three hundred and ninety feet deep. Its famous rapids of the Apure and Maypure were visited by Humboldt. At the latter, the river is two thousand eight hundred and forty yards wide, and plunges down an inclined plane about three miles long, making a fall equal to forty feet in vertical height. It is dotted with innumerable islands which furnish a striking contrast to the vast sheet of white water, presenting the singular appearance of an eruption of shrub-crowned rocks in a sea of foam. These islands, and its great width, constitute the peculiar characteristics of this chute.

In the grandest of the South American rapids, those of the river Parana, a vast volume of water from a channel nearly two and a half miles in width is compressed into a gorge only sixty-six yards wide, through which

the flood dashes down a slope of sixty degrees inclination and fifty-six feet perpendicular fall. Its roar—a perpetual monotone—is heard thirty miles away.

Hardly less remarkable than the rapids of the South American rivers are those of the two great African rivers, the Nile and the Congo, or, as Mr. Stanley has re-christened the latter, the Livingstone. The Nile may be compared to a vast tree with its huge delta-roots in the Mediterranean, its boll extending up through a rainless desert nearly one thousand five hundred miles to meet its numerous branches which stretch up into the mountains of Abyssinia, and the vast basin south of the equator that contains the great lakes of Victoria N'yanzi and Albert N'yanzi. From these branches in each year, at a fixed season, are poured down the sediment-charged waters which irrigate and fertilize an immense valley that would otherwise be only a parched and desert waste.

Without specifying the data for his calculations, Mr. Stanley, who saw them both, states that the volume of the Livingstone is ten times greater than that of the Nile. Its course is interrupted by two series of cataracts, or rather a combination of cascades and rapids. The first series, seven in number, occurs within four hundred miles of its source, and consists of the Stanley Falls, occupying different points in a channel sixty-two miles long. Its banks are of moderate elevation above its bed, and in the long, bright, equatorial days the leaping, sparkling, foaming waters present a scene of dazzling brilliancy. In the second series, named by Mr. Stanley the Livingstone Falls, there are thirty-two cascades, more

extensive and imposing than those of the first. The river, after a gentle descent of nearly one thousand miles, and after receiving many large affluents, reaches the first of these impetuous torrents where all its waters are compressed into a narrow gorge only four hundred and fifty feet wide, and at a single point near the right bank where a sounding was possible, Mr. Stanley found a depth of one hundred and thirty-eight feet.

The remaining thirty-one cascades are distributed along a channel one hundred and fifty-five miles in length, between banks from fifty to six hundred feet high, and having a fall of one thousand one hundred feet. The dimensions here given indicate that these rapids are second, in power and impressiveness, only to those above the Whirlpool of Niagara.