

rise in the Lower Orinoco. M. Depons, who has in general collected very accurate notions during his stay at Caracas, fixes it at thirteen fathoms. The heights naturally vary according to the breadth of the bed and the number of tributary streams which the principal trunk receives.

The people believe that every five years the Orinoco rises three feet higher than common; but the idea of this cycle does not rest on any precise measures. We know by the testimony of antiquity, that the oscillations of the Nile have been sensibly the same with respect to their height and duration for thousands of years; which is a proof, well worthy of attention, that the mean state of the humidity and the temperature does not vary in that vast basin. Will this constancy in physical phenomena, this equilibrium of the elements, be preserved in the New World also after some ages of cultivation? I think we may reply in the affirmative; for the united efforts of man cannot fail to have an influence on the general causes on which the climate of Guiana depends.

According to the barometric height of San Fernando de Apure, I find from that town to the *Boca de Navios* the slope of the Apure and the Lower Orinoco to be three inches and a quarter to a nautical mile of nine hundred and fifty toises.* We may be surprised at the strength of the current in a slope so little perceptible; but I shall remind the reader on this occasion, that, according to measurements made by order of Mr. Hastings, the Ganges was found, in a course of sixty miles (comprising the windings,) to have also only four inches fall to a mile; that the mean swiftness of this river is, in the seasons of drought, three miles an hour, and in those of rains six or eight miles. The strength of the current, therefore, in the Ganges as in the Orinoco, depends less on the slope of the bed, than on the accumulation of the higher waters, caused by the abundance of the rains, and the number of tributary streams. European colonists have already

the Orinoco, p. 38. *Gumilla*, vol. i, p. 56—59. *Depons*, vol. iii, p. 301. The greatest height of the rise of the Mississippi is, at Natchez, fifty-five English feet. This river (the largest perhaps of the whole temperate zone) is at its maximum from February to May; at its minimum in August and September.—*Ellicott*, *Journal of an Expedition to the Ohio*.

† The Apure itself has a slope of thirteen inches to the mile.