

491 feet below sea level; of lake Michigan, 262 feet; of lake Huron, 168 feet; and of lake Superior, more than 400 feet. Consequently, if these were erosion valleys, they must have been formed at such an altitude that the drainage of the region could have descended to the sea. As collateral evidence of the high elevation, we find that the lower St. Lawrence river and the Gulf are only a deeply submerged river valley, with tributary canyons, having a general depth increasing from 1,200 feet to 1,800 feet, but much deeper at the edge of the continental plateau. Hudson strait, the Gulf of Maine, New York harbor, and other points along the continental margin, reveal great submerged canyons that were once river valleys. Indeed, portions of the continent were once very much higher than now, especially in the south, where the coast and the Antillean region appear to have sunk from one and a half miles to two and a half miles during the Pleistocene period. These changes of level have been in undulations, with the greatest subsidence along the coastal regions, and more particularly in the south than in the north. But this forms a separate and partly written chapter, in which much progress has recently been made. It is sufficient to know that the lake region has stood at a high elevation during most of the time from the Carboniferous to the Pleistocene days, which were followed by changes of level resulting in the present altitude of the land.*

3. *Character of the Lake Basins.* The valley-like character of the lake basins appears to be challenged when the casual observer finds that some of the outlets are mostly obstructed by rocky barriers. This condition gives rise to the hypothesis of the glacial origin of the basins, for the theorist did not stop to compare the course of the basins and the escarpments with the direction of the glacial striae. However one might doubt the correctness of the fluvial hypothesis, the futility of the glacial origin could only be confirmed when the causes of the barriers closing the lakes were discovered, which will

*Previous papers on this subject by the present writer are: "High Continental Elevation preceding the Pleistocene period," *Bulletin Geol. Soc. Am.*, vol. I, 1889, pp. 65-70; "Post-Pleistocene Subsidence versus Glacial Dams," *Id.*, vol. II, 1890, pp. 465-476; "Terrestrial Subsidence southeast of the American Continent," *Id.*, vol. V, 1893, pp. 19-22. Each of these papers is accompanied with a map.