

Nor is the fauna so very meagre as might be supposed. My own collections from Northumberland Strait include about 50 species of mollusks, and some not possessed by me have been found by Mr. Whiteaves. Some of these, it is true, are northern forms, but the majority are of New England species.

The causes of this exceptional condition of things in the Acadian Bay carry us far back in geological time. The area now constituting the Gulf of St. Lawrence seems to have been exempt from the great movements of plication and elevation which produced the hilly and metamorphic ridges of the east coast of America. These all die out and disappear as they approach its southern shore. The tranquil and gradual passage from the Lower to the Upper Silurian ascertained by Billings in the rocks of Anticosti, and unique in North America, furnishes an excellent illustration of this. In the Carboniferous period the Gulf of St. Lawrence was a sea area as now, but with wider limits, and at that time its southern part was much filled up with sandy and muddy detritus, and its margins were invaded by beds and dykes of trappean rocks. In the Triassic age the red sandstones of that period were extensively deposited in the Acadian Bay, and in part have been raised out of the water in Prince Edward Island, while the whole Bay was shallowed and in part cut off from the remainder of the Gulf by the elevation of ridges of Lower Carboniferous rocks across its mouth. In the Post-pliocene period, that which immediately precedes our own modern age, as I have elsewhere shown,* there was great subsidence of this region, accompanied by a cold climate, and boulders of Laurentian rocks were drifted from Labrador and deposited on Prince Edward Island and Nova Scotia, while the southern currents flowing up what is now the Bay of Fundy, drifted stones from the hills of New Brunswick to Prince Edward Island. At this time the Acadian Bay enjoyed no exemption from the general cold, for at Campbelltown, in Prince Edward Island, and at Bathurst in New Brunswick, we find in the clays and gravels the northern shells generally characteristic of the Post-pliocene; though perhaps the lists given by Mr. Matthew for St. John and by Mr. Paisley for the vicinity of Bathurst, may be held to shew some slight mitigation of the Arctic conditions as compared with the typical deposits in the St. Lawrence valley. Since

* Notes on Post-pliocene of Canada, *Canadian Naturalist*, 1872