formations is so slight that a change from one bed to the next higher is not noticeable in the topography and so, though every where structural, the surface is formed by higher and higher beds as the distance from the Pre-Cambrian increases. Away from drainage channels the flatness of the surface produces extensive muskegs which completely hide the solid rock.

Normal erosion had probably pushed the various cliffs back to approximately their present position before the advent of the Glacial period. The effect of the ice movement in this district was principally the removal of disintegrated material, the deposition of moraines, and, through these means. the disorganization of the previous drainage systems. Over part of this particular map-area, a great thickness of lake clays was deposited at one stage of the existence of the great glacial lake Agassiz.

Present Surface of the Pre-Cambrian. The present surface of the Pre-Cambrian area is similar to that found in other Pre-Cambrian areas in the Canadian shield, but in this district the relief is less than in many other areas. From the edge of the Palæozoic escarpment r from the very rare higher elevations of Pre-Cambrian rocks the mammillated surface, dotted with innumerable lakes, may be seen stretching away to an even, unbroken skyline. Few hills o: ges rise more than 50 or 60 feet above the valley bottoms and since the growth is more luxuriant in the valleys than on the thinner soil of the rocky uplands, the forest cover minimizes to the eye even this small difference. The hill slopes are fairly abrupt and although the difference in elevation is small, the country in detail is rough, excepting in large muskeg areas or where, as in the area east of Cranberry lakes, the rock surface has been thickly mantled by lake sediments and glacial deposits, which have to a great extent masked the unevenness of the rock floor. Where the surface is free of glacial debris it is a continuous succession of narrow, steep-sided ridges or knobs, separated by narrow swampy valleys. The basins of the large lakes are directly connected with differences in the rock structure and rate of erosion. The smaller lakes occupy depressions or blocked valleys in the mammillated surface and the streams joining them are merely spill ways from one basin to the next.

The Pre-Palæozoic Surface. The present surface of the Pre-Cambrian, although locally uneven, does not break the even slope that bevels the Palæozoic resting upon it, and the questions naturally arise as to the amount of smoothing that this surface underwent during the bevelling of the Palæozoic formation and ar to the character of the surface upon which the later rocks were deposited. From the levels of the various lakes where Palæozoic and Pre-Cambrian rocks are in contact, it is possible to get an approximate value for the slope of the Pre-Cambrian surface beneath the Palæozoic. The greatest value so