great lakes were made in the same way that these minor valleys were made by the wearing process of glaciers and other agencies on a soft rock. Many of the river valleys also are formed in the same way.

But whence these rocks? When did they come into existence, and how did they come into existence?

These rocks are perhaps about fifty or a hundred millions of years old. They are the first formed rocks on the face of the earth. Their probable age is determined : partly by the time observable to be necessary for the formation of the strata, which are piled on top of one another until they are many thousand feet deep, the formation being accomplished by the wearing of moving rivers, ocean currents, glaciers, etc.; partly by the fact that the fauna and flora of the earth's snrface have passed through numerous cycles of revolution-species, genera and families of animals and plants disappearing altogether from off the face of the earth and again appearing, and this for many times in succession; partly by the time required by the earth to cool down to its present heat by radiation ; partly, proceeding from the known fact that the tides retard the rapidity of the earth's rotation so that it revolves more slowly now than it did a few millions of years ago, it is conceived the age of the crust of the earth cannot be very great, for had it been ten thousand millions of years old the polar flattening would have been much greater owing to the greater centrifugal force at the time when the crust of the earth was formed, when the earth was revolving much faster than now; and had it been less than one hundred millions the polar flattening would not have been so great.

All evidences go to show that the crust of the earth was formed about one hundred millions of years ago; and then the rivers began to flow, and the ocean waves to roll and the clouds to sail across the sky. Previous to this the earth was a heated, fluid, mineral mass that had been gradually formed by the cooling and consequent contraction and consolidation of the original nebula, or chaotic cloud of heated vapor.

This cooling and consequent contraction has been going on ever since, causing the sinking of large sections of the crust of the earth, and probably entering as a factor into the production of mourtains, earthquakes and volcances.

On this primitive crust of the earth with its great age, the first sediments were deposited in deep layers which were destined in time to become transformed into what in Canada are called Laurentian strata. These sediments probably originated in two ways: first, by the forming of precipitates, mineral, calcareous, and otherwise, in the cooling waters on the heated surface of the glebe; second, by the mechanical wearing on the earth's crust of rivers, waves and ocean currents, as they swept about, eating out channels and valleys over the land, levelling down the cliffs on the ocean shores and scattering the loose drift material over the ocean beds.

But how different was the world then from what it is now! Through the slow and silent centuries the universe has been gradually progressing, splitting up first of all into the planetary system, differentiating into individuals and developing along the individual lines.

In this Laurentian Age there was no life upon the face of the earth. In the dark waters of the ocean there floated no fish: the finny tribe of the deep had not yet been born. On the rocks and chiffs, on the hills and the valleys and the plains of this world there grew nc grass, or trees, or flowers. Through the silent centuries of this period all was one vast boundless desert,