

quired to deposit such masses of strata. Unfortunately, by far the largest portion of the primordial group of strata is in the metamorphic state (which we shall directly explain), and consequently the petrifications contained in them—the most ancient and most important of all—have, to a great extent, been destroyed and become unrecognizable. Only in one portion of the Cambrian and Silurian strata have petrifications been preserved in a recognizable condition and in large quantities. The most ancient of all distinctly preserved petrifications has been found in the lowest Laurentian strata (in the Ottawa formation), which I shall afterwards have to speak of as the “Canadian Life’s-dawn” (*Eozoon canadense*).

Although only by far the smaller portion of the primordial or archilithic petrifications are preserved to us in a recognizable condition, still they possess the value of inestimable documents of the most ancient and obscure times of the organic history of the earth. What seems to be shown by them, in the first place, is that during the whole of this immense period there existed only inhabitants of the waters. As yet, at any rate, among all archilithic petrifications, not a single one has been found which can with certainty be regarded as an organism which has lived on land. All the vegetable remains we possess of the primordial period belong to the lowest of all groups of plants, to the class of Tangles or Algæ, living in water. In the warm primæval sea, these constituted the forests of the primordial period, of the richness of which in forms and density we may form an approximate idea from their present descendants, the tangle forests of the Atlantic Sargasso sea. The colossal tangle forests of the archilithic period supplied the place of