

manner great beds of iron-ore exist in the Laurentian ; but in later formations the determining cause of the accumulation of such beds is the partial deoxidation and solution of the peroxide of iron by the agency of organic matter. Besides this, certain forms known as *Eozoon Canadense* have been recognised in the Laurentian limestones, which indicate the presence at least of one of the lower types of marine animals. Where animal life is, we may fairly infer the existence of vegetable life as well, since the plant is the only producer of food for the animal. But we are not left merely to this inference. Great quantities of carbon or charcoal in the form of the substance known as graphite or plumbago exist in the Laurentian. Now, in more recent formations we have deposits of coal and bituminous matter, and we know that these have arisen from the accumulation and slow putrefaction of masses of vegetable matter. Further, in places where igneous action has affected the beds, we find that ordinary coal has been changed into anthracite and graphite, that bituminous shales have been converted into graphitic shales, and that cracks filled with soft bituminous matter have ultimately become changed into veins of graphite. When, therefore, we find in the Laurentian thick beds of graphite and beds of limestone charged with detached grains and crystals of this substance, and graphitic gneisses and schists and veins of graphite traversing the beds, we recognise the same phenomena that are apparent in later formations containing vegetable *débris*.

The carbon thus occurring in the Laurentian is not to be regarded as exceptional or rare, but is widely distributed and of large amount. In Canada more especially the deposits are very considerable.

The graphite of the Laurentian of Canada occurs both in beds and in veins, and in such a manner as to show that its origin and deposition are contemporaneous with