

in a poor state of preservation, the late Mr. Billings was able to distinguish, besides crinoidal remains, a *Zaphrentis*, a *Diphiphyllum*, a *Productus*, and a *Spirifer*, and pronounced the beds to be probably Carboniferous in age.

Rocks belonging to the older series, unconformably underlying the Cretaceous, have now been examined in many additional localities on Vancouver Island, and, while no paleontological facts have been obtained to prove that they are older than those of the section above described, much circumstantial evidence has been collected to show that rocks even much more highly crystalline than those of the above section, and which, judged by standards locally adopted in Eastern America, would be supposed to be of great antiquity, represent approximately, at least the same horizon.

At the south-eastern extremity of the island, in the vicinity of Victoria, a series of rocks occurs which was placed by Mr. Selwyn, in his provisional classification of the rocks of British Columbia, under the title of the *Vancouver Island and Cascade Crystalline Series*.* Dr. Selwyn, in speaking of these, remarks on their lithological similarity to the Huronian rocks, or those of the altered Quebec group of Eastern Canada. A somewhat detailed examination of this series has since been made, and shows it to be built up in great part of dioritic and felspathic materials, which in places become well characterized mica-schists, or even gneisses, while still elsewhere distinctly maintaining the character of volcanic ash-beds and agglomerates. With these are interbedded limestones, and occasionally ordinary blackish argillites. No more certain paleontological evidence of the age of these beds than that afforded by some large crinoidal columns which occur in the limestones has yet been obtained. These, however, suffice to show that they cannot be referred to a pre-Silurian date, and it is highly probable that they are actually a more altered portion of the series represented in the first described section, from which their greatest point of difference is found in the smaller proportionate importance of limestones. They occur in the continuation of the same axis of elevation at no very great distance, and the greater disturbance which they have suffered would serve to account for the higher degree of alteration in materials so susceptible of crystallization as those of volcanic origin.

Elsewhere, in the vicinity of Vancouver Island, rocks holding fossils, which seem to be Carboniferous, and formed in part of volcanic materials, occur; and on Texada Island beds probably of the same age are found, consisting of interstratified limestone or marble, magnetic iron ore, epidotic rock, diorite and serpentine.

* Report of Progress, Geol. Survey of Canada, 1871-2, p. 52.