PAPERS READ BEFORE THE B. C. ACADEMY OF SCIENCE

The Pleistocene Volcanoes of the Coast Range of British Columbia

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D: g the past summer, the writer visited the Mount Garibaldi region, which is situated in the Coast Range of British Columbia, on the east side of the Cheakamous Valley, and about forty miles due north of Vancouver.

The general stratigraphic and physiographic features of the Coast Range may be enumerated as follows:--

1. The range consists of a complex of rocks which include (i) metamorphic sedimentaries and igneous rocks (intrusive and perhaps also extrusive) of palaeozoic age; (ii) the great granite intrusion of the Coast Range batholith (Upper Jurassic) which makes up the main mass of the range; (iii) a set of post-Eocene, probably Miocene andesitic lavas, which lie upon eroded surfaces of the granite and the palaeozoics, overlapping their contact in some places, and (iv) a set of lavas of Pleistocene and post-Pleistocene age.

2. The sculpturing of this mass reveals the fact that it has been subjected to several periods or cycles of erosion during which a fairly constant level was maintained, and erosion progressed, in some cases far, toward peneplanation. These cycles were separated from each other by periods of uplift. The erosion cycles of which evidence remains are as follows:—

(i) A Cretaceous erosion surface on which the basal member of the Eocene deposits of Burrard Inlet may be observed resting. As the intrusion of the granite has been placed in Upper Jurassic times, this may represent the first planation subsequent to that event. The removal of the original batholith roof must therefore have token place in this interval.

(ii) The surface on which rest the post-Eocene lavas in the Garibaldi region. As these lavas cut the Eocene of Stanley Park these old valley floors on which they are found lying round Garibaldi Lake must have undergone erosion for a considerable time after the surface last described. The contact which represents this surface is observable on the sides of Black Tusk Ridge, and on the south-western side of Lake Garibaldi, where it has been sectioned by later valleys.

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