

DISCUSSION.

Aside from their exceptional petrographical composition these volcanics are interesting from other standpoints. They are only one of the few post-Cambrian bodies of igneous rock in the great geosyncline of the Rocky Mountain system in Canada. Igneous rocks, abundant in the more western Cordillera, have been found so rarely in the Rocky mountains of Canada as to excite particular interest. Farther south, in Montana, volcanic rocks, also of alkaline types, occur, intruding strata of late Cretaceous age¹.

In the Ice River district, British Columbia, are found ultra alkalic igneous types also, here consisting of a complex of plutonic rocks in the form of an asymmetrical laccolith.² The age of this intrusion is placed as post-Cretaceous, on structural and correlation evidence.

These instances of plutonic and hypabyssal rocks of post-Cretaceous date, of similar highly alkaline types, are significant when correlated with the mid-Cretaceous Crowsnest alkaline volcanics.

In the well known "Petrographic Province of Central Montana" described by Pirsson,³ the rocks are characterized by equal amounts of soda and potash in the most siliceous types, with potash increasing in the less siliceous types. Although only one analysis of the Alberta rocks is available, the petrography leaves no question that soda in this area greatly dominates over the potash. As the Crowsnest volcanics form only a single occurrence in a localized area, they cannot be considered as forming a petrographic province by themselves. Taken in connexion with the numerous other alkaline occurrences in the Rocky mountains of the United States, many of which are referred to in Pirsson's paper,⁴ they serve to extend the alkalic

¹Pirsson, L. V. Bull. U. S. Geol. Survey No. 237, p. 199, and map, p. 20.

²Allan, J. A. Geology of the Ice River district, B. C.: Abstract of a thesis presented to the faculty of the Massachusetts Institute of Technology in partial fulfilment of the requirements for the degree of Doctor of Philosophy, 1912, p. 4, etc.

³Pirsson, L. V. American Journal of Science, 4th ser., vol. 20, 1905, pp. 35-49.

⁴Loc. cit. p. 36.