

THE  
CANADIAN RECORD  
OF SCIENCE.

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VOL. IX.

OCTOBER, 1904.

No. 5.

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ANALCITE-TRACHYTE TUFFS AND BRECCIAS FROM  
SOUTH WEST ALBERTA, CANADA.\*

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(INTRODUCTION.)

In this paper are described a series of tuffs and breccias found in the south west corner of Alberta, Canada, some five miles west of the Livingstone Range. They have been carefully mapped in townships 7, 8, 9 and 10, ranges 3, 4 and 5 west of the fifth meridian. Roughly speaking, the district lies about twelve miles east of the eastern boundary of British Columbia and some fifty miles north of the international boundary. Their existence here has been known since the early eighties when G. M. Dawson of the Canadian Geological Survey referred to them in his report on the Rocky mountains.<sup>1</sup>

The occurrence of analcite ( $\text{Na}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{SiO}_2 \cdot 2\text{H}_2\text{O}$ ) in these pyroclastic rocks makes an interesting study. Its presence has not been previously noted by other writers. No microscopic or chemical descriptions of the rocks have been written. The mineral has lately attracted much attention as regards its origin in igneous rocks; and its formula, which may be written in various ways, especially as regards the interpretation of its one molecule of water,<sup>2</sup> is still uncertain. Its mode of occurrence in south west Alberta is unique. So far as the writer

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1. Report on the Rocky mountains between lats.  $47^\circ$  and  $51^\circ 30'$ . Report of Can. Geo. Sur. 1886.

2. Bull. 207, U.S. Geo. Sur. p. 8. Clarke and Steiger, 1902.