lenticular nature. Ellipsoidal lavas (pillow lavas) or amygdaloids have not been recognized. Indeed, lava flows or injected volcanic rocks are of very exceptional occurrence. The late W. W. Leach in a personal communication stated that he had seen evidences of small flows a short distance north of the town of Coleman, and also on Ma butte, northeast of Crowsnest mountain.

Thickness and Volume.

The maximum thickness of the volcanics seen by the writer is about 1000 feet. Leach[1] gives the thickness west of Coleman as 1150 feet, and states that "it appears that the volcanics reach their greatest thickness about two miles east of Crowsnest mountain, thinning out rapidly to the eastward." This maximum observed thickness occurs in the westernmost band of tuffs that are exposed. West of this band, the rocks are of the overlying Benton and Allison formations until the great overthrust bringing up the Palæozoic measures on top of the Cretaceous is reached. There is no good reason for supposing that the former areal extent of the volcanics was not greater in a westerly direction, and that they are not now concealed on account of the overthrusting. It is possible that the greatest observed thickness of 1150 feet is not the true maximum for the tuffs, and they may have been thicker to the westward. The horizon of these rocks is not exposed in the Crowsnest basin to the west, so definite data is lacking as to their extension in that direction. However, it is the writer's opinion, and with this statement Mr. Leach agreed, that the former extension was not over ten miles west of Crowsnest mountain, and that their maximum thickness is not far from that observed. In any event, they show a constant decrease in thickness from the vicinity of Crowsnest mountain towards the north, south, and more rapidly, towards the east.

The total present areal extent of the volcanics as represented on Dawson's map of the Rocky mountains,[2] and on Leach's

[1]Leach, W. W. Summ. Rept. Geol. Survey, Canada, 1911, p. 197.
[2]Accompanying Part B, Ann. Rept. Geol. Survey, Canada, 1885.