

welder¹ discusses the stratigraphy and structure in the Ogden Canyon region, correlating the shales immediately above the quartzite with the "Middle Cambrian [portion of the] Pioche."

The Langston limestone² is not present in the measured section, and while *Olenellus* was not secured from the layers immediately above the quartzite the succession appears to correspond more closely with that in the Big Cottonwood Canyon section less than 50 miles to the south than in the Bear River range to the northeast.

Utah, Wasatch Mountains, Wasatch Canyon.—At the mouth of the first small canyon south of Wasatch canyon, 5 miles north of Brigham, Utah, the Spence shale is well developed and the succession is in every way comparable with that in the Bear River range (Mill canyon) to the northeast.

Utah, Blacksmith Fork.—The basal quartzite series has an exposed thickness of 1,000 or more feet without observed unconformity, and grades upward into a series of massive limestones to which the name Langston has been applied.³ The line between the Langston and the underlying Brigham is here drawn 500 feet down in this gradational series, while at Malade and on Mill creek in the Bear River range, Idaho, localities within 45 miles of the section in Blacksmith Fork, the Langston is very thin, sharply set off from the underlying quartzite, and crowded with fossils referable to the Middle Cambrian. In the Blacksmith Fork section no fossils were found in the Brigham quartzite, but that formation, in the Mill Canyon section, has yielded fossils upon whose basis the Brigham quartzite has been referred, at least in part, to the Middle Cambrian.³

Idaho, Bear River Range, Mill Canyon Section.—The sedimentation in the Mill Canyon section of the Bear River range is closely comparable with that at Blacksmith Fork in the southern portion of the same range, see above. The Middle Cambrian Brigham quartzite is clearly to be distinguished from the overlying Langston limestone, however, and the latter formation is here only 25 or more feet thick and abundantly fossiliferous. As in the Blacksmith Fork section it is conformably overlain

¹ Bull. Geol. Soc. America, vol. 21, 1910, pp. 526 and 534-539.

² Walcott: Smithsonian Misc. Coll., vol. 53, No. 5, 1908, p. 198.

³ Mon. U. S. Geol. Survey, vol. LI, 1912, p. 153.