

strata is from 12,000 to 15,000 feet. Taking four miles as the length of the base line from the outer edge of the anticlinal to the centre or axis, and the angle as 35° at which the strata at this extreme eastern margin of the fold dip east, the length of the vertical is 12,000 feet, showing a great area of denudation of at least 4,500 feet. Much of this detrital material is piled along the eastern flanks at the mouth of the gulch on the already denuded strata, which denudation preceded the glacial period. As to the exact age of the rocks, I am as yet in doubt. The evidence I have obtained is as follows: One hundred miles east of this point the lower Cambrian quartzitic series is found, consisting of heavily bedded greyish quartzites, pinkish-red quartzites, and red argillites and sandstones. In the interval a great anticlinal of more than one fold is observed. The rocks are greyish-black slates, quartzites, shales, etc. The margin of the Cambrian ocean extended apparently then along the eastern flank of the Bitter Root Range, a series of Huronian slate-schists being largely denuded, which is a bedded quartz porphyry and gneiss with distinct granitic areas, the whole coeval with Pilot Knob of South Eastern Missouri, north westerly along 114° to Tobacco Plains at the 49th parallel and thence into British Columbia. In the Correlation of the Cambrian series by Walcott, it will be seen on page 323, that he says "the Cambrian rocks of Montana are restricted to the southern portion of the strata." This is undoubtedly an error since I have examined them south of the boundary and still farther south of this in the vicinity of Missoula, ripple marks, cross-bedding, and all the evidences abound of marginal shallows and shore lines. This peculiar series of rocks I have not observed west of this. Selwyn notes² a series of graphitic slates and shales in which no fossils were found in British Columbia. He is inclined to call them Cambro-Silurian (ordovician). Dawson³ says, "Granites and crystalline schists of great age are abundant in the Gold

² See Mineral Wealth of British Columbia, p. 63.

³ Dawson Mineral Wealth of British Columbia, p. 8.