

quartzites, and may prove, in the western part of the range, to pass down into Silurian or Cambro-Silurian. Triassic or Permo-Triassic red sandstones appear in some places near the forty-ninth parallel.

In the earliest Cretaceous times, this portion of the Rocky Mountains appears to have been an area of subsidence in which several thousand feet of shales and sandstones were deposited. These contain a characteristic early Cretaceous or Cretaceo-Jurassic flora and have been named the *Kootanie Series*. The conditions at this time appear to have been different from those obtaining in the Western States, as the equivalents of these oldest Cretaceous beds have not there been detected. Deposition, accompanied by some evidence of denudation of the older rocks, continued, over the greater part of the area, till the close of the Cretaceous, and the still later beds of the Laramie are yet found in a few places in the mountains. Throughout the whole of these periods, no evidence of great disturbance is found, and the region was not a mountainous one. For the next ensuing period, however, no representative strata are met with, and it is to this time, coeval with the earliest Tertiary, that the profound changes producing this mountain system are due. The beds were then thrown into a series of parallel folds trending north-north-west by south-south-east, and these, by a continuance of pressure from the west, were closely pressed together, and in many cases—particularly on the eastern side—completely overturned eastward. The subsequent action of denudation on the higher and more ample folds of this corrugated area has almost completely removed from them the whole of the Mesozoic rocks, while along the eastern margin of the disturbed region, in which the folding has been in many places scarcely less severe, the newer rocks still form the actual surface. This eastern belt, with an average width of about fifty miles, forms the foot-hills; while the western portion, with a width of about fifty miles, constitutes the mountains proper, the rugged character of which is almost as much due to the nature of the older rocks there brought to the surface as to its superior elevation.