

siderable earth movements had occurred between the two, implying lapse of time.

Next we have the Huronian of Logan, a series much less crystalline and more fragmentary, and affording more evidence of land elevation and atmospheric and aqueous erosion than any of the others. It has great conglomerates, some of them made up of rounded pebbles of Laurentian rocks, and others of quartz pebbles, which must have been the remains of rocks subjected to very perfect erosion. The pure quartz-rocks tell the same tale, while limestones and slates speak also of chemical separation of the materials of older rocks. The Taconian evidently tells of movements in the previous Laurentian, and changes in its texture so great, that the former may be regarded as a comparatively modern rock, though vastly older than any part of the Palaeozoic series.

Still later than the Huronian, is the great Micaceous series, called by Hunt the Mont Alban or White mountain group, and the Taconian or Lower Taconic of Emmons, which recalls in some measure the conditions of the Huronian. The precise relations of these to the later formations and to certain doubtful deposits around Lake Superior, can scarcely be said to be settled, though it would seem that they are all older than the fossiliferous Cambrian rocks, which practically constitute the base of the Palaeozoic. I have, I may say, satisfied myself, in regions which I have studied, of the existence and order of these rocks as successive formations, though I would not dogmatize as to the precise relations of those last mentioned, or as to the precise age of some disputed formations which may either be of the age of the older Eozoic formations or may be peculiar kinds of Palaeozoic rocks moulded by metamorphism. Probably neither of the extreme views now agitated is absolutely correct.

After what has been said, you will perhaps not be astonished that a great geological battle rages over the old crystalline rocks. By some geologists they are almost entirely explained away or referred to igneous action or to the alteration of ordinary sediments. Under the treatment of another school, they grow to great series of Pre-Cambrian rocks, constituting vast systems of formations, distinguishable from each other, not by fossils, but by differences of mineral character. I have already indicated the manner in which I believe the dispute will ultimately be settled,