

of personal comfort which can only be understood by those who have had to traverse those rugged forest regions. He often wandered for days through a wilderness, with a prismatic compass in hand, counting his paces, and gathering rock-specimens as he went. His notes, made in pencil, were always written out each night in ink, and the journeyings of the day protracted, often by the light of the camp-fire.

In the intervals of these investigations, Logan was devoting his attention to another region of crystalline rocks, the extension of the Green Mountains of Vermont through western Canada to a point a little south-east of Quebec, the study of which he began in 1847. The previous attempts to establish a parallelism between the geological succession in eastern New York and western New England had led most American geologists to suppose that the crystalline schists of the latter region were the stratigraphical equivalents of the lower members of the New York Paleozoic series in an altered condition; though there were not wanting those who, with Emmons, regarded these crystalline strata as a part of the primary or so-called Azoic series. Logan, who began, as was his custom, to work out the stratigraphy of these rocks in minute detail, accepted the views of the majority on this disputed question, and endeavored to establish a parallelism between the subdivisions of these crystalline strata of the Green Mountains and their prolongation into Canada, and the uncrystalline fossiliferous strata which are found everywhere along their north-western base from the valley of Lake Champlain. These, the so-called Upper Taconic of Emmons, he at first looked upon as newer than the Trenton limestone, but, yielding to the evidence of organic remains, assigned them at length to their true position immediately below the horizon of this limestone, and named them the Quebec group. These uncrystalline strata were really newer rocks than the crystallines (of which they include fragments), Logan was unwilling to admit, and spent many years in an unsuccessful attempt to establish a correspondence between the two series. That these latter rocks, called by him the "altered Quebec group," belong to the same Huronian series which he was the first to distinguish farther to the westward as of pre-paleozoic age, will now be questioned by none who have compared the two regions.

The record of Logan's later life is little else than that of his patient and unwearying devotion to the work of the geological survey of Canada, of which he remained the director for twenty-five years. In 1863, he prepared and published, with the aid of Professor James Hall, a geological map of north-eastern America, including the region north to