

easterly, nearly parallel with the Appalachians. But at the north, in Ohio, it extends northwesterly, and has also a northeastern branch in the direction of Findlay, Ohio, toward Lake Erie. That this was the time of the uplift is proved by the absence of Upper Silurian and Lower Devonian beds over the region, these formations thinning out toward the axis, where the Cincinnati limestone is the surface rock; and, in Tennessee, as Safford states, by the Devonian black slate *resting directly* on the Lower Silurian beds. The line of the axis presents now no conspicuous topographical feature; but the direction of the draining streams, which follow the strike of the strata on either side, indicates that it once formed a watershed that gave the initial bearing to their flow. The part of the arch about Cincinnati has been more deeply and extensively removed than farther north, though higher now than elsewhere, and, therefore, "this probably was originally the highest part of the arch within the limits of the state of Ohio."

According to R. Bell, of the Canada survey, the geanticline is continued northward across the west end of Lake Ontario to Lambton, in Ontario, Canada, and perhaps beneath Lake Huron, but its emergence to this distance is not proved. This range of broad islands and shallows had great influence on the rock-making of later Paleozoic time—a view first recognized by James Hall in 1859 (*Pal. N. Y.*, iii.).

Upturnings in Nova Scotia and New Brunswick.—Unconformability between the Upper Silurian and Lower Silurian rocks has been observed in Carleton County, N.B., just north of the boundary near Metapedia Lake, and also on Lake Temiscouata, and elsewhere (L. W. Bailey); and in Nova Scotia at Cape St. George, Arisaig, Lochaber, and from Kerrowgane down the East River of Picton, and north of Sunderland Lake.

But through this epoch there was comparative quiet north of Gaspé in the northern part of the St. Lawrence Gulf; for the great limestone formation of Anticosti, which was begun in the Lower Silurian era, continued its unbroken progress through the whole prolonged era of revolution, and afterwards far into the Upper Silurian era.

EUROPEAN.

In America the disturbances closing the Lower Silurian were confined to regions of very thick depositions, and mountain-making was the final result of the upturning. Over central New York and farther west in the Continental Interior, the beds of the Lower and Upper Silurian eras follow one another without any marked unconformability. Cases of intervening erosion may be found; for every period loses by erosion a large part of its depositions in the supply of material for the beds of the following period; but no case occurs of horizontal deposition on upturned Lower Silurian strata.

In Europe the facts are similar. Over the Continental Interior of Europe, which includes all European Russia up to the Archæan mountains on either side, and the surface south to the foot hills of the Alps, the Upper Silurian beds lie conformably on the Lower Silurian. The cases of unconformability