1897] ELLS-RECENT CONCLUSIONS IN QUEBEC GEOLOGY. 175

other lower Cambrian fossils. In point of time the Levis beds may be regarded as the equivalents of the Calciferous of the Ottawa Basin, while the lower portion or upper Sillery may be taken as the equivalent of the Potsdam sandstone.

The rocks of Quebec City and the Citadel Hill are somewhat higher in the scale than those of the Levis shore opposite. They were at first regarded as of Levis age and lower in position than the Sillery. Subsequently they were held to represent the Hudson River and Utica divisions, but a careful study of the fossil contents, as well as of the stratigraphical relations as shewn in other portions of the field, where the similar rocks appear, shews this peculiar development of strata to belong largely to the lower division of the Trenton and not far from what is designated the Black River division. The equivalence of the areas in the vicinity of Quebec to those seen in the Phillipsburg section has also been very clearly established, and the rocks of the latter are found to range upward from the base of the Calciferous to the top of the Chazy formation. Thence eastward the ascending sequence can be traced upward into the black slates and limestones of Farnham which are apparently the equivalents of those of Quebec city, but which were at one time described as a part of the Potsdam formation.

The great areas of upper Silurian, once depicted on the map of the province of Quebec, have in large part been removed. These were supposed to occupy the greater portion of the province, east of the Sutton mountain range; and their Silurian horizon was maintained from the presence of a number of areas of these fossiliferous rocks found at various places in this district. The detailed study of this field shewed conclusively that these Silurian areas were detached outliers, sometimes of very limited extent, in places infolded with the underlying Cambro-Silurian sediments. The age of the latter was established by the finding of characteristic fossils, such as graptolites and trilobites at a number of points. It can therefore be safely asserted that by far the greater part of the area east of the Sutton Mountain anticlinal is occupied by strata of Cambro Silurian and Cambrian age and that the upper Silurian and Devonian portions are very limited in extent.

The question of the age of the mountain masses of diabase and syenite so conspicuously displayed in the area east of the St. Lawrence, has also been a somewhat difficult one to decide. In places the associated rocks have been so altered as to present the