Doubt has, however, been cast on these in a recent paper by Dr. Rauff, of Bonn. It is not improbable that the Huronian may admit of sub-division into two members; and, if its deep sea limestones could be found, perhaps into three. It underlies the Etcheminian unconformably, and, so far as known, is itself unconformable to the Laurentian, which must have been subjected to some disturbance and to much intrusion of igneous matter, as well as to great denudation, before and during the Huronian period.

Next in descending order is the Upper Laurentian, or *Grenvillian* system (the upper part of Logan's Lower Laurentian), which is well developed in the St. Lawrence and Ottawa Valley and also in New Brunswick, as well as in the Adirondacks and the eastern slope of the Apalachians. It contains various gneissose and schistoze rocks, which, though crystalline, show, on analysis, the same composition with Palæozoic slates,[1] and it includes also bands of quartzite and of graphite and graphitic schist, as well as large beds of magnetite. Above all, it is remarkable for the occurrence of great zones or belts of limestone, associated with what seem to be altered sedimentary beds, and is in many places rich in graphite and in apatite. It is scarcely possible to doubt that in this great system of several thousands of feet in thickness we have evidence of tranquil oceanic deposition and of abundant animal and vegetable life. It, no doubt, also occupies great areas covered by later deposits, while there is evidence that the portions exposed have undergone enormous denudation.

The graphite of this system has yielded no distinct structures, except imperfectly preserved fibres; but in some places it assumes the form of long ribbon-like bands, suggestive of fronds of algæ, and an American palæontologist, Mr. Britton, has described one of these forms from

[1] Adams—Am. Journal of Science, July, 1895.