

In Fig. 54 the position of the Silurian and Devonian rocks is shown as they occur in the Western part of New York. The Huronian group is wanting, as well as several of the other subdivisions, upon this section. It is very rare to find all the members of the series at one locality. For example, the Onondaga salt group is found only in Western New York and in British America. Elsewhere the Lower Helderberg limestone may succeed directly to the Niagara group.

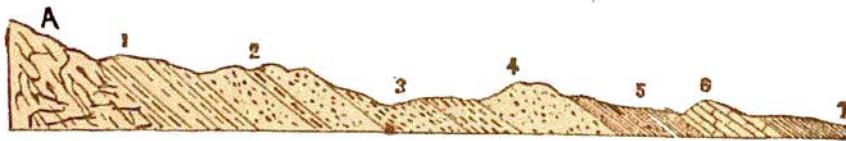
1. *Lower Silurian*.—The *Potsdam sandstone* is a purely silicious sandstone. The *Calceiferous sandrock* is a calcareous sandstone or an impure limestone; sometimes magnesian. The *Chazy and Trenton limestones* are black fossiliferous limestones. The *Utica slate* is a black shaly limestone. The *Lower Hudson river group* is mostly clay slate; but in the Western States its place is occupied by limestone; the upper part of the so called *cliff limestone*. Sometimes there is an unconformability between the Lower and Upper Silurian, as in England, and at the mouth of the St. Lawrence river in this country.

2. *Upper Silurian*.—The *Oneida conglomerate* is usually purely silicious, but passes insensibly into calcareous sandstone or dolomitic limestone in some districts. The *Medina sandstone* is a red sandstone, or shale. The *Upper Hudson river group* is partly clay slate, and partly talcose schist, with occasional beds of limestone. It has as yet been found only in Western New England or Eastern New York. The *Clinton group* is an alternation of shales, limestones, and iron ores or iron sandstones. The *Anticosti group* is an assemblage of argillaceous limestones occurring upon the island Anticosti in the Gulf of the St. Lawrence. It is probably equivalent to the formations between the Lower Hudson river group and the Clinton group.

The *Niagara group* is an alternation of limestones and shales; and sometimes the shales are wanting. The *Onondaga salt group* is an alternation of limestones and shales, the limestones predominating, from which issue salt springs. The *Lower Helderberg limestone* is a highly fossiliferous dark colored limestone, and is very persistent, while the previous member is most usually wanting.

The European members of the Silurian System are likewise composed of sandstones, limestones, and shales. The following figure represents the general order of these groups in Europe, with their names.

Fig. 55.



A. Hypozoic rocks.

Lower Silurian.

1. *Lingula and Llandeilo flags,*
2. *Caradoc sandstone,*

Upper Silurian.

3. *Wenlock shale,*
4. *Wenlock limestone,*
5. *Lower Ludlow shale,*
6. *Aymestry limestone,*
7. *Upper Ludlow shale.*

The Silurian rocks occupy large areas in Belgium, Germany, Scandinavia, and Russia, as well as in North and South America.

There has been much discussion among English geologists as to the limits of the Cambrian and Silurian series. Murchison regards them both as Silurian. Sedgwick divides the Cambrian into Lower, Middle, and Upper, and his Upper Cambrian is the same as what we have called Lower Silurian. The government surveyors of England have compromised these views, and describe these series as Cambrian, (Lower and Middle of Sedgwick), Lower or Cambro-Silurian, and Upper Silurian.