

The Ural Mountains include long ranges of upturned and more or less crystalline Lower Silurian rocks, but it remains undetermined whether or not there is unconformability with the Upper Silurian beds.

Of the 204 species of fossils in 68 genera, found in the Lower Llandovery beds, 104 species in 45 genera still exist in the Upper Llandovery. (Etheridge.)

NEOPALEOZOIC SECTION.

In contrast with the EOPALEOZOIC part of geological history, when vast continental seas prevailed, — a condition well styled *thalassic*,¹ both as regards geography and life, — the NEOPALEOZOIC was the time of the increasing emergence of the land over large areas, and the emergence also of life in various forms, until in eastern North America a great semi-continent existed, over 1000 miles wide, which was covered with grand forests and other vegetation, and populated by Amphibians and Reptiles of ancient kinds, and by the largest of Insects, besides other inferior terrestrial Invertebrates.

UPPER SILURIAN ERA.

SYNONYMY. — Upper Silurian, Murchison, *Phil. Mag.*, vii., July, 1835; *Rep. Brit. Assoc.*, Aug., 1835; *Silur. System*, 1838. Upper part of Silurian, Sedgwick, *Rep. Brit. Assoc.*, 1835; *Proc. G. Soc.*, 1838; *Q. J. G. Soc.*, Jan., 1846. Silurian, Sedgwick, *Q. J. G. Soc.*, 147, 1852 (the Lower Silurian being made Upper Cambrian); Lapworth, *G. Mag.*, 1879, p. 13; H. B. Woodward, *Geol. Eng. and Wales*, 1887. Murchisonian, D'Orbigny, *Pal. et Géol.*, ii., 301, 1851. Bohémien, A. de Lapparent, *Tr. de Géol.*, 1883.

NORTH AMERICAN.

SUBDIVISIONS.

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| 3. Lower Helderberg Period. | { | 3. Upper Pentamerus epoch. |
| | | 2. Shaly limestone epoch. |
| | | 1. Lower Pentamerus epoch. |
| 2. Onondaga Period. | — | Salina beds, Water-lime, Tentaculite limestone. |
| 1. Niagara Period. | { | 3. Niagara epoch. Shale and limestone. |
| | | 2. Clinton epoch. Clinton group. |
| | | 1. Medina epoch. Oneida and Medina beds. |

The map on page 536 (Fig. 737) presents a general idea of the dry land of North America at the opening of the Upper Silurian. The shore line of the time was not far outside of the Archæan limits (indicated by the dotted line), showing that the growth of the continent had been mainly along its Archæan borders. There was an extension of the land over the

¹ With Homer, the *Θάλασσα* was the great Interior Continental Sea, the Mediterranean, while the outside waters around the land were called *Ἰκεανός*. The term *thalassic* is used above in the Homeric sense.