

upon crystalline schists. The Primal division was regarded by the Messrs. Rogers as the equivalent both of the Potsdam and the still lower members of the Cambrian.

*Auroral*, (II.) This division, which, with the last, includes the first fauna, consists in great part of magnesian limestones, and corresponds to the Calceiferous and Chazy formations. Its thickness in Pennsylvania varies from 2500 to 5000 feet, and with the preceeding division, it includes the first fauna. The representatives of the Primal and Auroral divisions attain a great development in eastern Tennessee, where they have been studied by Safford.

*Matinal*, (III.) In this, which represents the second fauna, were comprised the limestones of the Trenton group, together with the Utica and Hudson-River shales.

*Levant*, (IV.) This division corresponds to the Oneida and Medina conglomerates and sandstones.

*Surgent*, *Scalent* and *Pre-Meridional* (V. VI.) In these divisions were included the representatives of the Clinton, Niagara and Lower Helderberg groups of New York, making, with division IV., the third fauna.

The parallelism of these divisions with the British rocks was most clearly and correctly pointed out by H. D. Rogers himself, in an explanation prepared, as I am informed, with the collaboration of Prof. William B. Rogers, and published in 1856, with a geological map of North America by the former, in the second edition of Keith Johnson's Physical Atlas. The paleozoic rocks of North America are there divided into several groups, of which the first, including the Primal, Auroral and Matinal, is declared to be the near representative of "the European paleozoic deposits from the first-formed fossiliferous beds to the close of the Bala group; that is to say the proximate representatives of the Cambrian of Sedgwick." A second group embraces the Levant, Surgent, Scalent and Pre-Meridional. These are said to be "the very near representatives of the true European Silurian, regarding this series as commencing with the May-Hill sandstone." The Levant division is farther declared to be the equivalent of the sandstone just named; while the Matinal is made to correspond to the Llandeilo, Bala or Upper Cambrian; the Auroral with the Festiniog or Middle Cambrian; and the Primal with the Lingula flags, the Obolus sandstone of Russia and the Primordial of Bohemia.