

retained for the Lower Silurian of Murchison; and the term *Silurian System* be limited to the Wenlock and Ludlow groups. Marcou justly pointed out that all the fossils ascribed by Sedgwick and M'Coy as characteristic of Sedgwick's Upper Cambrian (Bala) series were Lower Silurian fossils, whereas distinctive fossil-types had been found by Emmons in the "Taconic System," hence the latter term ought to be applied generally to primordial rocks containing that fauna. But Barrande had observed in 1851 in the British Survey Collection a fossil Trilobite of primordial age, and Salter afterwards discovered the localities in Wales whence certain pre-Silurian fossils were derived. The "Lingula" flags and shales of St. David's proved richly fossiliferous, and after these had been described by Salter and Hicks (1868), there could no longer be any question that there existed a distinctive fauna in Sedgwick's original "Cambrian Series."

It is largely due to Lyell's example that the name of "Cambrian" was retained in the text-books, at first usually as a sub-division of the Silurian system, but finally as a system of equal rank with the Silurian.

The Cambridge School continued until recently to teach, in accordance with Sedgwick's views, that the limit between the Cambrian and Silurian systems was above the Bala beds. Lyell, in his *Elements of Geology*, limited the Cambrian system to the lower and middle members of Sedgwick's system, beginning with the Longmynd strata and ascending to the Tremadoc slates; and in 1888, at the International Congress in London, this limit was sanctioned and has since been almost universally adopted.

In the year 1879, Lapworth proposed the designation *Ordovician* for the complex of strata which had been variously termed Lower Silurian or Upper Cambrian. Lapworth's detailed research and intimate knowledge of the group led him to the opinion that it should be ranked as an independent system, as it was distinguished from the rocks above and below, not only by the occurrence of distinct fossil types but likewise by the intercalation of lavas, tuffs, and ashes amidst its sedimentary series. The Ordovician system has been subdivided by Lapworth upon palæontological grounds into a Lower Ordovician or Arenig series, a Middle Ordovician or Llandeilo series, and an Upper Ordovician or Bala series.

A renewed investigation of Emmons' district in the United