

part older than the greywacke beds. In the year 1836, Murchison and Sedgwick proved that the shales belong to the Carboniferous formation and repose upon the true greywacke series with interbedded conglomerates, shales, and fossiliferous limestone. The whole complex of strata is so strongly compressed and folded, and the rocks show such striking metamorphic features, that Murchison and Sedgwick both were of opinion they must be of Cambrian age. But Lonsdale, to whom the fossils were entrusted for examination in 1837, expressed his conviction that the Killas greywacke complex must be younger than the Silurian system and older than the Carboniferous system. Although at first a little incredulous, after a careful revision of their sections, the two geologists accepted Lonsdale's conclusion, and together wrote a large memoir (1839) on the newly-identified system of strata, which they termed the "Devonian," between the upper Silurian and lower Carboniferous. In addition to the greywacke series in Devon and Cornwall, they assigned to the Devonian system the Old Red Sandstone in Scotland, whose distribution, thickness, divisions, and fossils had been the subject of their earlier memoir published in 1828.

Many doubts were cast upon the independence of this new system, and Murchison and Sedgwick resolved to test their results by means of comparative researches in the Continental districts where the Wernerian "Transitional Series" had been chiefly studied. The two friends travelled in the summer of 1839 through the Rhine district, Westphalia, the Harz, Nassau, Thuringia, the Fichtel mountains; in the companionship of De Verneuil, they also travelled in Belgium and the neighbourhood of Boulogne. In 1842, Murchison and Sedgwick published a memoir in which they tried to show that a great portion of the shales and limestones, as well as the sandstones, greywackes, and conglomerates exposed in the Rhineland belonged to the Devonian and Silurian system, and that in the Fichtel mountains Devonian deposits were present, but no Silurian. These results were partially erroneous with regard to the Silurian division, since the whole of the lower greywacke series in the Rhine district was said to be Silurian, and the Silurian deposits in the Fichtel mountains were entirely overlooked. Still, the investigations of the two British geologists proved incontestably that there lay between the Carboniferous system and the