

proposed by Sedgwick in 1836 for these older members, and this term was accepted by Murchison.

In the year 1839 Murchison published his great work *The Silurian System*, wherein the results of his researches extending over six years were admirably elucidated. After a short statement regarding the younger geological formations, and a more detailed account of the English Carboniferous formation, the Mountain Limestone, and the Old Red Sandstone, Murchison passes to the special description of the Silurian system in South Wales and the adjoining counties of England. With great accuracy he depicts the stratigraphical relations, the lithological characters of the rocks, the contents of fossils and minerals, and the occurrences of volcanic rocks. A special palæontological part with twenty-seven quarto plates is devoted to the description of the characteristic fossils by L. Agassiz, Sowerby, and Lonsdale. Numerous coloured sections help to demonstrate the tectonic relations of the district.

Murchison distinguishes three chief divisions in the Silurian system—

Upper Silurian, comprising the Ludlow Rocks and Wenlock Limestone.

Lower Silurian, comprising the Caradoc Sandstone and Llandeilo Flags.

Cambrian.

Murchison found it impossible at the time to fix a definite palæontological horizon as the lower limit of the Silurian system, and Sedgwick also could not assign any palæontological or other feature which would determine the upper limit of the Cambrian series. Nevertheless, the recognition of the Silurian and Cambrian systems was one of the most important advances that have been made in stratigraphy.

There still remained, however, a thick group of strata in the Wernerian "Transitional Series" which could not be allotted to either of the newly-defined systems. De la Beche had worked with unrelaxing energy for several years at the geological investigation of Devonshire and Cornwall, and in 1839 had reproduced his results on an excellent geological map of this district. He had separated a series of plant-bearing shales from the true greywacke strata (Killas Greywacke) and applied to them the name Carbonaceous series (now "Culm Shales"), but he thought the latter was in