

established by Murchison,²⁵ who, with Nicol as his earlier colleague, showed that an ancient gneiss is unconformably overlain with a thick mass of dull red sandstones above which lie (also unconformably, as was eventually discovered) quartzites and limestones containing fossils which he referred to the Lower Silurian system. He regarded the red sandstones as probably Cambrian, and after proposing the terms Fundamental and Lewisian for this underlying gneiss, he finally adopted instead of them the term Laurentian, believing that the rocks so designated by him in this country were equivalents of those which had been studied and described by his friend Logan in Canada.²⁶ More recently the officers of the Geological Survey have discovered the *Olenellus*-zone in strata intermediate between the quartzites and the limestones.²⁷ These formations are thus shown to be of Cambrian age. The base of the Cambrian series in the northwest of Scotland lies at the bottom of the quartzite which reposes with a strong unconformability, sometimes on the red sandstones, sometimes on the gneiss. Hence these last two distinct groups of rock are now definitely proved to be pre-Cambrian. As they differ so strongly from each other their respective limits can be easily followed, and as they extend over a united area of hundreds of square miles in the northwest of Scotland they afford abundant opportunities for the most detailed examination. The rocks of this region may be arranged in descending order as in the table on the following page:

²⁵ Brit. Assoc. 1855, Sect. p. 85; 1857, Sect. p. 82; 1858, Sect. p. 94; Quart. Journ. Geol. Soc. xiv. 1858, p. 501; xv. 1859, p. 353; xvi. 1860, p. 215; xvii. 1861, p. 171. Nicol, Quart. Journ. Geol. Soc. xiii. 1857, p. 17; xvii. 1861, p. 85; Brit. Assoc. 1858, Sect. p. 96; 1859, Sect. p. 119.

²⁶ In the elucidation of the true relations of the rocks to each other in the N.W. of Scotland later geologists have taken part, more especially Dr. Hicks, Prof. Bonney, Mr. Hudleston, Dr. Callaway, and above all, Prof. Lapworth and the officers of the Geological Survey. The literature of the subject, up to 1888, will be found condensed in the Report by the Geological Survey, in Quart. Journ. Geol. Soc. vol. xlv. 1888, p. 378. The more important announcements since that date will be referred to in the sequel.

²⁷ Brit. Assoc. 1891, Sect. p. 633. Peach and Horne, Quart. Journ. Geol. Soc. xlviii. 1892, p. 227.