rieues, and the interposed Llandeilo flags are of sandstone and shale, with trilobites and graptolites.\*

Cambrian Volcanic Rocks.—In a former chapter (Ch. XXVII. p. 447), we have seen that below the Llandeilo and Bala beds of Lower Silurian date there occur, in North Wales, a series of rocks of vast thickness, which may be called Cambrian. The upper subdivision, named by Professor Sedgwick the "Festiniog group," comprises, first, the Arenig Slates, 7000 feet thick in North Wales, in the midst of which dense masses of porphyry, trap-conglomerate, and other igneous rocks, which are supposed by Professor Sedgwick to be of contemporaneous origin, are intercalated ; secondly, the Lingula flags underlying the former, and of which the fossils were treated of at p. 448; thirdly, still lower, the Bangor group or Lower Cambrian, in which bands of felspathic porphyry occur. These last are, in the opinion of Professor Ramsay, intrusive and not of the same date as the associated sedimentary deposits.

Professor Sedgwick has also described, in his account of the geology of Cumberland, various trap rocks which accompany green slates, agreeing in mineral character and aspect with the Arenig Slates, which underlie all the fossiliferous strata of Cumberland, and consist of felspathic and porphyritic rocks and greenstones, occurring not only in dikes, but in conformable beds. Occasionally there is a passage from these igneous rocks to some of the green quartzose slates. These porphyries are supposed to have been produced contemporaneously with the stratified chloritic slates by submarine eruptions oftentimes repeated, the materials of the slates having been supplied, in part at least, from the same source.†

Murchison, Silurian System, &c. p. 825.
Geol. Trans. 2d series, vol. iv. p. 55.