series of tuffs and slates.[42] After a careful study of the ground I came to the conclusion that there is no trace of pre-Cambrian rocks at St. David's. I regard the so-called "Dimetian" as a granite which has invaded the Cambrian rocks; the "Arvonian" includes the quartz-porphyries, which appear as apophyses of the granite; while the "Pebidian" is an interesting group of basic lavas and tuffs which form here the lowest visible part of the Cambrian system (referred to at pp. 1212, 1213). A similar group of breccias and tuffs underlies the Cambrian slates of Llanberis, and has likewise been claimed as pre-Cambrian, but it can be shown to pass up continuously into the Cambrian strata. In the Malvern Hills a core of gneissose and schistose rocks is doubtless of pre-Cambrian age, fragments derived from it being found at the base of the overlying unconformable Cambrian strata.[43] From the plains of Leicestershire rises an insular area of rocky hills (Charnwood Forest) composed of slates, tuffs, and various crystalline rocks, which by the Geological Survey have been colored as altered Cambrian. Messrs. Bonney and Hill, who have fully described these rocks, regard them as of pre-Cambrian date, and show to what a large extent they are composed of volcanic agglomerates and tuffs.[44] No conclusive evidence, however, has been adduced that these rocks are pre-Cambrian. The slates resemble some of the Cambrian slates of Wales, and the volcanic rocks may be compared with those which in that principality lie at the base of the Cambrian system. Another protuberance of ancient rocks rises in Central England from beneath the coal-field of eastern Warwickshire. In this instance a definite age can be assigned to one portion of the rocks, for they contain Upper Cambrian fossils.[45] Beneath these strata, and apparently in conformable sequence with them, lies a well-marked volcanic group. The occurrence

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[42] Quart. Journ. Geol. Soc. xxxi. 1875, p. 167, xxxiii. 1877, p. 229, xxxiv. 1878, p. 153, xxxv. 1879, p. 285, xl. 1884, p. 507. My account of the so-called pre-Cambrian rocks of St. David's will be found in Quart. Journ. Geol. Soc. xxxix. 1883, p. 261. Prof. Lloyd Morgan has since confirmed my main conclusions, op. cit. xlvi. 1890, p. 241. Compare also J. F. Blake, op. cit. xl. 1884, p. 294.

[43] J. Phillips, "Geology of the Malvern Hills," Mem. Geol. Surv. ii. part 1; Holl, Quart. Journ. Geol. Soc. xxi. p. 72; Rutley, op. cit. xliii. 1887, p. 481; Callaway, p. 525, op. cit. xlv. 1889, p. 475.

[44] Quart. Journ. Geol. Soc. xxxiii. 1877, p. 754, xxxiv. 1878, p. 199, xxxvi. 1880, p. 337, xlvii. 1891, p. 78.

[45] Lapworth, Geol. Mag. 1886, p. 321; T. H. Waller, op. cit. p. 323; Rutley, p. 557.