

base, diorite, and porphyroid. According to Dumont these rocks, comprehended in his "Terrain Ardennais," can be grouped into three great subdivisions—1st and lowest the "Système Devillien," pale and greenish quartzites with shales or phyllades, containing *Oldhamia radiata* and annelid tracks (*Nereites*); 2d, the "Système Revinien," phyllades and black pyritous quartzites from which *Dictyograptus flabelliformis* (*Dictyonema sociale*), and worm-burrows have been obtained; 3d, the "Système Salmien," consisting mainly of quartzose and schistose strata or quartzo-phyllades, and yielding *Dictyograptus flabelliformis*, *Chondrites antiquus* and *Lingula*. The Devillian and Revinian divisions are united by Gosselet into one series composed of (a) Violet slates of Fumay; (b) Black pyritous shales of Revin; (c) magnetite slates of Deville; (d) Black pyritous shales of Bogny. These rocks have been greatly disturbed. They are covered unconformably by Devonian and later formations. In the northwest of France extending through the old provinces of Brittany, the west of Normandy and the north of Poitou, a great isolated mass of ancient rocks rises out of the plains of Secondary formations, and the pre-Cambrian rocks already referred to are there succeeded, with a more or less distinct unconformability, by a thick series of sedimentary groups which are now considered to be of Cambrian age. In western Brittany the pre-Cambrian green silky schists known as the "Phyllades de Douarnenez," which are believed to be about 3000 metres thick, are followed, perhaps unconformably, by purple conglomerates, sometimes 530 metres thick, and passing up into red shales which have a vertical depth of 2500 metres, and are surmounted by the Grès Armoricaïn or bottom of the Silurian system. In these strata *Scolithus* and *Tigillites* occur, but recognizable fossils are extremely rare, and no trace has yet been found here of the more typical Cambrian forms. In the basin of Rennes considerable bands of limestone, sometimes magnesian, together with quartzites, conglomerates, and graywackes occur in the Cambrian series. In the region of the Sarthe basement conglomerates are followed by gray shales with thick bands of siliceous and magnesian limestone, above which lies a series of sandy rocks containing *Lingula crumena* and passing under the Grès Armoricaïn.<sup>34</sup> In southern France from the Cambrian rocks which

<sup>34</sup> The (pre-Cambrian) phyllades of Brittany and the (Cambrian) purple conglomerates and red shales which succeed them were exhaustively treated by