

“gations of Beyrich, occur in several courses, striking from north-west to south-east, intersecting the Rothliegende, and in still more extended measure at the edge of the great bay opening towards south-east in the Grauwacke at Landeshut, in which the carboniferous formation and the Rothliegende have been deposited, and in which they form, according to Zobel and Von Carnal, a range extending from Schatzlar to Neurode. In north-eastern Bohemia, according to Emil Porth, and Jokély, malaphyres are found as numerous, and sometimes very thick layers, in the Rothliegende. Jokély describes, in the district of Jicin, five beds of melaphyre in various parts of the Rothliegende, which exhibit very distinctly observable stratigraphical relations. They prove to be, for the most part, true melaphyre streams, which have flown like lavas, and in visible connection with undoubted vein-like outbursts. According to Porth, the neighbourhood of the melaphyre veins is frequently, for great distances round, a field of melaphyric ash and scorix.*”

From these quotations it is plain that, in Europe, melaphyres only made their appearance during the Carboniferous and Permian periods, and especially characterised the latter. The occurrence of porphyritic conglomerates in Germany is similarly limited. On this point Zirkel says: “As porphyritic eruptions principally fall in the period of the Rothliegende, so the whole of the elastic rocks of the porphyry family stand in close connection with the deposition of its strata, to which they have also contributed a considerable amount of material. For instance, coarse porphyritic conglomerates form members of the Upper Rothliegende in the Oschatz-Frohburg basin, in the Döhlen basin, at Wieserstadt in the Hartz, and in the north-western part of Thüringia. At Baden, in the Black Forest, the deepest strata of the Rothliegende consist of porphyritic breccia and the middle strata of conglomerates.” † Even polygenous conglomerates, such as those above-mentioned, are especially frequent among the carboniferous and permian strata of Europe. Naumann thus briefly characterises the Rothliegende of Germany, which he considers as equivalent to the English lower New Red Sandstone and the French *grès rouge*: “The Rothliegende appears in so

* Zirkel; Petrographie. Vol. ii., p. 71.

† Zirkel; Petrographie. Vol. ii., p. 529.

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