

“Rothliegende” period, and generally the latter, in many countries, shews a decided coincidence, both as regards time and space, with the formation of the melaphyres.” Zirkel, in his recent work on “Petrographie,” gives a description of the melaphyre deposits of Germany, of which the following is a translation: “In districts which are older than the Carboniferous formation melaphyre rocks are but seldom found. The melaphyres of the southern Hunsrück and of the Pfalz, whose stratigraphical relations are better known than their mineralogical composition, appear in the Carboniferous system or the lower Rothliegende. This melaphyre region extends from Düppenweiler to Kreuznach, a distance of twelve miles, with a breadth between St. Wendel, Birkenfeld, Kirn, and Grumbach of several miles. Very few irregular masses are known, but, on the other hand, numerous veins have been observed with thicknesses varying from four to sixty feet. They possess mostly a vertical dip, cut sharply the Carboniferous strata, and often extend on their strike considerable distances. The mass of the vein frequently encloses fragments of the side rock, slate-clay or sandstone. But most frequently in this region, the melaphyres present themselves in the form of beds, which are of very variable dimensions, (often only five to ten feet, sometimes two hundred feet thick,) and lie, for the most part, evenly inserted between the strata of the Carboniferous system. Some of these can be traced for a distance of two miles. Besides these a melaphyre layer appears in this region, extending over many square miles. It is superimposed upon the upper strata of the Carboniferous system, and upon it rest the Conglomerates, sandstones and slate-clays of the Rothliegende. This great covering of melaphyre is at its edges accompanied by melaphyre-tuffs, which are in many places developed as melaphyre-amygdaloids. In very few instances only has it been observed that these melaphyres have exerted altering influences upon the side-rock. Within the limits of the Rothliegende melaphyres are very frequent. According to Naumann the melaphyre of Ilfeld in the Hartz, must be regarded as a thick layer bedded into the Rothliegende. It nevertheless in places lies immediately over the Carboniferous system, on account of its extending beyond the edges of the lower strata of the Rothliegende. Naumann also mentions a mass of melaphyre which in Tyrrathal covers the junction of the Greywacke with the Rothliegende, and in its