

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 porphy-  
" ritic conglomerates form members of the Upper Rothliegende  
" in the Oschatz-Frohburg basin, in the Döhlen basin, at Wieser-  
" städt 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  
" many of the countries of Germany, and in such great thickness,  
" that, in its mode of development there, we recognise the normal  
" type of this remarkable sandstone formation. The pigment of  
" the sandstone, consisting principally of iron-oxide, the frequent  
" occurrence of conglomerates, the often repeated change in the  
" size of grain of its rocks, the association with porphyries and  
" melaphyres, the very frequent layers of claystones and porphy-  
" ritic conglomerates, the great poverty, and often complete  
" absence of organic remains,—all these are characters by which  
" the Rothliegende is distinguished as quite a peculiar sandstone  
" formation."† That not one of the peculiarities here emphasised by Naumann are absent from the upper group of the Upper Copper-bearing rocks of Lake Superior, will be evident to any one who has observed them or carefully gone through the description above given. It therefore becomes a matter of much importance, and deserving of the most careful study, to ascertain whether this resemblance is a mere coincidence, or whether there is reason for supposing that any part of these Upper Copper-bearing rocks are of Permian age.

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\* Zirkel; Petrographie. Vol. ii., p. 529.

† Naumann; Lehrbuch der Geognosie. Vol. ii., p. 584.