porhyroblast. Field observations suggest that the flecky gneisses are products of regional metamorphism and deformation because the leucocratic parts are similar deformed as the host rock. None of them show evidences of partial melting but all of them show granoblastic polygonal textures which could be used as evidence of plastic deformation. Thus the flecky gneisses of the studied area are not products of a dehyration melting of biotite but were formed by a diffusion controlled metamorphic segregation process prior to peak of metamorphism.

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TERRANE ASSEMBLY IN THE VARISCAN BELT OF EUROPE

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The distribution of the major continents in the Early Palaeozoic can be recognised by endemic faunas, by faunas and facies characteristic of latitude, and by palaeomagnetic data; all three lines of evidence can now be reconciled.

In the Cambrian, different parts of Europe were parts of different continents:

B a l t i c a : Europe north of the Transeuropean suture was in low latitudes.

A v a l o n i a : including England and the Ardennes, and both margins of the Rhenohercynian, was also at low latitudes, but on the edge of Gondwana; in the Ordovician, Avalonia separated from Gondwana (forming the Rheic Ocean) and was fused to Baltica by the Early Silurian.

G o n d w a n a : like pre–Ordovician Avalonia, central and southern Europe were also attached to Gondwana (both were on the Cadomian arc), but unlike Avalonia, southern Europe was in low latitudes in the Cambrian and remained attached to Gondwana throughout most of the Palaeozoic.

The microcontinent of Avalonia was first distinguished (Cocks & Fortey 1982) by the fact that it had low–latitude faunas like parts of Gondwana in the Early Ordovician, but that subsequently these were gradually replaced by Baltic species, so that by the Late Ordovician Avalonia and Baltica had almost identical trilobites and brachiopods.

We now have palaeomagnetic data showing that, while both Avalonia and Baltica moved north to low latitudes during the Ordovician, they also converged before the Silurian. Ostracodes, which have no pelagic larval stages, remain distinct between Avalonia and Baltica until the Early Silurian. The northern ostracodes do not cross to the Bohemian and the Armorican parts of Gondwana until the Emsian, when the Rheic Ocean finally closed.

The last phase of the Caledonian Orogeny in England is now known to be Emsian: the same age as the Acadian Orogeny in eastern Canada. Early Devonian (preEmsian) freshwater fish are identical north and south of the Rhenohercynian (they occur in south Devon and the southern Taunus), so it was after this compressional event that the Rhenohercynian basin opened.

The precise lines of the Transeuropean and Rheic sutures are still uncertain. They can best be determined by noting pre–Silurian faunal distinctions across the former and pre–Acadian distinctions across the latter.