
General Discussion

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General discussion

A. TRENCH (*Department of Earth Sciences, University of Oxford, U.K.*). Several participants at the meeting commented upon the impact of the terrane hypothesis in directing geological thinking to consider strike–slip movements within the British Caledonides. It is perhaps pertinent to recount its effect on geophysical research.

The terrane hypothesis essentially makes two geophysically testable predictions. These are (i) that crustal fragments of disparate geographical origin are juxtaposed in the final crustal collage, and (ii) that terrane movements bring together blocks of different crustal character.

The former of these predictions lends itself to palaeomagnetic study whereas the latter might be addressed using a combination of seismic, electrical and potential field methods.

With regard to palaeomagnetism, analogies drawn between the Caledonides and the western North American Cordillera focused attention upon the respective rotation histories of individual Caledonian terranes. Several local rotations have since been identified (see, for example, Smethurst & Briden 1988; Trench *et al.* 1988) although whether these affect entire terranes is as yet unclear. If these rotations can be considered as evidence favouring the presence of strike–slip movements, other evidence suggests strike–slip movements to be of limited importance. Most notably, a combined Palaeozoic Apparent Polar Wander Path (APWP) from the northern British terranes is found to proxy for that of the North American craton after closing the present Atlantic. Their similar rotation would then argue against major strike–slip movement (which is no longer required by the palaeolatitudinal data (see Stearns *et al.* 1989). Obviously these observations are not mutually exclusive and can be accommodated by an orogen in which strike–slip played an influential, but not universal role. A further understanding awaits the identification of additional rotated terranes and a better time calibration of the compared APWPs.

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