The Cadomian Orogeny
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Preface

Strictly, the Cadomian orogen is a belt of late Precambrian—early Palaeozoic tectono-thermal activity which is exposed in parts of NW France, Spain and Czechoslovakia. Events within this belt are, however, broadly coeval with those recorded by the ‘Avalonian’ rocks of southern Britain, Newfoundland, the Maritime Provinces of Canada, and New England, USA, and the ‘Monian’ rocks of NW Wales and SE Ireland. Furthermore, pre-drift reconstructions of the North Atlantic region suggest that prior to the Mesozoic opening of the Atlantic ocean these areas were all part of one broadly continuous orogen. For these reasons, the term ‘Cadomian Orogeny’ is used in this volume in a more general sense to refer to the range of events within this orogen.

Despite many years of research into the Cadomian belt and related areas, until 1988 no major international conference had been held to bring workers together to discuss current research. It was against this background that it was desirable to convene such a meeting in order to define more rigorously the ‘Cadomian Orogeny’ and to promote the exchange of information and views between research workers of many different nationalities. This conference was held at Oxford Polytechnic in April 1988 as a joint meeting of the Geological Society of London and IGCP Project 233 (Terranes in the Circum-Atlantic Palaeozoic orogens).

This Special Publication contains 27 papers resulting directly from the Oxford conference, and includes both major reviews and detailed contributions covering specific topics which together provide a historical background and an insight into current research and ideas concerning the evolution of the Cadomian belt. The bulk of the volume is concerned with the evolution of the type area for the Cadomian Orogeny, the North Armoric Massif of France. The geology of this region is considered in a general chronological order, contributions dealing in turn with detailed aspects of geochronology, deformation and tectonics, magmatism and post-tectonic sedimentation. Rabu et al. and Dupret et al. review tectonic models for the region, and Brown et al. review the geochemistry and tectonic setting of Cadomian magmatism. Cogné assesses the influence of the Cadomian Orogeny on the later Variscan evolution of NW Europe. A short introductory review paper by the editors attempts to provide an overall synthesis of the geology of the North Armorican Massif, and outlines some of the more important conclusions and controversies which arose from the conference proceedings. The second section of the volume contains papers dealing with the evolution of related areas in southern England, NW Wales, SE Ireland, Iberia and Canada. The final paper by Gibbons draws together a number of tectonic themes common to many of the areas discussed in the preceding papers.

If any overall conclusion can be drawn from the conference it is that most workers now agree that the Cadomian belt represents an active plate margin, possibly located along the southern margin of the evolving Iapetus Ocean. There was a continuum of subduction-related tectonic and magmatic activity within this active plate margin over a period of at least 150 Ma. The most convincing analogue for the Cadomian belt may be the Mesozoic—present Andean chain which records a similar cycle of events; the Cadomian Orogeny does not therefore apparently reflect continent—continent collision.

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