Chapter 7 The Moray Firth Basin

Introduction

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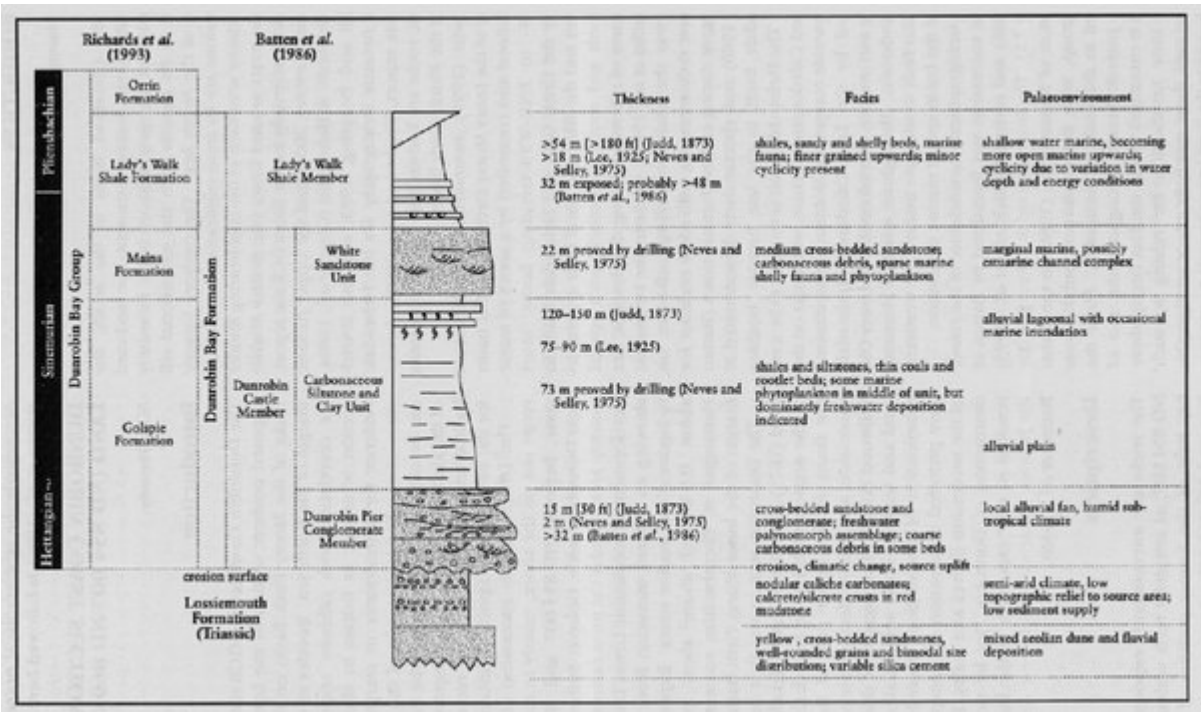
Like the Cleveland Basin to the south, the Dunrobin Coast Section represents the landward extension of a largely offshore basin intimately linked in its genesis with the extensional rift basins of the North Sea. The onshore Jurassic successions are far from continuous but include some classic sites such as the coal-bearing Middle Jurassic strata around Brora (see *British Middle Jurassic Stratigraphy* for the Brora GCR site report, Cox and Sumbler, 2002) and the Upper Jurassic 'boulder beds' at Helmsdale (Cope *et al.,* 1980a; Wignall and Pickering, 1993; see also *British Upper Jurassic Stratigraphy* for the Helmsdale GCR site report, Wright and Cox, 2001). Lower Jurassic rocks are known only from the western part of the Moray Firth Basin.

Trewin (1991) summarized the Mesozoic history of the Inner Moray Firth Basin. The basin was defined and controlled by a series of major NE–SW- to ENE–WSW-trending faults, most notably the Great Glen and Helmsdale faults in the west and the Wick and Banff fault systems to the north and south respectively, with several kilometres of extension during the Mesozoic Era (McQuillin *et al.,* 1982). Of these, the Helmsdale Fault was the main controlling influence on Mesozoic sedimentation, with some evidence for movement during earliest Jurassic times (Batten *et al.,* 1986) and, spectacularly demonstrated at Helmsdale itself, in the late Jurassic 'boulder beds'. The Helmsdale Fault is thought to be a reactivated Caledonian structure, with rocks on the upthrow side comprising Moinian metasediments intruded by the Late Caledonian Helmsdale Granite and overlain unconformably by Lower Old Red Sandstone. Throughout much of Mesozoic times this fault would have marked the westward limit of the basin and of marine deposition.

The stratigraphical nomenclature of the Lower Jurassic succession was formalized by Batten *et al.* (1986) and revised by Richards *et al.* (1993) (Figure 7.1). The latter elevated the Dunrobin Bay Formation of Batten *et al.* (1986) to the status of a group, with the constituent subdivisions elevated to the ranks of formation. Since the Lower Jurassic Series throughout the rest of Britain is contained within the Lias Group there seems little justification for raising to such elevated rank these relatively minor stratigraphical units within the local Lower Jurassic succession. Accordingly the stratigraphical nomenclature of Batten *et al.* (1986) is followed here.

References



(Figure 7.1) Summary stratigraphy and interpretation of the succession at Dunrobin. After Batten et al. (1986).