

example, the sequence D_1 to D_3 identified in the regional synthesis of the South-west Highlands by Roberts and Treagus (1977c), differs numerically from that used in detailed, more local studies within the same area by Roberts (1974a; 1976) and Treagus (1974). Even with this rationalisation, problems still exist on a regional scale with the result that different nomenclatures are still being perpetuated by various authors. One major problem arises from a variation in the number of recognisable major phases across the Tay Nappe. D_1 and D_2 are widespread events recognised by most authors. However, a D_3 event associated with the development of the Tay Nappe in the Southern Highlands, becomes difficult to distinguish from D_2 farther to the north-west. Consequently, workers in the Central Highlands such as Roberts and Treagus (1977c; 1979), Thomas (1979; 1980) and Treagus (1987) recognise only D_1 and D_2 and their main late-tectonic deformation is termed D_3 . Workers in the Southern Highlands (e.g. Harris et al., 1976; Bradbury et al., 1979; Harte et al., 1984; Mendum and Fettes, 1985) recognise three nappe-forming or modifying events and their main late-tectonic phase is D_4 . The latter nomenclature is more generally applicable and hence will be adopted in this account unless stated otherwise.

In most areas the structural development has thus been explained in terms of three or four major episodes of deformation which occurred during the Caledonian Orogeny. There is some evidence to suggest that still older events may be recognised in the Central Highland Migmatite Complex. During the first widespread (D_1) deformation the major folds, together with accompanying slides, were initiated with a NE-SW trend. During D_2 (or D_2 and D_3 of some authors) these folds were extensively modified in places to produce a complicated pattern of refolded nappes. In other places D_2 folds form separate complexes of intermediate-scale folds, accompanied by slides which may be coincident with or extensions of those of D_1 origin. Where a separate D_3 phase is identified, it is seen to be broadly coincident with the peak of regional metamorphism and associated igneous intrusion, although it may be a little later in the north-east. Later phases are late-tectonic episodes which overprint the composite foliations of both the nappes and the separate D_2 and D_3 fold complexes. They are separated from the earlier movements by a significant time gap and seem to be the result of a change in tectonic regime from ductile folding to basement fracture and block uplift (Harte et al., 1984; Mendum and Fettes, 1985).

A diagrammatic structure of the Grampian Highlands is shown in [\(P915427\)](#). This is based largely on the diagram by Thomas (1979) for blocks A, B, C and D), extended to the north and north-east by incorporating results of published and unpublished work of various authors. For the purposes of the discussions in this chapter, the diagram has been divided into three complexes defined on a combination of structural and geographical criteria.

Southern Grampians Complex: the SE-facing folds to the south-east of the axis of the Loch Awe Syncline together with all the folds above and to the south-east of the Boundary Slide and its projected north-eastern continuation.

Western Grampians Complex: the apparently NW-facing folds to the north-west of the Loch Awe Syncline axis and the Ossian-Geal Charn Steep Belt, and the north-eastward continuation of these folds above the Fort William Slide through the Lochaber area.

Central Grampians Complex: the remainder of the Grampian Highlands, which comprises mainly the outcrop of the Grampian Group with those parts of the Lochaber Subgroup below the Boundary Slide. The northern part of this last area includes the Central Highland Migmatite Complex.

In the following sections, the structures within each complex are described from south-east to north-west, across the overall Caledonoid strike. Within each section, the structures are described firstly in the south-west, where the relatively simple fold geometry is essentially as described by E B Bailey,

and then progressively through to the north-east with reference to the labelled blocks of P915427.

[Southern Grampians Complex](#)

[Western Grampians Complex](#)

[Central Grampians Complex](#)

[Structural development of the Grampian Highlands](#)

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