
Stratigraphical summary

A summary of the stratigraphical succession of the region is presented in (Table 0.1), with a simplified geological map in (Figure 0.1); see also the section (Figure 0.2). Relevant detail is given in the excursion accounts. Comprehensive and systematic coverage for the Glasgow area of this guide is mostly provided in the recent (1985) third edition of the British Geological Survey's Regional Geology handbook on 'The Midland Valley' which contains numerous maps and photographs. The companion volume on 'The South of Scotland' (3rd. edition, 1971) covers the Girvan and Ballantrae areas of this guide and has recently been supplemented and updated by B.G.S. booklets on Girvan (Cameron, Stone and Smellie 1986) and Ballantrae (Stone and Smellie 1988). 'The Geology of Scotland' (third edition, Craig 1991) places the geology of the region in its wider context. A concise and simplified account of the succession and palaeogeography, together with descriptions of excursions at an elementary level, is contained in the book 'Geology Explained ' by Lawson and Lawson (1976). Although now out of print, this book is available at most public libraries in the Glasgow area.

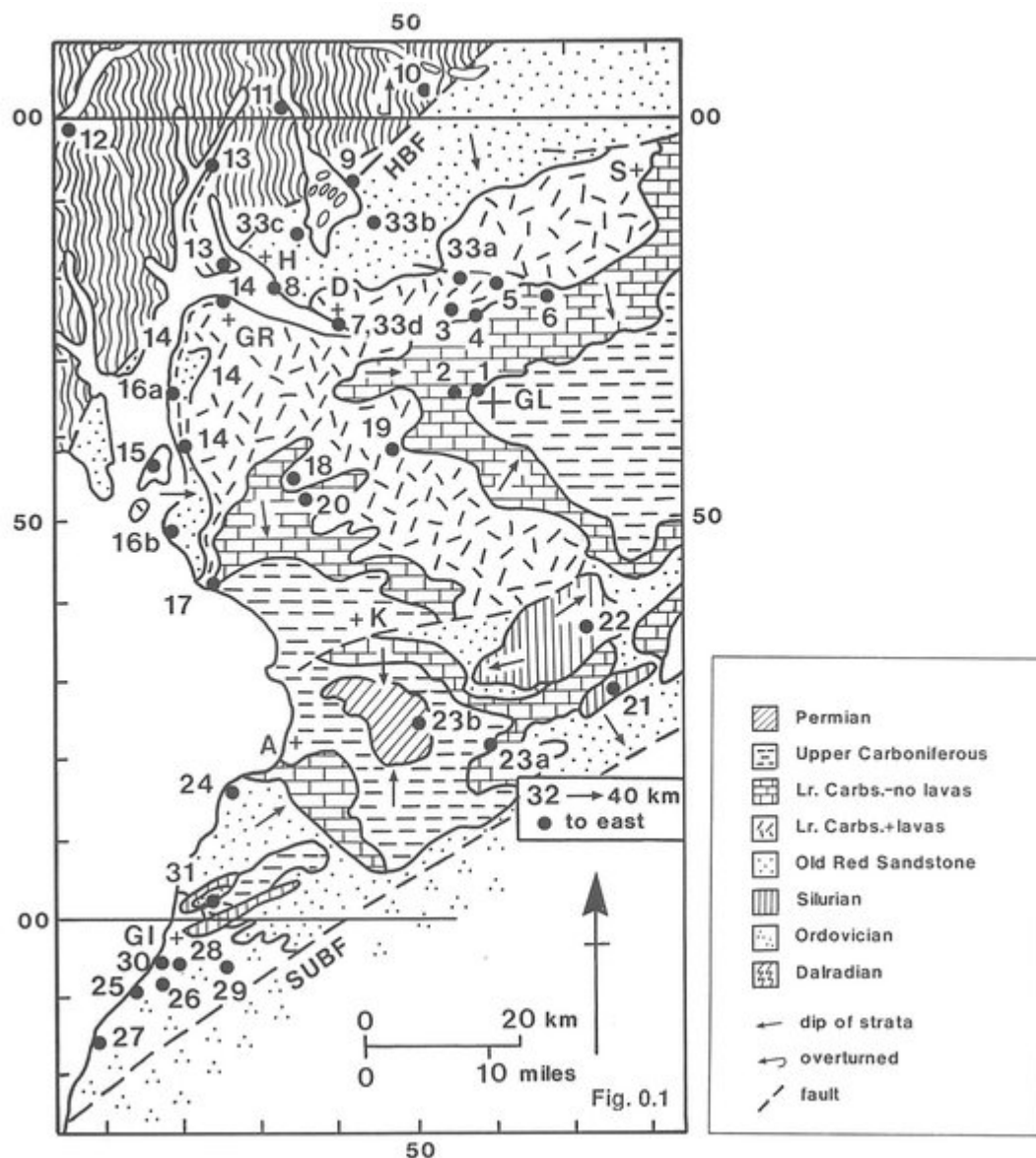
The above books do not, however, deal adequately with the difficult and controversial subject of the plate tectonic history of the region. It is for this reason that there follows an essay by Professor B.J.Bluck on 'Terrane Accretion in Western Scotland'.

References

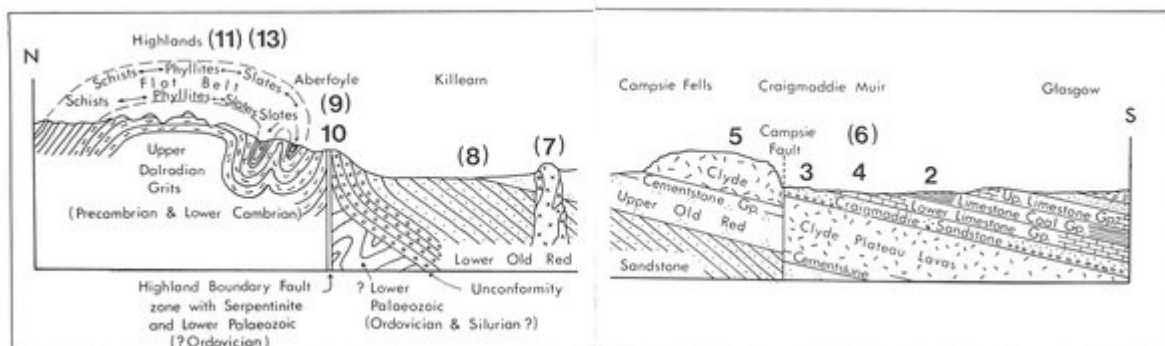
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AGE Ma	SYSTEM and PERIOD	MAJOR ROCK UNITS	MAIN ROCK TYPES and SELECTED FORMATIONS	FOSSIL GROUPS	ENVIRONMENT	EXCURSIONS (Shortened titles)	PALAEO LATITUDE
2	QUATERNARY		glacial deposits, alluvium, raised beach deposits, peat	marine shells	glacial erosion & deposition changes of sea level	33. Quaternary 5. Campsie	50°N
65- 145- 205- 250	TERTIARY CRETACEOUS JURASSIC TRIASSIC	not present in this area but represented on the Isle of Arran					40°N 30°N
290	PERMIAN	Mauchline Sandstone	red dune-bedded sandstones lavas and ashes		sand deserts - wind from east: volcanicity	23. Lugar etc	
	CARBONIFEROUS	Coal Measures	mudstones, sandstones, coals Barren Red Measures at top	non-marine bivalves plants	forested tropical swamps, rivers and lakes	17. Saltcoats	8°N
		Passage Group	coarse cross-bedded sandstones, fireclays: some lavas	plants	large rivers and deltas	17. Saltcoats 24. Heads of Ayr	
		Up. Limestone Gp.	sandstones, shales, limestones (Gillnock Sdstn., Orchard Lstn.)	bivalves brachiopods	cyclical deposition of muds, deltaic sands		
		Limestone Coal Gp.	sandstones, shales, coals	bivalves, plants Lingula	swamp vegetation (to form coals) with	2. Fossil Grove	0°
		Lr. Limestone Gp.	shales, limestones, sandstones (Hurlet & Blackhall Limestones)	brachiopods, corals, bivalves, crinoids	marine incursions (limestones)	20. Treame, 4. Blairsketh, 6. Corrie Burn, 5. Campsie	
		Calcareous Sdstn. Measures	lsts. & shales (Ballagan Beds) Clyde Plateau Lavas: sandstones	rare ostracodes	lagoons and volcanicity	5. Campsie, 3. Mingavie 7. Dumbarton, 18. Loanhead	5°S
360	DEVONIAN	Upper Old Red Sandstone	less coarse conglomerates redder sdstns., conglstones	plants rare fish	alluvial sedimentation in a strike-slip fault regime	16. Clyde ORS, 15. Cumbræ 14. Greenock, 24. H. of Ayr	
410		Lower Old Red Sandstone	coarse red conglomerates and sandstones: lavas in Ayrshire	plants rare fish		9. Balmaha, 16. Clyde ORS, 8. Ardmore	10°S
440	SILURIAN	(Girvan & Midland Valley inliers)	conglomerates, sdstns, shales passing up into red beds	brachiopods trilobites, fish	shallowing sea becoming non-marine	30. Girvan, 31. Craighead 21. Hagshaw, 22. Lesmahagow	
		(Southern Uplands)	greywackes, black shales, mdstns. (Birkhill Shales)	graptolites	oceanic muds with turbidites	32. Dob's Linn	0°
	ORDOVICIAN	Highland Border Complex (L&U.O.)	spilites, black shales, cherts, serpentine: sdstn. & lstn.	brachiopods rare	oceanic muds, oozes: ophiolite evolution	9. Balmaha 10. Aberfoyle	
		Girvan Cover rocks (U.O.)	conglomerates, greywackes, shales, limestones	trilobites graptolites	proximal fore-arc basin variable depth	29. Stinchar Valley 28. Dow Hill, 30. Girvan	15°N
		Ballaunrae Complex (L.O.)	black shales, cherts, spilites, serpentine, gabbro etc.	rare graptolites rare radiolaria	volcanic arc and marginal basin	27. Bennane Hd. 25. Pinbain 26. Knocklough, 28. Dow Hill	
		(Southern Uplands (U.O.))	greywackes, black shales, cherts, (Hartfell Shales)	graptolites	oceanic muds with turbidites	32. Dob's Linn	
510	CAMBRIAN	?					25°N
570	PRECAMBRIAN	Southern Highland Group	schistose grits (Ben Ledi Grits) slates, phyllites (Aberfoyle Slates)		oceanic muds with turbidites	11. L.Lomond, 13. Rosneath 10. Aberfoyle	

(Table 0.1) Stratigraphical succession for the Glasgow Girvan areas.



(Figure 0.1) Simplified geological map of the area covered by the guide: the locations of excursions are shown diagrammatically by numbered dots. A key to the numbers is provided in the Contents list and also (more briefly) on the inside back cover. HBF = Highland Boundary Fault, SUBF = Southern Upland Boundary Fault, H = Helensburgh, D = Dumbarton, GL = Glasgow, K = Kilmarnock, A = Ayr, GI = Girvan, S = Stirling.



(Figure 0.2) Diagrammatic section through the north-western part of the Midland Valley, showing the positions of relevant excursions: the numbers in brackets are of excursions which are not on the line of the section.