

Field Meeting Report: Coniston, led by Derek Leviston 18th May 1986

Les Dolamore¹

DOLAMORE, L. (1987). Field Meeting Report: Carrock Fell, led by Derek Leviston 18th May 1986. *Proceedings of the Shropshire Geological Society*, **6**, 16–21. The purpose of the field meeting was to visit exposures typical of the Ordovician and Silurian geology exposed around Coniston, with particular reference to the Borrowdale Volcanic Group and the overlying Silurian sediments.

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INTRODUCTION

The party met in early morning rain, which drizzled until our arrival independently at the village of Coniston, but this was soon blown away by the strong south-westerly breeze which persisted all day and kept the temperature on the low side.

Walking north-westwards and upwards, the group followed the general lie of the route shown on the locality map and realted figures (Figures 1 to 5).

ITINERARY

The start was over Lower Coldwell Beds and Brathay Flags of Wenlock age in the Silurian, as far as the softer Stockdale Shales (Llandovery) where there were a few brachiopods to be found in a small exposure. Crossing the Mealy Gill on stepping stones, still in the shales, then an abrupt change of slope on to the relatively thin Coniston Limestone within a few yards.

The Coniston Limestone is a coarse, sandy, resistant rock of Caradocian age, steeply dipping to the south-east. The average thickness of the formation in the area is about 75 feet and it extends right across the region from Millom in the south-west to Shap in the north-east. It is an important indicator, or marker horizon, dividing the volcanics from the weak Silurian mudstones and siltstones. A few fossils, mainly brachiopods and bryozoans, were collected and in places were found examples of differential weathering, where the impure limestone was hollowed out in hemispherical pits about the size of a teacup. Above the limestone is the older Borrowdale

Volcanic Group, and the rest of the day was spent studying these; starting at point 4 on the locality map. Initially the volcanics are called the Yewdale Breccia, these are coarse green tuffs, probably ignimbrites, with pink rhyolitic and dark variolitic fragments, showing little signs of bedding. Having climbed over the shoulder of Foul Scrow we stopped for lunch, looking across at the mist-covered head of The Old Man of Coniston.

We were soon on the move again, downhill this time, to Church Beck with its narrow gorge and spectacular falls above and below the miners bridge. The tuffs from now on were bedded and showed a great variety of structural and sedimentary features. Coppermine Valley is a typically glaciated valley with roche moutonnée, ice polished surfaces and glacial striae.

By locality 10 we left the main itinerary to follow the line of the "Bonzer" vein. The area is heavily mineralised and three or four large veins have been mined from early times up until the last war, mainly for copper. Waterpower from three becks was in abundance and the relics of a number of waterwheels, leets and inclines remain to delight those interesting in the industrial archaeology of the region.

Time ran out for us just below the Kennel Crag and we made our way back into Coniston following the Church Beck.

ACKNOWLEDGEMENTS

On behalf of the Shropshire Geological Society and the Russell Society for leading the joint field trip, our most sincere and grateful thanks were expressed to Derek Keviston and his energetic small son for a truly delightful itinerary and very instructive day.

Maps and tables have been reproduced by kind permission of the Cumberland Geological Society.

Disclaimer - The information contained in this account has been prepared from notes taken during the field meeting. Its sole aim is to provide a record of what was seen and provide an insight into the diversity of geology exposed around Coniston. It should not be used for any other purpose or construed as permission or an invitation to visit the sites or localities mentioned.

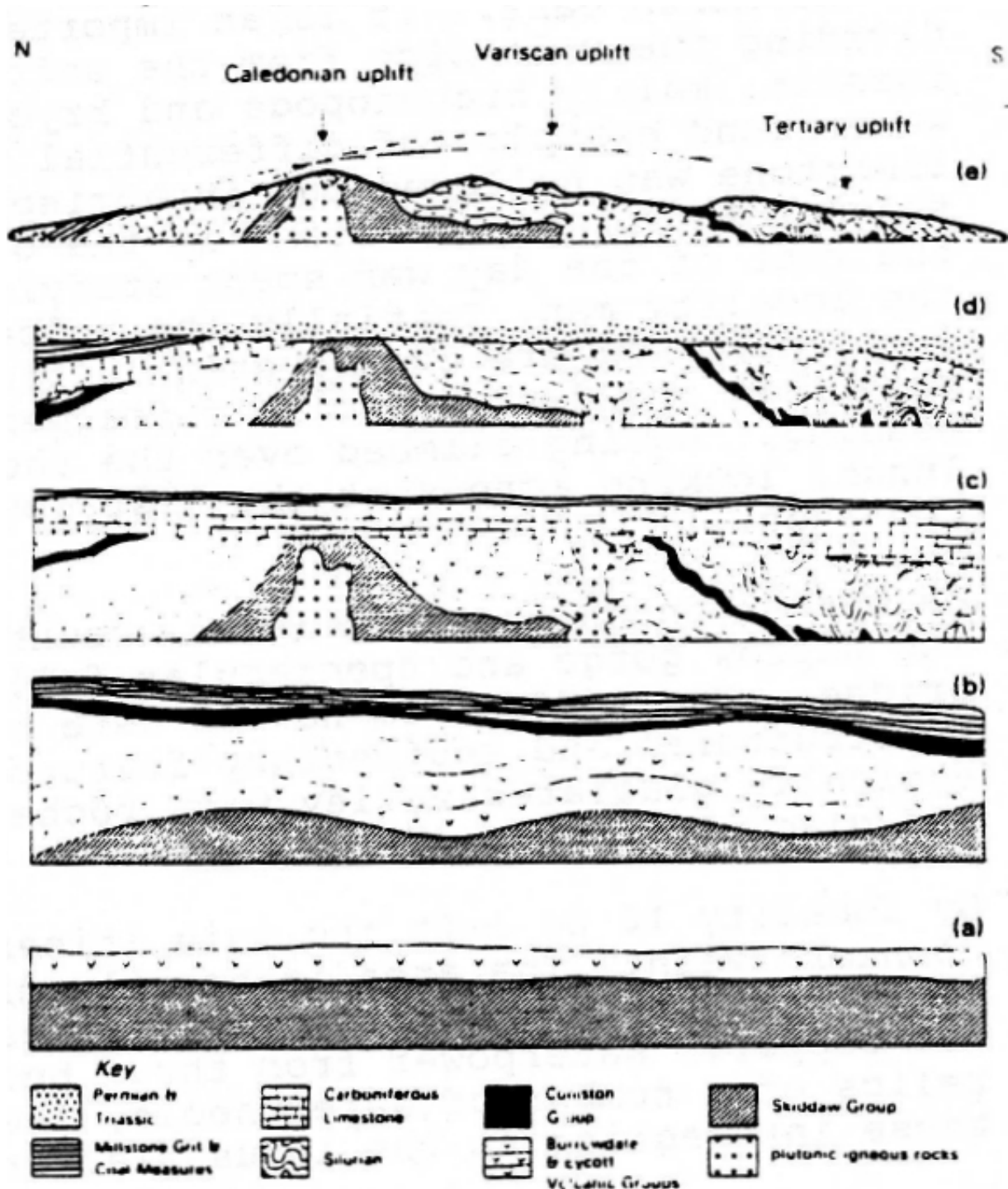


Figure 1: Generalised cross-sections to illustrate the building of the Lake District. (a) Deposition of Skiddaw G; folding and erosion; deposition of Eycott and Borrowdale Volcanic Groups. (b) Folding and erosion; deposition of Coniston Limestone Group and Silurian Rocks. (c) Severe folding and great erosion; intrusion of plutonic igneous rocks; deposition of Carboniferous rocks. (d) Gentle folding and considerable erosion; deposition of Permian and Triassic rocks. (e) Gentle uplift, producing an elongated dome and resulting in radial drainage; erosion to present form. (Adapted from *British Regional Geology: Northern England. Figure 1*; by permission of the Director of the Institute of Geological Sciences).

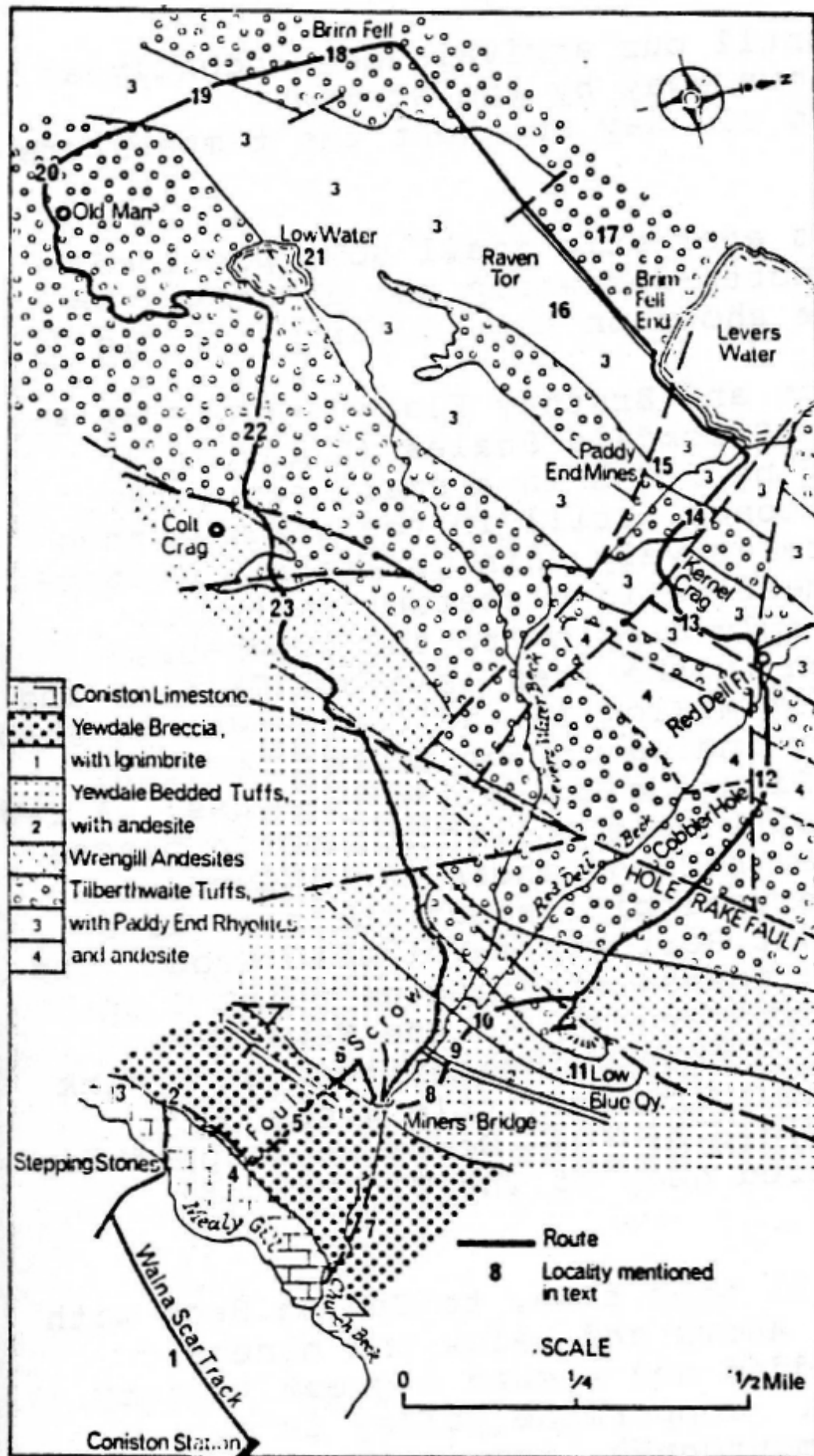


Figure 2: Locality map for itinerary north of Coniston.

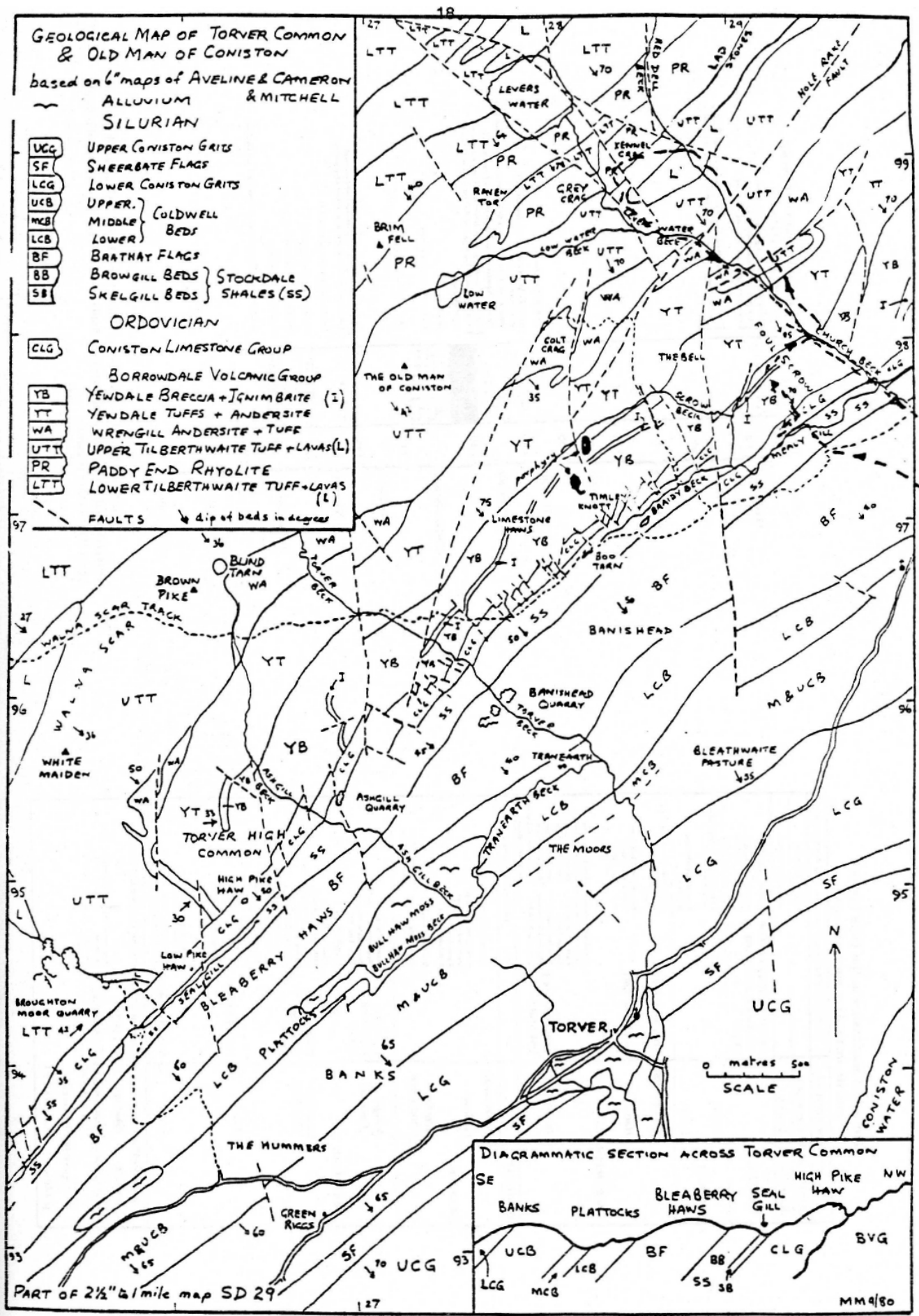


Figure 3: Geological map for the area immediately west of Coniston.

Stratigraphical divisions		Principal lithological groups and formations		
QUATERNARY Devensian		glacial deposits		
JURASSIC	Liassic	calcareous shales		
TRIASSIC		MERCIA MUDSTONE GROUP	Stanner Shales	
		SHEPHERD SANDSTONE GROUP	Kirkstun Sandstone St Bees Sandstone	
PERMIAN	upper	Eden Shale, St Bees Shale with evaporites		
	lower	Penrith Sandstone Brockton		
CARBONIFEROUS	Westphalian	COAL MEASURES	upper Berron red beds middle lower	
	Namurian	MILLSTONE GRIT	Rossendale Mudstone Hensingham Grit etc.	
	Dinantian	CARBONIFEROUS LIMESTONE	Gleason Formation	2nd Limestone
			Urswick Limestone	3rd Limestone
		Park Limestone	4th Limestone	
		Dalton Beds	5th Limestone	
		Red Hill Gault	6th Limestone	
		Marin Limestone	7th Limestone	
		Basement Beds	Cockermouth Leas Basement Beds	
DEVONIAN		Mell Fell Conglomerate		
SILURIAN	Downtonian	Scout Hill Flags		
	Ludlow	Kirkby Moor Flags Barnsdale Slates Coniston Grits Culterwell Beds		
	Wenlock Llandovery	Brathay Flags	Stockdale Shales Browgill Beds Skalgill Beds	
ORDOVICIAN	Ashgill - Caradoc	CONISTON LIMESTONE GROUP	Ashgill Shales Appletwaite Beds Stockdale Rhyolite Site End Beds Dyffil Shales	
	Caradoc - Llandovery	BORROWDALE VOLCANIC GROUP	Yewdale Breccia Whengill Andesites Lonsdale Tuff conglomerates Lickle Rhyolite Dunnerdale Tuffs Ary's Bridge and Birk Fell conglomerates and rhyolites Ullswater and Honister Andesites	
	Llanvirn	EYCOTT GROUP	Tarn Moor Mudstones High Leaby Formation Binsey Formation	
	Arenig	SKIDDAW GROUP	Latterbarrow Sandstone Kirk Side Slates Loveswater Flags Hope Beck Slates	
<i>Igneous intrusive rocks, mainly associated with the Caledonian orogeny</i>				
granites	Skiddaw, Shap, Eskdale	diorite microgranite dolerite gabbro monite	} occurring as veins dykes and volcanic necks.	
granophyres	Buttermere and Ennerdale, Carrock Fell			
microgranite	Threlkeld			
gabbro	Carrock Fell			

Figure 4: Geological succession for the southern part of the Lake District.

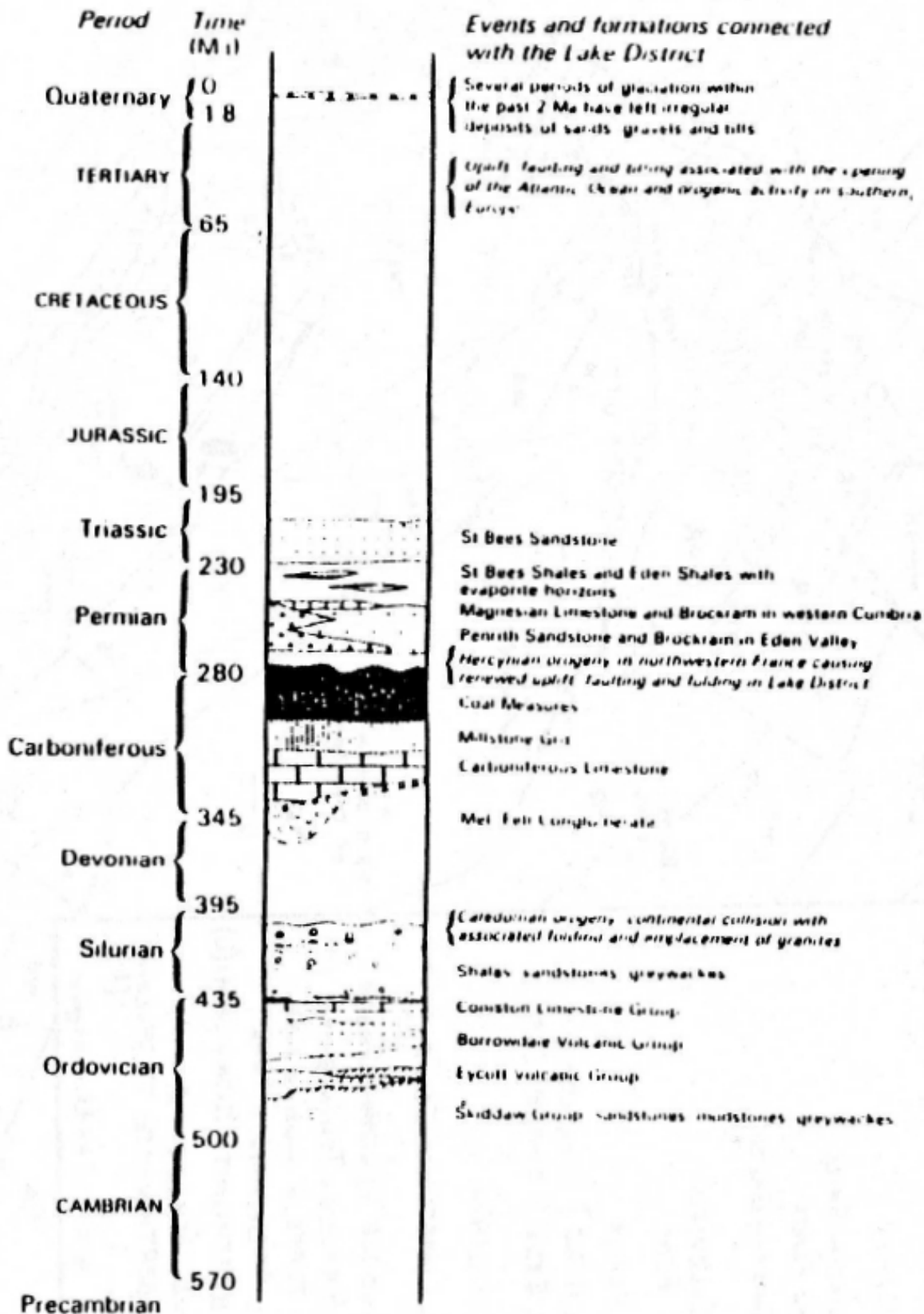


Figure 5: The geological succession in the Lake District. Geological periods unrepresented in the region are shown in small capitals. Time is shown in millions of years (Ma) before present.

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