
20 Pavey Ark

Theme: Volcanoes and molten rock

Location

20 Pavey Ark — violent volcanics. Pavey Ark is a serious summit and a strenuous 6 kilometre return hike. Ascend Stickle Ghyll and approach from east [NY 285 079]

Description

The rocks of the Scafell range and the Langdale Pikes record the most violent periods in the volcanic history of Cumbria.

Geologists estimate that over 400 cubic kilometres erupted from a huge volcano before its crater (called a caldera) collapsed and filled with water and more volcanic debris. The fantastic rocks on Pavey Ark are the product of this highly explosive eruption. Red hot debris, ash and gas surged down the slopes to the lake at great speeds. These are called pyroclastic flows and form rocks called ignimbrites and volcanic breccias. The weird and bent shapes in this photograph are spatters of lava, once hot and soft enough to be deformed. The breccias contain lava blocks full of holes that once contained gas. There are also blocks ripped off the walls of the volcano. The crater lake progressively filled with this mix of debris all of which had a volcanic origin. They are called volcano-sedimentary, or volcanoclastic rocks because, as their layered and laminated textures show, these are also sediments deposited in water.

An enormous range of rock types were generated by this ancient volcano 455 million years ago. Then these rocks were dislocated, broken and weathered over millions of years and it is this combination of processes that has given us some of the most rugged and stunning landscapes in the Lake District.

Photographs

(Photo 20-1) 20 Explosive volcanic rocks above Langdale Valley.

(Photo 20-2) 20 Pavey Ark.



(Photo 20-1) Explosive volcanic rocks above Langdale Valley.



(Photo 20-2) Pavey Ark.