Excursion 6: The east coast: basalt columns, fossils and landslips (No route map)

This excursion along the east coast visits the most fossiliferous rocks on Eigg, at the locality where Hugh Miller found his Reptile Bed in situ, with magnificent views of the mainland mountains. Although the distance is not great the path is steep, there are small rock falls to traverse, and exploring the fossiliferous rocks can take as much time as you have. There are also fine examples of columnar basalt lava flows.

From the Kildonnan road, before it descends steeply to Kildonnan [NM 4862 8538], take the track that leads to Hill Cottage and St Donnan's church ruins. Past the cottage, go through a gate [NM 4884 8560] that separates the enclosed fields from open hillside. Follow a track on the open side, keeping alongside the wall, to the cliff top at the muddy hollow of Bealach Clith, with a gate [NM 4921 8581].

The cliff path

A narrow and often muddy sheep path descends the cliff. Follow the path northwards; the basalt cliffs become higher above you, showing fine columnar jointing. There has been a rock fall in recent years, near some exposures of Valtos Sandstone underlying the basalt, and care is needed. Beyond this, some of the columns are curved where cooling was irregular. At one point the path descends nearly to sea level. Basalt columns above the path dip steeply away from the cliff, and are well below the level of the Valtos Sandstone, because the basalt here has slid down the hillside and rotated as it did so. The path rises again, and crosses a larger and more-active rock fall.

Viewing the basalt cliff from near this point, a paler layer can be picked out among the generally darker basalt flows. This is a distinctive variety of basalt, a mugearite, named after a village on Skye. It is the only such lava on Eigg, and is a valuable marker horizon in working out the structure. It is also easily recognised in fallen blocks.

The Kildonnan Member type section

Where more-extensive land-slipped ground begins to form a distinct undercliff, detached from the main basaltic cliff behind, descend towards the shore, following the raised beach. This is just over 2km north of Kildonnan.

A large boulder [NM 49584 87239] of pale vesicular mugearite is prominent on the raised beach. Its sides are hollowed out and it is useful as a shelter stone in inclement weather. This is the locality for the most fossiliferous rocks on Eigg, the Kildonnan Member of the Lealt Shale Formation. As can be appreciated from their position below the sandstone that is visible in the cliffs above, they belong to an older part of the Jurassic succession (see table on page 68). This is the locality where Hugh Miller found the Reptile Bed in situ, in 1845.

The low cliff between the raised beach and the present day storm beach shows exposures of fissile mudstones and thin limestones. The fossils in them are better seen on the shore below, between tide marks and intermittently within the upper storm beach. To explore the section in detail consult the map and description in the Geological Survey memoir, pp. 24–25.

On a brief visit, look for the most conspicuous fossils, the small mussel-like bivalve *Praemytilus strathairdensis* (page 10). The best locality is near high-water mark, immediately below the shelter stone. The shells are very well preserved, still showing their mother-of-pearl structure, but fragile. One very thin bed contains many small black sharks' teeth and fish scales. Also conspicuous are septarian concretions: ovoid calcite-cemented masses that stand proud of the enclosing mudstones. They are formed by bacterial activity in Jurassic times, within the newly deposited muds. Subsequent dehydration caused the concretion to crack, and after that coarse clear calcite crystallised within the cracks. Hugh Miller's reptile bed may be found in situ [NM 4963 8731] opposite a tiny stream that drains the small lochan in the landslip, near the northern limit of the exposures. A low tide is necessary. There is very little of the thin red-weathering limestone still exposed. It should not be hammered. Loose blocks may be found, though not as abundantly as at Eilean Thuilm (page

21).

If not continuing the excursion, return by the same route, perhaps visiting St Donnan’s church.

Excursion 6 extension: rotational landslips and the shieling

There is no continuous path northwards. It is best to keep well above the shore, traversing the hillocks of land-slipped ground, avoiding the worst of the bracken in summer, admiring the high basalt cliffs above, and keeping an eye out for the eagles that nest there. Eventually you reach a small lochan, trapped behind one of the landslips, and then the shieling [NM 4955 8892] where Hugh Miller was offered refreshment by an island girl who was tending the cattle (page 35).

Geologically, the cliff behind the shieling, over which the streamlet tumbles, is of basalt, as already described. The green fields where the cattle once grazed are fertile because they are on gravels accumulated in a former lochan, now drained by erosion of its one- time barrier by the stream that sweeps past the shieling. The barrier itself is formed by a rotational landslip (page 34); in the walls of the little gorge made by the stream, one can see Jurassic sandstone tilted steeply towards the cliff, with mudstones and sills beneath it. Above the sandstone are level-bedded gravels of the former lake.

(From the elevation of the shieling, a stretch of sand is seen on the shore below, interrupted by low rock exposures visible at low tide. These expose the oldest rocks on Eigg, the topmost part of the Bearreraig Sandstone, a formation that is prominent on Skye. Only Jurassic specialists need visit them.)

Continuing northwards, a valley separates the main basalt cliff and its screes from an outer rampart above the shore. This is formed from the Sgor Sgaileach Sill, described in Excursion 5, which can be done in reverse from here.

Figures

(Figure 41) Sedimentary rocks of the Kildonan member, showing grey mudstones and concretions.

Figure 41 Sedimentary rocks of the Kildonan member, showing grey mudstones and concretions.