# Excursion 8 Lower Glen Dibidil – Nameless and Forgotten corries – Upper Glen Dibidil – Sandy Corrie – Sgurr nan Gillean

**Highlights**

Designed to take advantage of the excellent three-dimensional exposure afforded by the rugged topography around Sgurr nan Gillean and Ainshval, this excursion includes closer inspection of the volcanism, tectonism and intrusions associated with stages 1 and 2 of the Rum volcano. Evidence for the composite intrusion and subsequent fragmentation of rhyodacite and basaltic magmas in a feeder system to surface eruptions is examined in Nameless Corrie. Exposures of outward-tilted Lewisian gneisses and lowermost (locally folded) Torridonian sandstones are examined in Forgotten and Sandy corries. These Archaean and Proterozoic basement rocks are unconformably capped by Paleocene breccias and ignimbrites of the Rum caldera infill succession, a relationship that records a phenomenal pre-caldera uplift of >1 km. Also examined is the three-dimensional relationship between the intrusive rhyodacite facies and the extrusive facies.

Historically important exposures that record the wholesale remelting of earlier felsic rocks by the later ultrabasic magmas are seen just east of Ainshval. Other exposures that record evidence of localised hybridisation between the remobilised felsic and invading ultrabasic melts are also seen. Spectacular views may be savoured from Bealach an Fhuarain, the Ainshval ridge, and Sgurr nan Gillean peak.

This (Figure 62) route comprises a series of steep and physically challenging hikes; the maximum elevation climbed to is 760 m, though the total height climbed is around 950 m. In some places, one passes along narrow ridges or ledges that are very close to cliffs over 100 m in height. It is therefore highly inadvisable to attempt much of this route in poor weather or visibility. There are superb views from the summits and from upper Glen Dibidil. Ten to twelve hours are required to complete the route, which, given its length and arduous nature, should be started from and ended at the Dibidil bothy.

## Locality 8.1 Lower east side of Sgurr nan Gillean – contact between intrusive breccia and mesobreccia [NM 3899 9294]

From the Dibidil bothy, walk north-west past the north-east side of the sheilings (stone-walled sheep pens), and find the path to Papadil. Oblique to the path is a low north-west-trending grassy ridge. Proceed uphill along the top of this ridge toward the mouth of Nameless Corrie, the large corrie just north of Sgurr nan Gillean (the 'Stony Corrie' of Hughes, 1960a), until pinkish outcrops of 'Am Màm-type' intrusive breccia are reached (cf. Excursion 2, on the east side of Loch Gainmhich). Here, metre-scale blocks of gabbro, dolerite, Torridonian sandstone and Lewisian gneiss are enveloped in the creamy, coarse, 'tuffaceous' matrix that also contains numerous lobate fine-grained mafic inclusions of 1–6 cm diameter. Just upslope of the intrusive breccia outcrop are more rugged-looking red crags of feldspathic-sandstone-dominated mesobreccia. The north-east-trending contact between these rock types is directly observable at one point only [NM 38993 92940]. In this small exposure, at about 135 m OD on the south-west side of a small north-west-trending gully, relatively fine and somewhat crushed-looking mesobreccia overlies the intrusive breccia along a sharp contact that dips at about 50° to the north-west. The contact is marked on the intrusive breccia side by a 1–2 cm-thick dark grey zone with a fine-grained matrix and scattered feldspar phenocrysts. Intrusive breccia adjacent to this dark zone contains mafic inclusions aligned parallel to the contact. Moreover, the intrusive breccia matrix and the dark outer zone are undeformed. The intrusive breccia therefore post-dates the overlying mesobreccia and any faulting that might have affected the mesobreccia hereabouts, and controlled the intrusive breccia emplacement. On the north-west side of the gully, the mesobreccia–intrusive breccia boundary is offset a few metres downslope along a small fault that runs through the gully. The gully can be traced downslope from here past the sheilings as far as the mouth of the Dibidil River. As the fault surface is not visible, dextral strike-slip and/or normal fault motion (north-east side downthrown) could have generated the observed offset of the boundary. The 120° trend of the fault is typical of the 120–140° range for the many fractures and minor faults that cut through most of the rock units around the eastern and southern sectors of Sgurr nan Gillean. Such a fault pattern could have been generated by local doming (e.g. caused by the later mafic intrusions), or by the regional north-east to south-west extensional regime during the Palaeogene (cf.

England, 1988).

## Locality 8.2 Lower east side of Sgurr nan Gillean – enigmatic Torridonian rocks above rhyodacite (extrusive?) and mesobreccia [NM 3876 9293]

Walk due west uphill from Locality 8.1, past more exposures of mesobreccia and some north-east-trending exposures of rhyodacite. About 250 m west of the intrusive breccia–mesobreccia contact, mudstones and siltstones are encountered, for example at [NM 38760 92925]. Note that although locally folded and brecciated (e.g. at [NM 38735 92970]), bedding usually strikes 050–080 and dips at 50–80° to the north-west. Farther north, the slope steepens to form the cliffs in the southern wall of Nameless Corrie, so follow the contour and aim to walk below or along the base of these cliffs. Note that the Torridonian rocks change northwards from thin, silty, and dark grey beds (TCDL) to thicker, sandier, and pink-coloured beds (TCAM; e.g. at [NM 38630 93150]), but that bedding strike remains similar to that farther south (albeit dip direction locally switches to south-east – (Figure 62)).

The exact explanation for the occurrence of this zone of coherent Torridonian beds at its present structural position is open to some debate. The internal structure commonly appears chaotic which, together with the volcanosedimentary successions (mesobreccia, tuffs, and ignimbrites) above and below it, has led to the suggestion that it is a landslide or debris avalanche deposit (megabreccia) related to caldera subsidence (Errington, in Emeleus, 1997). Alternatively, this zone of Torridonian rocks may represent a deformed but still fairly coherent part of the caldera floor, which has been faulted over the underlying volcanosedimentary succession during some form of later resurgence.

## Locality 8.3 Nameless Corrie – an ignimbrite vent system [NM 3828 9346]

From the base of the cliffs in the south-east wall of Nameless Corrie, contour north-west around and into the corrie until a contact between coherent Torridonian rocks and rhyodacite is found near a sharp bend in the corrie stream ([NM 38275 93460]; Locality 8.3a). Note on the way that bedding in the pinkish sandstones swings to a consistent north-north-west strike with a moderate east or north-east dip. On the south-west side of the stream, different facies of rhyodacite are visible inside a basaltic margin that chills very sharply against sandstone (Figure 66). The other contact of the 10–35 cm-thick basaltic zone is unchilled and locally quite undulose against a massive, white-weathering rhyodacite that contains several lobate mafic inclusions, and has rare narrow protrusions into the basaltic zone. These features show a liquid-liquid relationship between the basalt and rhyodacite, both of which were emplaced within a very close space of time to form a composite intrusion. About a metre north from the basalt–sandstone contact is a sharp transition from white-weathering rhyodacite to a darker and smoother weathering rhyodacite (also mafic inclusion-bearing – (Figure 66)). Just a few metres farther north of this latter transition, the dark rhyodacite displays a steep fiamme-like foliation that generally dips parallel to the outer basalt–sandstone contact. Around 150 m upslope to the west [NM 38148 93442] (Locality 8.3b) and about 10 m north of the contact with the Torridonian, another zone of the 'white-weathering', mafic inclusion-bearing rhyodacite facies occurs in sharp contact with, but north of, the dark, strongly-foliated rhyodacite facies. There thus seems to have been multiple emplacement episodes of the different facies in this intrusive rhyodacite body. At [NM 38285 93712] (Locality 8.3c), a 50–90 cm-wide linear zone of breccia runs diagonally across a vertical rhyodacite face. The breccia is composed of sandstone and rhyodacite clasts of up to 8 cm diameter in a rhyodacite matrix, and displays a somewhat diffuse and slightly irregular contact to the host rhyodacite. This breccia zone is very similar to many other 'linear' breccia zones found within the rhyodacite of Nameless Corrie; such zones are usually concordant with the steep to vertical rhyodacite foliation, and some are graded (e.g. at [NM 3886 9338]). Both breccia zones and fiamme foliation are sharply folded in some places; abrupt swings of up to 90° are seen in their strike directions, as at [NM 38459 93625]. At many points away from the liquid-liquid outer contact, e.g. [NM 38285 93712], the rhyodacite fiamme are chunky or lumpy in shape (very low width/length aspect ratios). Together with the concordant and locally graded breccia zones, such rhyodacite, of which there is much within the central part of Nameless Corrie, is thus lithologically more akin to moderately welded ignimbrite. This combination of an intrusive marginal facies and a more-fragmental, possibly extrusive interior facies, both of which dip steeply and discordantly to surrounding rocks (cf. Localities 8.5 and 8.9), may represent a feeder and eruptive vent system (Figure 67 – cf. intrusive rhyodacites of the Northern Marginal Zone [Emeleus, 1997]).

A short distance north-east of the 'linear' breccia zone, metre-size patches of mesobreccia (lacking a rhyodacite component, e.g. at [NM 38460 93556]) appear wholly enclosed in rhyodacite, and are possibly large xenoliths. Around 60 m east of the 'linear' breccia zone and 60 m north of the corrie stream, the composite intrusive outer rhyodacite contact is again found adjacent to mesobreccia and Torridonian rocks. At this location [NM 38455 93551] (Locality 8.3d), an undeformed basaltic marginal zone to the rhyodacite truncates and very sharply chills against tightly folded and hornfelsed siltstone (TCDL), proving that rhyodacite intrusion here post-dates the folding of the Torridonian. The fold (antiform) in TCDL plunges steeply west and its hinge zone is brecciated. Other evidence of folding in the Torridonian rocks is found a few tens of metres to the south-east, where a series of S-folds is seen in steeply dipping, heavily crushed and brecciated, baked siltstone (TCDL). On the way down to this point, note that the Torridonian rocks generally maintain a north-north-west strike and dip east, but gradually fine downslope to comprise laminated siltstones and mudstones (TCDL). The somewhat enigmatic area of Torridonian rocks on the northern flank of Sgurr nan Gillean and the south side of Nameless Corrie thus comprises a largely undisrupted succession (TCAM–TCDL) that is apparently overturned, being inclined to the east, but younging to the west (Figure 62).

Notice also that the rocks of Nameless Corrie, in common with most of the pre-gabbro rocks exposed in Glen Dibidil, are cut by numerous basaltic dykes and inclined sheets, which are conspicuous on the glacially scoured rhyodacite slabs.

## Locality 8.4 Nameless Corrie – a hybrid contact rock ('needle-rock') [NM 3863 9349]

About 200 m east and north-east of Locality 8.3, a large area of pinkish-weathering hybrid rocks (locally granodioritic) is exposed on slabs and in low crags north of the stream running from Nameless Corrie, and in a knoll on the southern side (Figure 62), (Figure 63). The sharp contact between rhyodacite and hybrid rock is exposed along the corrie stream at about [NM 38625 93490] (*c*. 210 m OD). These hybrids are characterised by acicular amphibole (and orthopyroxene) and plagioclase. They are marginal to the gabbro of lower Glen Dibidil, with which they are found to be in sharp contact north of the stream (e.g. [NM 3902 9368]). The gabbro is the later intrusion. On emplacement, it reacted with rhyodacite to produce a hybridised, intermediate rock of the type commonly found elsewhere on Rum at contacts between gabbros and felsic rocks (Greenwood, 1987).

## Locality 8.5 Forgotten Corrie – tilted Torridonian basement, bedded mesobreccia, and extrusive vs. intrusive rhyodacite [NM 3851 9427]

From Locality 8.4 contour northwards along the rim of Nameless Corrie and skirt around the steep eastern flank of the ridge between Nameless and Forgotten corries at about 250 m OD. Climb up toward the mouth of Forgotten Corrie and pass typically south-east- to east-inclined Torridonian beds (TCDF and TCDL), until the stream flowing from the corrie is reached at about 350 m OD. Several tens of metres to the north-west, mesobreccia dominated by gritty sandstone (TCDF) clasts is exposed in crags that overlook the grassy slope down to the Dibidil River. At Locality 8.5 [NM 38505 94266], a few metres north of a contact with north-west-dipping sandstone, the mesobreccia contains a north-west-dipping (40–50°) lens of lithic tuff with rare accretionary lapilli. Around 150 m to the north-north-west are similarly north-west-dipping contacts between mesobreccia, a clast-aligned lithic tuff, and unchilled, fiamme-rich rhyodacite [NM 38485 94327]. The fiamme define a contact-parallel foliation, and become gradually less abundant about a metre above the basal contact. Two foliation-concordant and normally graded lithic tuff layers (or lenses), with sharp bases but diffuse tops to enclosing rhyodacite, are also visible here, a metre or two above the basal contact (similar to the south-west end of Meall Breac – Excursion 2).

In the steep north wall of the corrie, about 80 m to the south-west, there is a prominent, 15 m-wide, subvertical cleft occupied by a brown-weathering dyke. Along the foot of the corrie wall and a few metres north-east of this dyke is a small exposure of rhyodacite with a thin sub-vertical lithic trail that passes up through undisturbed north-west-dipping fiamme. This feature strongly resembles a lithic lapilli degassing pipe ('fossil fumarole') characteristic of high-temperature ignimbrites. The graded lithic tuff lenses, the basal contact relationship to underlying bedded mesobreccia, and the lithic trail are strong evidence for an extrusive origin of the rhyodacite at this location.

In contrast, rhyodacite forming the cliffs of the corrie wall has a strong foliation that dips steeply (60–75°) to the east-south-east. This foliation can be tracked along strike for *c*. 150 m to the south-west and across the stream, where the rhyodacite displays a strongly chilled, south-east-dipping contact against mesobreccia [NM 3832 9420]. Hereabouts, vertical 'fluidised-looking' zones occur in the mesobreccia just above the contact (Figure 68). These structures are possibly generated by gas flow from intruding rhyodacite through poorly consolidated mesobreccia. In plan view, this intrusive rhyodacite body truncates the bedded mesobreccias and northwest-dipping extrusive rhyodacites that crop out to the north-east. Along strike to the south-west, the light-grey intrusive rhyodacite is sharply chilled against the dark-grey Torridonian sandstone in the southern wall of Forgotten Corrie, and this east-south-east-dipping contact continues through Nameless Corrie to Sgurr nan Gillean (Figure 62), (Figure 63).

## Locality 8.6 Upper Glen Dibidil – Hughes' back-veining contact between the ultrabasic and felsic rocks (rhyodacites) [NM 3821 9453]

This locality is a classic in the history of geological investigations on Rum. Walk north-east out of Forgotten Corrie and, while maintaining as much altitude as possible, contour north-west (at *c*. 330 m OD), between the steep, lowermost crags on Ainshval and the tops of the grassy slopes down to the Dibidil River. The break of slope approximately delineates the boundary between easily weathered peridotite and gabbro of the Eastern Layered Intrusion and tough, thermally altered rhyodacite, mesobreccia and Torridonian rocks. After some 300–400 m, at *c*. [NM 3821 9453], the slabs expose a breccia consisting of angular to sub-angular blocks of yellow-brown-weathering peridotite and other mafic lithologies in a finely crystalline, felsic matrix (Figure 69). Early geologists working on Rum interpreted this as evidence that the adjacent rhyodacite (and other felsic rocks) intruded, and therefore post-dated, the gabbros and peridotites of the Layered Centre (e.g. Harker, 1908). However, Hughes (1960a) subsequently demonstrated that melting and mobilisation (rheomorphism) of earlier silicic rocks, of relatively low melting point, by later intensely hot peridotite and gabbro intrusions could generate a 'backveining' felsic matrix that locally enclosed chunks of the peridotite and gabbro. Similar backveining contacts were subsequently recognised elsewhere on the island (e.g. Meall Breac, Cnapan Breaca, Excursion 2; Dunham, 1964).

## Locality 8.7 Bealach an Fhuarain – views of Glen Dibidil, Trollaval, Fiachanis and Harris [NM 3790 9487]

Continue north-west to Bealach an Fhuarain (*c*. 515 m OD; [NM 3790 9487]), the col between Ainshval and Trollaval. From here, there are good views south, down the length of the glacial Glen Dibidil, and east across the valley to the layered rocks of Askival. To the north, the layering of peridotite and gabbro is prominent in the south-facing cliffs of Trollaval. To the west through the col is a fine view over Fiachanis, Loch Fiachanis, and Harris. On a clear day the lighthouse on the pitchstone reef of Oigh-sgeir (the reef is probably a continuation of the Sgurr of Eigg pitchstone flow) and some of the Outer Hebridean islands are visible on the horizon.

**Options**:

From the head of Glen Dibidil there is the option to return to the Dibidil Bothy or to Kinloch Castle. Return to Kinloch can be made either via Glen Dibidil and the Dibidil path, or through Bealach an Oir [NM 386 953], around the head of Atlantic corrie to Bealach Bairc-mheall [NM 3866 9705], and down Coire Dubh (this option should not be selected if the weather is in any way bad). The journey time for either route is around 3–31/2 hours (perhaps shorter for the second option).

With the second option, contour north-east from Bealach an Oir at about 450 m OD for *c*. 800 m across the steep, grassy and scree-covered slopes on the north-west side of Askival. Extreme care must be exercised, since some of the scree is unstable and some partly obscured by vegetation. Then climb to nearly 550 m OD to a point about 150 m west-north-west of the col between Askival and Hallival (i.e. to *c*. [NM 3920 9600]). Continue north on a broad shelf for *c*. 500 m, keeping at 550 m OD, then walk north-north-west and north-west down gentle slopes to Bealach Bairc-mheall and the head of Coire Dubh. From here, it is an easy descent to the corrie floor and down to Kinloch.

For those continuing the excursion route from Bealach an Fhuarain, the last three localities on this route provide further insights into the volcano-tectonic evolution of the Southern Mountains (and great views), but should only be visited in

good weather and with sufficient daylight remaining. The night would normally be spent at the Dibidil bothy.

## Locality 8.8 Sandy Corrie – a rare caldera floor through volcanosedimentary infill succession [NM 3743 9404]

From Bealach an Fhuarain, walk westward for about 500 m down into the valley above Fiachanis, past exposures of gabbro. Once safely below the steep cliffs on the north-west flank of Ainshval (at *c*. [NM 373 948]), continue in a south-west direction, contouring at about 350–400 m OD around to the base of the cliffs on the south-west side of the mountain and into Sandy Corrie. On the way, note the change from gabbro to Lewisian gneiss. Climb towards the south-facing cliffs of the north wall of the corrie. In and around these cliffs, at about 500 m OD, is the basal unconformity between the Torridonian rocks and underlying gneiss, e.g. [NM 3743 9404]. A classic basal conglomerate of gneiss cobbles and boulders is overlain by very coarse, gritty, and often cross-bedded sandstones (TCDF), which dip at about 40–50° to the east. Conformably overlying the TCDF beds and a zone of transitional facies (Nicholson, 1992), are laminated siltstones and mudstones of the Laimhrig Shale Member [NM 37505, 94083]. Note that relative to the gentle and regional north-west dip of the succession outside the Main Ring Fault, the Torridonian rocks and gneisses exposed in Sandy Corrie have been outwardly tilted and uplifted by at least 1.5 km.

The basement TCDL rocks are frequently brecciated farther upslope, but the breccia is usually clast supported and most clasts remain orientated parallel to the bedding seen below. These brecciated rocks are sharply overlain by a reverse-graded and strongly clast-aligned sandstone at [NM 37637 94009]. This sandstone contains clasts of sandstone and siltstone, accretionary lapilli and blocky plagioclase crystals, and it grades up into rhyodacite with abundant fine fiamme and shards. Just upslope, across a small gap in exposure, are more exposures of rhyodacite; at the base of one of these is a zone of lithic tuff with gradational contacts to the overlying rhyodacite. This 20 m-thick rhyodacite body is sheet-like in form; its contacts and the fiamme within it dip at 20–35° to the east-south-east. The fiamme comprise light- and dark-weathering types, with a zoned distribution (dark types are concentrated toward the base). Towards the top of the sheet some fiamme are up to 1 m long and 15 cm thick. A generally matrix-supported mesobreccia of predominantly sandstone clasts (TCDF?) overlies this rhyodacite sheet, and is markedly different to the brecciated TCDL below. Above the 30 m-thick mesobreccia is green sandstone, which is in sharp contact with more rhyodacite upslope. The fiamme in this upper rhyodacite sheet are orientated parallel to those in the lower sheet and persist until the top of the ridge.

The north wall of Sandy Corrie thus contains uplifted and tilted rocks of the lower parts of the regional stratigraphical succession (caldera floor), upon which lie sedimentary and pyroclastic rocks (caldera infill). Like at Beinn nan Stac, there seem to be two (possibly correlatable) ignimbrites preserved (Figure 70). The sequence seen on the northern side of Sandy Corrie occurs on the southern side also, where it is picked out by featuring. Caldera floor through infill successions, as seen in such a relatively undisturbed state on Rum, are rarely found in the geological record.

## Locality 8.9 Headwall of Nameless Corrie – intrusive rhyodacite meets the extrusive rhyodacite sheet of Sgurr nan Gillean peak [NM 3783 9330]

Climb south-east up from Sandy Corrie to the col in the ridge above [NM 3780 9384]. Walk southward along the ridge to the south side of the mid-ridge peak, Sgurr nan Goibhrean (754 m OD on OS map; Goat Mountain on Hughes' 1960a map) from which extends the spur to Leac a'Chaisteil. From here, at [NM 37760 93330], an inclined ledge runs south-east down into Nameless Corrie. Less than 100 m from the ridge and along this ledge, at [NM 37831 93297], is the base of the large sheet-like mass of rhyodacite that caps Sgurr nan Gillean. The sheet rests on a thin veneer of mesobreccia (gneiss and feldspathic sandstone clasts) that overlies east-inclined pinkish sandstones (TCAM). The lower metre or so of the rhyodacite sheet displays alternating layers of fine tuff and crystal tuffs with wavy and planar bedding structures – probably surge deposits. Above these bedded tuffs is a gradational contact to fiamme-rich rhyodacite, the foliation in which is concordant to the layered tuffs below.

About 35 m north-west and along its strike, the base contact abruptly disappears into more-or-less massive rhyodacite. The intrusive margin of the Nameless Corrie rhyodacite mass is traceable from Locality 8.3 to just a few metres below this point (Figure 62), (Figure 63). Thus, although its characteristic basaltic margin disappears here, the steeply-foliated

intrusive rhyodacite apparently truncates the extrusive rhyodacite sheet (or at least its base). This relationship may be explained by initial intrusion into the pre-caldera basement of a composite basalt–rhyodacite body (dyke), which subsequently fragmented and erupted once near the surface. This eruption feeder system may have supplied the material deposited as the ignimbrite sheet that caps Sgurr nan Gillean; if a solidified ignimbrite sheet existed prior to composite intrusion, one might expect to see a basaltic margin against its base. Continuous and/or subsequent through flow and eruptions of rhyodacite (cf. Localities 7.2, 7.3, 7.8) could then have produced the apparently discordant relationship between the lower parts of the caldera fill and the vent system (Figure 67).

Syn-eruptive faulting may also complicate these field relationships. The similarly inclined TCDF/TCDL boundaries east of Forgotten Corrie and on the other side of the ridge in Sandy Corrie are vertically offset by 600–1000 m. Though perhaps also related to folding of the basement, this apparent discontinuity may be due to a fault between the corries. A candidate fault surface is the sharp, east- to south-east-inclined surface of the intrusive rhyodacite margin seen earlier in Nameless and Forgotten corries (visible in the corrie wall opposite – (Figure 62), (Figure 63). If so, this fault downthrows to the west, has a reverse sense of displacement, and is orientated concentric with the Main Ring Fault system. Such reverse ring faults, though rarely seen in the field, have long been invoked to solve the 'room problem' of caldera subsidence (cf. Anderson, 1936), and have been regarded as potential conduits for syn-caldera magma transport and eruption.

## Locality 8.10 Peak of Sgurr nan Gillean – views of the Hebrides and Western Scottish Highlands [NM 3802 9303]

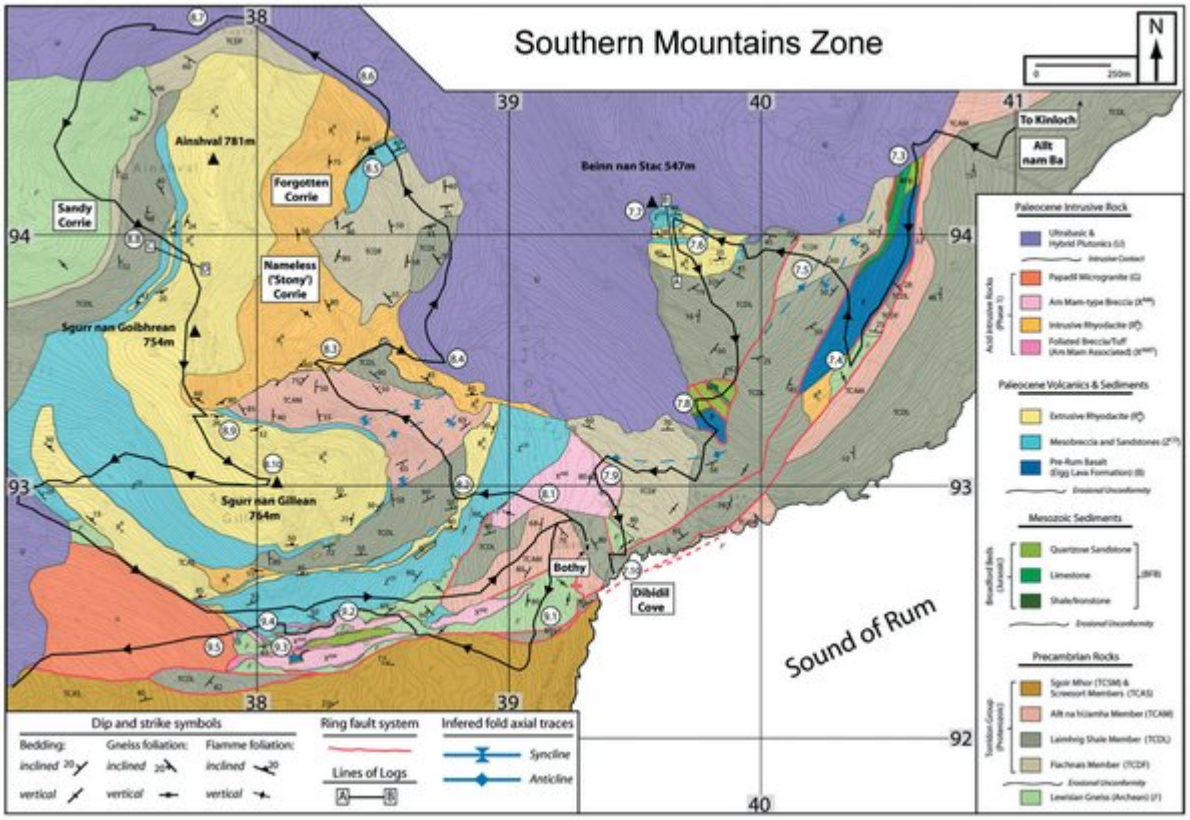
On a clear day, Sgurr nan Gillean provides a superb 360° panorama across Rum, the Inner and Outer Hebrides, and the Western Scottish Highlands. Winding northward to Ainshval is the steep stony ridge, formed as glaciers carved out deep corries. Just behind Ainshval and to the north-east are the terraces of Trollaval, Askival and Hallival. The serrated peaks of the Skye Cuillin loom in the distance beyond Rum's north shore. At the time of emplacement, basic and ultrabasic layers stretched across the north-east flank of Glen Dibidil to meet their arched roof at Beinn nan Stac, which is composed of intensely-deformed country rocks and violently emplaced ignimbrites and breccias. The geologically ancient Western Highlands form the jagged horizon that extends north-east to south-east. Just south-east of Rum lie the lavas of Eigg and Muck, and beyond these to the south-south-east are the remnant Palaeogene central volcanoes of Ardnamurchan and Mull. The isles of Coll and Tiree, composed of Archaean Lewisian gneisses, appear to the south-west. To the west and north-west, the Outer Hebridean isles of Barra and South Uist hug the horizon across the Sea of the Hebrides, the waves of which crash into the high cliffs of Rum's Western Granite, just beyond Harris.

Descend from Sgurr nan Gillean westward down the scree slopes. After about a kilometre, you should have rounded the steep cliffs in Sgurr nan Gillean's south-west flank. There are then two options to return to Dibidil.

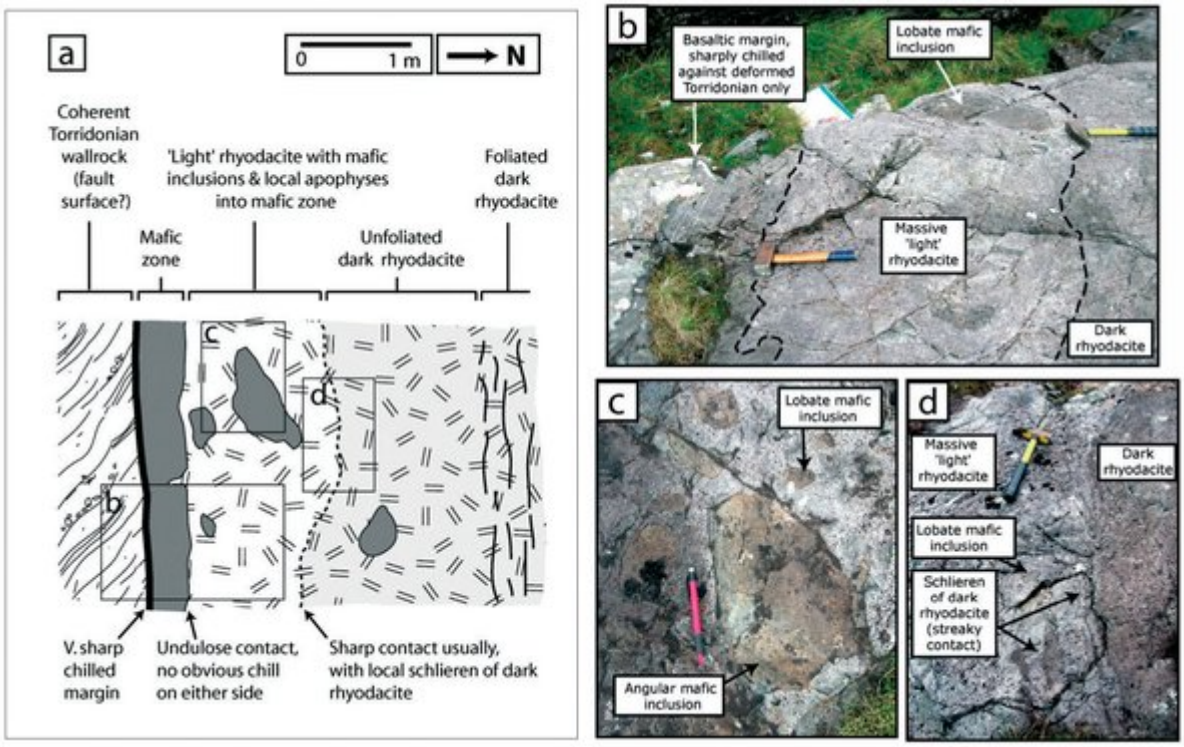
**Options**:

1. Shorter, but slightly trickier. Contour south-east around the base of the steep cliffs and above the grassy slopes that overlook Papadil. After about 1.5 km, you should reach a small plateau at around 460 m elevation on the south side of Sgurr nan Gillean [NM 38000 92450]. From the plateau, it is fairly straightforward to drop into the corrie in the south side of Sgurr nan Gillean, and then you can pick your way down the grassy slopes for another kilometre eastward until the Papadil path is reached just above the Dibidil bothy.
2. Longer, but slightly easier. Drop down to Papadil (follow the streams), and then take the path back to Dibidil. This route is just less than 5 km in length, but is better marked and has a gentler descent to Dibidil.

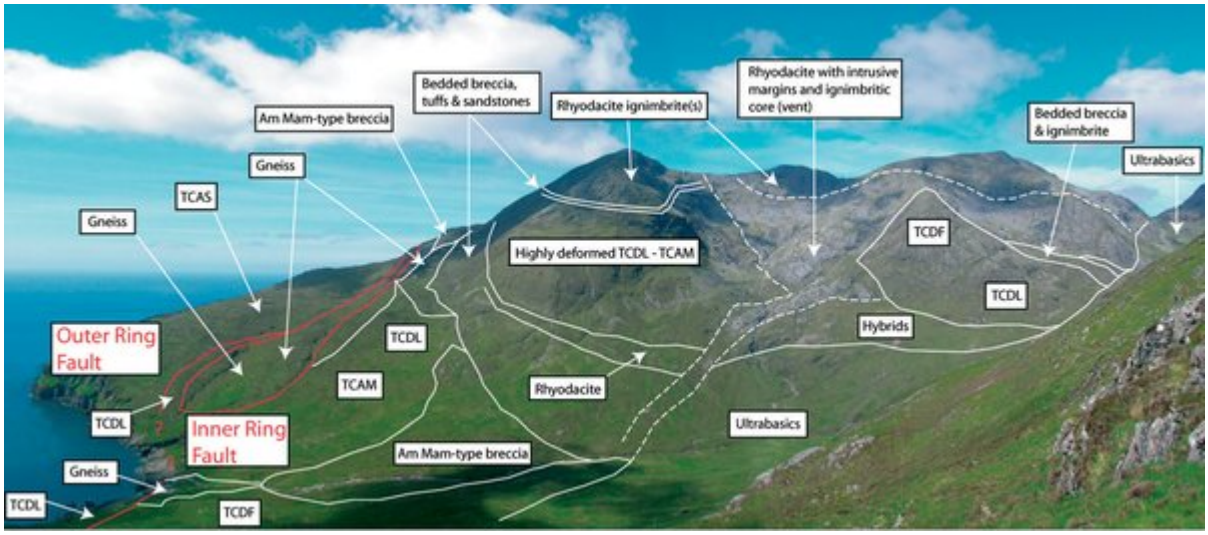
**References**




*(Figure 62) Geological map of the Southern Mountains Zone. Based on SNH 1:20,000 solid geology map (© SNH), but extensively revised by E. Holohan and M. Errington. Excursions 7, 8 and part of 9. For localities 7.1 and 7.2 see (Figure 26), and for all of Excursion 9 see (Figure 71) (Key) .*



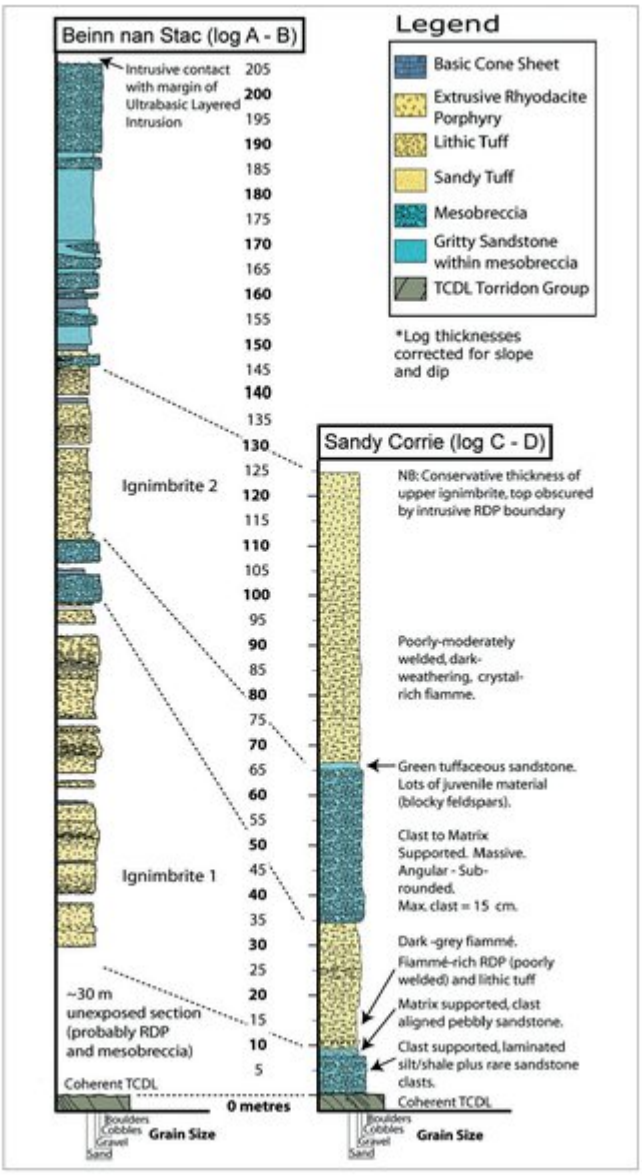

*(Figure 66) Intrusive rhyodacite contacts and internal facies variations, Nameless Corrie, Dibidil. a. Schematic sketch of facies variations within the intrusive rhyodacite as one moves away from the southern contact. b. Photo of contacts in (a). c. Close up of mafic inclusions in the 'light' rhyodacite facies. Many inclusions are angular, which may reflect reworking of conduit lining, and some inclusions contain blocky 'rhyodacite' plagioclase crystals. d. Contact between light and dark rhyodacite facies, which is locally streaky with schlieren of dark rhyodacite in light rhyodacite.*



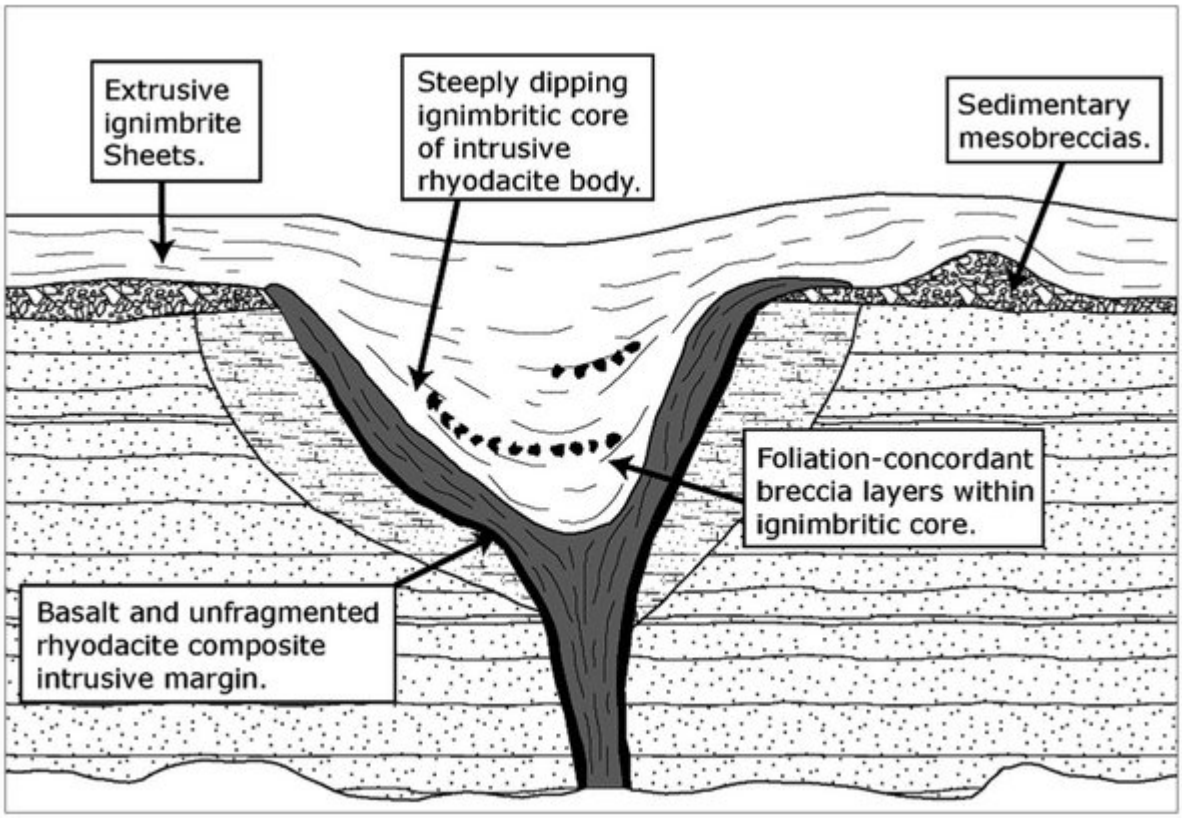

*(Figure 63) Panorama and geological outline of the lower south-west side of Glen Dibidil and the Sgurr nan Gillean–Ainshval Ridge, viewed from the south-east side of Beinn nan Stac (cf. (Figure 64)).*


*(Figure 68) Subvertical foliated fluidised-looking zone (gas escape/hydromagmatic) in mesobreccia, next to sharp south-dipping contact with intrusive rhyodacite. Locality 8.5, Forgotten Corrie. Scale: hammer shaft c.35 cm.*


*(Figure 69) Backveined margins of the Eastern Layered Intrusion, north-east slopes of Ainshval (Locality 8.6). Remobilised felsic material (white), derived from adjoining rhyodacite, encloses blocks of brown-weathering peridotite and other mafic lithologies. The ultrabasic layers of Trollaval loom in the background right. Upper Glen Dibidil, near Bealac an Fhuarain. Scale: hammer shaft c.35 cm.*




*(Figure 70) Schematic log of caldera-fill ignimbrite successions on Beinn nan Stac and in Sandy Corrie (see (Figure 62) for log lines).*




*(Figure 67) Schematic sketch showing the relationship of the ignimbrite feeder system to the caldera infill. (Adapted from Freundt et al., 2000.)*