

Moine geology of Loch a' Bhraoin, Braemore and Loch Broom - an excursion

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By Simon Kelley

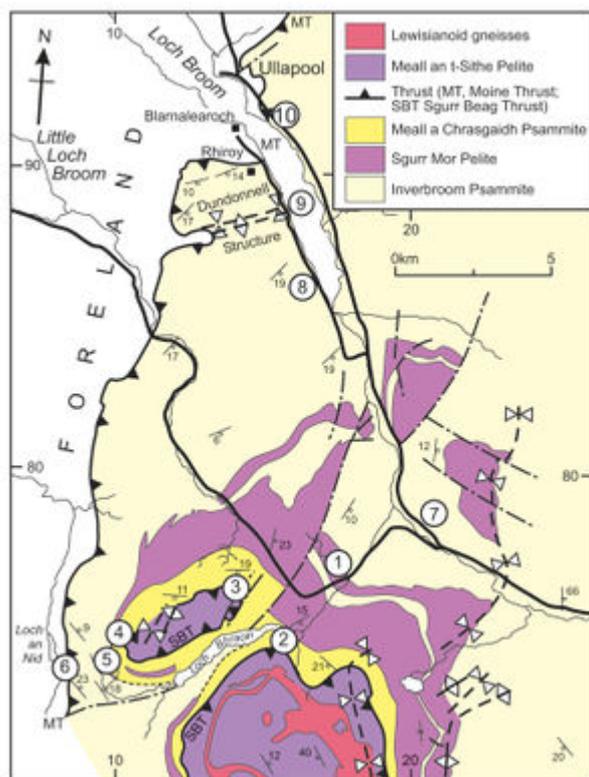


Fig. 9.1 Geology of the Moine rocks between the Fannich mountains and Ullapool, showing the localities to be visited.

Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom is composed of the following articles:

- Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom
- [The Sgurr Beag Thrust section. Localities 9.1 - 9.2](#)
- [Option A. Meall an t Sithe. Localities 9.3 - 9.6](#)
- [Option B. Corrieshalloch Gorge and Loch Broom. Localities 9.7 - 9.10](#)

Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom

Purpose: A traverse across the Moine from a major internal ductile thrust, the Sgurr Beag Thrust, to the margin of the orogen, the Moine Thrust Zone.

<i>Aspects covered:</i>	The increase of deformation into the Sgurr Beag Thrust, post-thrusting deformation and formation of the Moine mylonites, shear fabrics in psammites and pelites, the Moine Thrust plane.
<i>Useful addresses:</i>	The Tourist Information Office, Ullapool; Inverbroom Estate (Mr Cameron, Home Farm, Inverbroom [Tel: 01854 655252]).
<i>Maps:</i>	OS: 1:25,000 sheets 435 An Teallach & Slioch, 436 Beinn Dearg & Loch Fannich; BGS: 1:63,360 sheets 92 Inverbroom, 101E Ullapool.
<i>Types of terrain:</i>	The Sgurr Beag Thrust traverse has easy walking on paths and stream sides. The traverse up to the Moine Thrust has: Option A - open country, climbing up to 500m; and Option B - easy walking on seashore and roadside.
<i>Distance and time:</i>	Option A - car not used after Locality 9.1, on foot 19km. A full day (8 hours). Option B - by car, 20km (1 hour), on foot 9.5km (4 hours).
<i>Short itinerary:</i>	The Sgurr Beag Thrust traverse (Locality 9.2) is a complete excursion on its own and can be covered in about 3.5 hours. The Moine Thrust can be covered briefly by a quick visit to the Corrieshalloch Gorge (Locality 9.7) and the lochside exposures (Locality 9.9), all of which can be seen in 3-4 hours.

- Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom
- [The Sgurr Beag Thrust section](#)
- [Option A. Meall an t Sithe](#)
- [Option B. Corrieshalloch Gorge and Loch Broom](#)

The first section of this excursion consists of a traverse from Morar Group psammites and pelites across the Sgurr Beag Thrust into Glenfinnan Group migmatites and Lewisianoid basement gneisses. The second part, a traverse into the Moine Thrust Zone, can be approached in two ways. *Option A* (Fig.9.1 and Localities 9.1-9.7) is a walk along the ridge from Meall an t-Sithe to Creag Rainich, affording an excellent opportunity to observe the relationship between the Sgurr Beag Thrust and the Moine Thrust at their closest approach. However, this option involves a 500 m ascent and the area does not afford much shelter in bad weather. Further, the ground is used for deer stalking from August to February. *Option B* (([Fig. 9.1](#)) and Localities 9.8-9.10) illustrates the increasing breakdown of earlier peak metamorphic fabrics in psammites and pelites of the Morar Group as the Moine Thrust Zone is approached. Viewing of the low-level roadside and shoreline exposures is not restricted by weather or deer stalking.

The apparently simple stratigraphy of Moine rocks in the Loch a' Bhraoin, Braemore and Loch Broom area is misleading. At the base of the succession, the Inverbroom Psammite ([Fig. 9.1](#)) varies from 2.7km thick to less than 400m where it is cut out against the Moine Thrust. Common sedimentary structures indicate that it is 'right way up' throughout the area. The Sgurr Mor Pelite ([Fig. 9.1](#)) lies above the Inverbroom Psammite (it also exhibits sedimentary structures indicating 'right way up') and ranges from 950m to less than 20m thick at Meall Dubh where it interfingers with the Inverbroom Psammite. This pelite is important for correlations since it contains stratabound amphibolites (Winchester, 1976). The Sgurr Mor Pelite passes upward into the Meall a' Chrasgaidh Psammite through a sedimentary transition, and this psammite occupies a belt 100m-130m wide adjacent to the Sgurr Beag Thrust. No sedimentary structures have been preserved in this highly deformed psammite.

All the units below the Sgurr Beag Thrust are part of the Morar Group. However, direct correlations between these units and those of the type area in Morar, over 150km to the south, are tenuous because units such as the Sgurr Mor Pelite are clearly laterally discontinuous. All Morar Group rocks in the area contain calc-silicate pods that have been used to determine metamorphic grade in the absence of aluminosilicate indicator minerals (Winchester, 1974).

Lying above the Sgurr Beag Thrust, the Meall an t-Sithe Pelite is the only representative of the Glenfinnan Group ([Fig. 9.1](#)). This coarse-grained migmatitic pelite has clearly undergone a very different tectono-metamorphic history to rock types below the thrust. The Meall an t-Sithe Pelite contains amphibolites of tholeiitic origin (Winchester, 1976), but no calc-silicate pods nor sedimentary structures.

Lewisianoid gneisses lie between two lithologically and chemically identical units of the Meall an t-Sithe Pelite ([Fig. 9.1](#)). The basement gneisses are isoclinally folded with the Glenfinnan Group migmatites. Though only a 100m-150m-wide outcrop of the Lewisianoid gneisses is present, they are distinct from the Moine rocks, consisting of mainly siliceous acidic and hornblendic gneisses with minor calcareous, epidotic and pyroxenic horizons.

References

At all times follow: [The Scottish Access Code](#) and [Code of conduct for geological field work](#)

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