

Moine geology of Loch a' Bhraoin, Braemore and Loch Broom. Option A. Meall an t Sithe - an excursion

From Earthwise

[Jump to navigation](#) [Jump to search](#)

From: Strachan, Rob, Friend, Clark, Alsop, Ian, Miller, Suzanne (Editors). [A Geological excursion guide to the Moine geology of the Northern Highlands of Scotland.](#): Edinburgh Geological Society, Glasgow Geological Society in association with NMS Enterprises, 2010.

By Simon Kelley

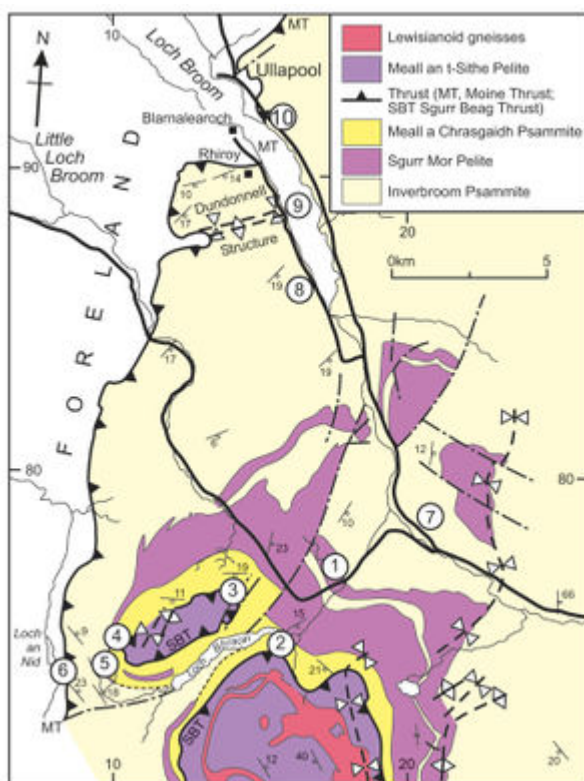


Fig. 9.1 Geology of the Moine rocks between the Fannich mountains and Ullapool, showing the localities to be visited.

□

Contents

- [1 Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom is composed of the following articles:](#)
- [2 Option A. Meall an t-Sithe \[NH 141 765\]](#)
 - [2.1 Locality 9.3 Meall an t-Sithe \[NH 141 765\]](#)
 - [2.2 Locality 9.4 Meall Dubh \[NH 103 748\]](#)
 - [2.3 Locality 9.5 Allt Teanga nan Caiseachan \[NH 090 746\] to \[NH 093 736\]](#)
 - [2.4 Locality 9.6 Loch an Nid \[NH 085 733\]](#)

- [3 References](#)

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](#)

Option A. Meall an t-Sithe [NH 141 765]

From the bridge, proceed NW to the summit of Meall an t-Sithe (2 km distance, 350m climb).

Locality 9.3 Meall an t-Sithe [NH 141 765]

Meall an t-Sithe ([Fig. 9.1](#)). An exposure of the Sgurr Beag Thrust.

The contact between the Meall an t-Sithe Pelite (Glenfinnan Group) and the Meall a' Chrasgaidh Psammite (Morar Group) is exposed just below the summit to the north ([Fig. 9.1](#)). Many intrafolial folds of thrust-generation age (D_2) are exposed in the Meall a' Chrasgaidh Psammite below the thrust to the NE. A suite of pegmatites characterized by large K-feldspars (10-50mm) and post-dating the thrust movements, occur sporadically in all rock types, exhibiting low levels of post-intrusion deformation. This suite becomes highly deformed in the structurally underlying belt of mylonites associated with the Moine Thrust Zone.

Follow the ridge westward for about 3km to the summit of Meall Dubh at [NH 103 748] ([Fig. 9.1](#)). Between Meall an t-Sithe and Meall Dubh, psammities that were intensely deformed during displacements on the overlying ductile thrust are increasingly affected by cataclastic bands nearly parallel to the foliation, and the post-thrusting pegmatites become folded or exhibit boudinage. Close to tight D_3 folds also affect the thrust-related foliation in this area.

Locality 9.4 Meall Dubh [NH 103 748]

Meall Dubh ([Fig. 9.1](#)). Closest approach of the Sgurr Beag Thrust and the Moine Thrust in the Northern Highlands.

The outcrop of the Sgurr Beag Thrust on the summit of Meall Dubh is 2km east of the (brittle) Moine Thrust plane, is only 400m directly above it and within the zone of deformation associated with the thrust zone.

The Meall a' Chrasgaidh psammite in this area ([Fig. 9.1](#)) represents an intermediate stage between the coarse, annealed psammities forming the Sgurr Beag Thrust foliation and the fine-grained mylonites of the Moine Thrust Zone. The psammities exhibit kink folds, bands of cataclasite and zones of breccia up to 50cm thick. The foliation of the pelitic migmatites above the thrust is disrupted but not destroyed by the mylonitization. Shear bands indicating a top-to-the-WNW sense of overthrusting are found in both migmatites and pelitic horizons of the Meall a' Chrasgaidh Psammite. A detour to the summit of Creag Rainich affords a superb view of the whole Moine Thrust Belt. Note the juxtaposition of the foreland Lewisian gneisses, Lewisian slices in the thrust zone, and the Lewisianoid basement inlier of Fannich. These were originally at least 150km apart and have been brought into juxtaposition having undergone very different histories.

Descend SW, from the summit of Creag Rainich to the westernmost burn leading into Allt Teanga nan Caiseachan ([Fig. 9.1](#)).

Locality 9.5 Allt Teanga nan Caiseachan [NH 090 746] to [NH 093 736]

Allt Teanga nan Caiseachan ([Fig. 9.1](#)). Break-up of the Sgurr Beag Thrust fabric during mylonitization.

Exposures of the Meall a' Chrasgaidh Psammite are crossed in the upper part of the stream by shear bands up to 10cm across, forming lenses or pods of undeformed, pre-mylonitic psammite up to 3m long. The movement sense of the shear bands indicates displacement towards the WNW. In the centres of the shear bands, a fine, thinly-banded mylonitic foliation and stretching lineation are parallel to the same features in the Moine mylonites (i.e. shallowly-dipping foliation with the lineation trending towards 110°). In the unaffected rocks, the foliation still carries the characteristics of the coarse-grained Sgurr Beag Thrust fabric (stretching lineation trending towards 135°).

About 1km downstream, as another stream joins from the east, leave Allt Teanga nan Caiseachan and contour round to the west towards the Moine Thrust. The first exposures of Moine mylonites form a small 'quarry-like' area with a stream running down the centre [NH 085 733], as Loch an Nid comes into view.

Locality 9.6 Loch an Nid [NH 085 733]

Loch an Nid ([Fig. 9.1](#)). The Moine Thrust.

The Moine Thrust plane passes between finely banded psammitic Moine mylonites, with breccia zones and kink bands and coarse-grained Lewisian amphibolites cut by late shear zones. The Moine mylonites in the slopes beneath the cliffs exhibit an intense mylonitic foliation, though low strain augen of less deformed Moine rocks up to 50m long remain, within 100m of the thrust plane. The thrust itself cuts through the Lewisian-Torridonian unconformity and thus the Lewisian gneisses below the thrust give way to Torridonian sandstones further north. Pods of Cambrian quartzite strung out along the thrust plane form prominent knolls on the hillside [NH 085 739] and [NH 084 746]. These probably represent remnants of a horst block eroded from a ramp at a deeper level in the thrust zone.

Return to the farmhouse and the A832 by the path along the northern shore of Loch a' Bhraoin.

References

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

Retrieved from

http://earthwise.bgs.ac.uk/index.php?title=Moine_geology_of_Loch_a'_Bhraoin,_Braemore_and_Loch_Broom._Option_A._Meall_an_t_Sithe_-_an_excursion&oldid=33579

Category:

- [2. Northern Highlands](#)

Navigation menu

Personal tools

- Not logged in
- [Talk](#)
- [Contributions](#)
- [Log in](#)
- [Request account](#)

Namespaces

- [Page](#)
- [Discussion](#)

Variants

Views

- [Read](#)
- [Edit](#)
- [View history](#)
- [PDF Export](#)

More

Search

Navigation

- [Main page](#)
- [Recent changes](#)
- [Random page](#)
- [Help about MediaWiki](#)

Tools

- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)

- [Cite this page](#)
- [Browse properties](#)

• This page was last modified on 24 December 2017, at 16:31.

- [Privacy policy](#)
- [About Earthwise](#)
- [Disclaimers](#)

