# Moine geology of the Northern Highlands of Scotland

# Contents

### **Excursions**

**Excursion 1 Ross of Mull** 

**Excursion 2 Fort William to Glenfinnan** 

**Excursion 3 Glenfinnan to Morar** 

**Excursion 4 Invergarry to Kinloch Hourn** 

**Excursion 5 Glen Moriston and Glen Shiel** 

**Excursion 6 West Glenelg and Loch Hourn** 

**Excursion 7 East Glenelg and Loch Duich** 

**Excursion 8 Glen Strathfarrar and Loch Monar** 

Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom

**Excursion 10 South and Central Sutherland** 

**Excursion 11 The Moine Thrust Belt at Loch Eriboll** 

**Excursion 12 Durness and Faraid Head** 

**Excursion 13 North Sutherland** 

**Excursion 14 Great Glen** 

### **Full contents**

Title page and preliminaries

Summary of the Moine geology of the Northern Highlands of Scotland

**Excursion 1 Ross of Mull** 

Itinerary A. Eastern limb of the Assapol Synform (1)

Locality 1.1 Viewpoint of the regional and local geology.

Locality 1.2 Upper Shiaba Psammite with cross bedding and heavy mineral bands

Locality 1.3 Shiaba Group lithologies; Tertiary intrusions and faulting.

Locality 1.4 Folds within the Lower Shiaba Psammite.

Locality 1.5  $F_2$  sheath folds within the Lower Shiaba Psammite.

Locality 1.6 Sedimentary and tectonic structures within the Upper Shiaba Psammite.

Locality 1.7 Upper Shiaba Psammite cut by Tertiary dolerite.

### Itinerary B. Eastern limb of the Assapol Synform (2)

Locality 1.8 Geological viewpoint.

Locality 1.9  $S_0/S_2$  relationships within the Ardalanish Striped and Banded Formation.

Locality 1.10 Scoor Pelitic Gneiss.

Locality 1.11  $\rm S_0/S_2$  relationships within the Scoor Pelitic Gneiss; Tertiary intrusion.

Locality 1.12 Top of the Lagan Mor Formation.

Locality 1.13 Transition from the Lagan Mor Formation into the Upper Shiaba Psammite.

Locality 1.14  $F_2/F_3$  relationships within the Ardalanish Striped and Banded Formation on the eastern limb of the  $F_3$  Assapol Synform.

# Itinerary C. Structure and lithologies within the Ardalanish Striped and Banded Formation, western linb of the Assapol Synform

Locality 1.15 Regional and contact metamorphism of the Assapol Group Moine.

Locality 1.16 Migmatitic fabrics and polyphase folds.

Locality 1.17 Garnetiferous amphibolites.

Locality 1.18 Relationships between amphibolites and host metasediments.

Locality 1.19 East verging  $F_3$  folds.

Locality 1.20 F<sub>3</sub> folds.

## Itinerary D. Western limb and core of the Assapol Synform

Locality 1.21 Hinge and eastern limb of F<sub>3</sub> antiform.

Locality 1.22 Discordant amphibolite and F<sub>2</sub>/F<sub>3</sub> structures.

Locality 1.23 Hinge zone of the F<sub>3</sub> Assapol Synform.

Locality 1.24 Contact metamorphic phenomena within the aureole of the Ross of Mull Granite. Distance is less than 1km, taking c.1 hour.

Locality 1.25 Margin of the Ross of Mull Granite. Distance from Ardalanish and return is c.4km, taking 3 hours.

# **Excursion 2 Fort William to Glenfinnan**

Locality 2.1 Loch Eil shore section. Loch Eil Psammite intruded by amphibolites.

Locality 2.2 Fassfern. Sedimentary structures within the Druim Fada Quartzite; microdiorite intrusions within the Loch Eil Psammite.

Locality 2.3 Loch Eil road section. Calc silicates in Loch Eil Psammite; late granite veins.

Locality 2.4 Kinlocheil. Psammites and hornblende schists of the Loch Eil Group; pelitic gneisses of the Glenfinnan Group.

Locality 2.5 Callop road section. Flat lying Ardgour Granite Gneiss with S<sub>2</sub> fabric and quartzofeldspathic lits; microdiorite sheet; D2 folds in flat belt.

Locality 2.6 Craigag road section. Amphibolites and ptygmatic folds in granitic gneiss.

Locality 2.7 Allt na Criche road section. Low strain zone in centre of granitic gneiss sheet.

Locality 2.8 Glenfinnan road section. Loch Quoich Line; minor intrusions; western margin of the granitic gneiss; steep belt.

Locality 2.9 Glenfinnan road section. Loch Eil Group psammites within the steep belt.

# **Excursion 3 Glenfinnan to Morar**

### High grade rocks of the 'vertical' belt

Locality 3.1 The Muidhe. Glenfinnan Group psammites, pelites and migmatites; pegmatites; microdiorite sheets.

Locality 3.2 The Loch Eilt Antiform eastern limb. Glenfinnan Group pelites; Morar Group psammites and pelites; Sgurr Beag Thrust Zone.

Locality 3.3 Morarian (= Knoydartian) pegmatites at Loch Eilt

Locality 3.4 The Glenshian Synform and the Sgurr Beag Thrust

### Western margin of the vertical belt and low grade rocks of the western 'flat' belt

Locality 3.5 The western limb of the Glenshian Synform

Locality 3.6 The Ardnish Synform

Locality 3.7 The Arnipol Slide Zone

Locality 3.8 The Upper Morar Psammite: Rhue peninsula

Locality 3.9 The Upper Morar Psammite: Morar Bay

### **Excursion 4 Invergarry to Kinloch Hourn**

### Loch Garry to Loch Quoich dam

Locality 4.1 Garry Quarry

Locality 4.2 'Coir' an t Seasgaich

Locality 4.3 Quoich dam spillway

Locality 4.4 Quoich Quarry

#### Loch Quoich shore section

Locality 4.5 Loch Quoich shore section

Locality 4.6 Quoich Bridge

Locality 4.8 Coire Shubh Beag
Locality 4.9 Kinloch Hourn to Skiary
Excursion 5 Glen Moriston and Glen Shiel
Glen Moriston
Locality 5.1 A887 road cutting.
Locality 5.2 A887 road cutting
Locality 5.3 Large quarry to the north of the Cluanie dam
Locality 5.4 Loch Cluanie shoreline
Glen Sheil
Locality 5.5 Glen Shiel
Locality 5.6 Glen Shiel
Excursion 6 West Glenelg and Loch Hourn
West Glenelg
Locality 6.1 North Glenelg Bay
Locality 6.2 Glenelg village
Locality 6.3 Sandaig
Loch Hourn region
Locality 6.4 Road section west of Arnisdale
Locality 6.5 Crudh 'Ard
Locality 6.6 Corran to Rudha Camas na Caillin
Locality 6.7 Loch Hourn
Excursion 7 East Glenelg and Loch Duich

Locality 7.1 North of Glen More

Locality 7.3 Eilean Donan Castle

Locality 7.4 Carr Brae to Loch a' Mhuilinn

**Loch Duich** 

Locality 7.2 Between Glen More and Glean Beag

Locality 4.7 Coire Shubh road section

Locality 7.7 Loch Duich lochside
Excursion 8 Glen Strathfarrar and Loch Monar
Locality 8.1 Roadside just NE of North dam.
Locality 8.2 Hillside just NE of North dam.
Locality 8.3 Glacial pavement immediately west of South dam.
Locality 8.4 Roadside outcrops west of the road.
Locality 8.5 South of the Upper Power Station.
Locality 8.6 Lakeside outcrops west of Monar Lodge.
Locality 8.7 River section of the Garbh Uisge.
Locality 8.8 Moine Lewisian contact north of Inchvuilt
Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom
Excursion 9 Loch a' Bhraoin, Braemore and Loch Broom  The Sgurr Beag Thrust section
The Sgurr Beag Thrust section
The Sgurr Beag Thrust section  Locality 9.1 Allt Leacach
The Sgurr Beag Thrust section  Locality 9.1 Allt Leacach  Locality 9.2 Allt Breabaig
The Sgurr Beag Thrust section  Locality 9.1 Allt Leacach  Locality 9.2 Allt Breabaig  Option A. Meall an t Sithe
The Sgurr Beag Thrust section  Locality 9.1 Allt Leacach  Locality 9.2 Allt Breabaig  Option A. Meall an t Sithe  Locality 9.3 Meall an t Sithe
The Sgurr Beag Thrust section  Locality 9.1 Allt Leacach  Locality 9.2 Allt Breabaig  Option A. Meall an t Sithe  Locality 9.3 Meall an t Sithe  Locality 9.4 Meall Dubh

Locality 7.5 Loch Duich roadside

Locality 7.6 Loch Duich roadside

# **Excursion 10 South and Central Sutherland**

Locality 9.7 The Corrieshalloch Gorge

Locality 9.9 Loch Broom shoreline

Locality 9.10 The Moine mylonites

# **South Sutherland**

Locality 10.1 Oykell Bridge

Locality 9.8 Loch Broom

Locality 10.2 Glen Oykell

Locality 10.3 Airde of Shin

Locality 10.4 Creich Peninsula

### **Central Sutherland**

Locality 10.5 Vagastie Bridge

Locality 10.6 Loch Naver

# **Excursion 11 The Moine Thrust Belt at Loch Eriboll**

Transect 1: South Eriboll

Transect 2: Arnaboll

Transect 3: Kempie

Transect 4: Creagan Road

# **Excursion 12 Durness and Faraid Head**

### **Durness**

Locality 12.1 Sango Sands, Durness

### **Faraid Head**

Locality 12.2 Faraid Head

# **Excursion 13 North Sutherland**

### The Melness area

Locality 13.1 The Melness area

# South and east side of Tongue Bay

Locality 13.2 Kinloch Broch

Locality 13.3 Ribigill

Locality 13.4 Coldbackie Bay

Locality 13.5 Sleteil & Skullomie Harbour

# Loch Cormaic and Borgie peat cuts

Locality 13.6 Loch Cormaic

Locality 13.7 Borgie peat cuts

# **Torrisdale Bay**

Locality 13.8 Torrisdale Bay

Craig Ruadh to Glaisgeo
Locality 13.9 Creag Ruadh
Locality 13.10 Farr Bay
Locality 13.11 Glaisgeo
Swordly Bay, Kirtomy Bay and Cnoc Mor
Locality 13.12 Swordly Bay
Locality 13.13 Kirtomy Bay
Locality 13.14 Cnoc Mor
Port Mor to Portskerra
Locality 13.15 Port Mor
Locality 13.16 Strathy road sections
Locality 13.17 Strathy Point
Locality 13.18 Portskerra
Excursion 14 Great Glen
Locality 14.1 Torcastle, River Lochy: northern outcrop
Locality 14.2 Torcastle, River Lochy: southern outcrop
Locality 14.3 View over Loch Lochy towards the Clunes Tonalite
Locality 14.4 Loch Lochy shoreline
Locality 14.5 Loch Oich shoreline
Locality 14.6 Kilfinnan Burn
Locality 14.7 Rosemarkie
References
<u>Figures</u>