
Appendix 1 List of geological survey photographs

Taken by Messrs. R. Lunn and W. D. Fisher

Copies of these photographs are deposited for public reference in the library of the Geological Survey, South Kensington, London, S.W.7 and in the library of the Geological Survey Office, 19 Grange Terrace, Edinburgh, 9. Prints and lantern slides are supplied at a fixed tariff on application to the Director. All numbers belong to Series C (Half plate).

Tertiary

[\(C2251\)](#) Basic dykes cutting plateau—basalts (lavas) of Tertiary age. Rubha Buidhe.

[\(C2252\)](#) Step-like features ("trappen") characteristic of the plateau-basalts with intrusive basalt sill. South of Portree.

[\(C3899\)](#)–[\(C3900\)](#) Escarpment of Tertiary lavas with area of landslipped Tertiary volcanic material. The Quirang from U-bend, Uig Road. (Plate 4)

[\(C3901\)](#) Escarpment of Tertiary lavas and landslips. The Quirang, from Kilmaruy Burial Ground.

[\(C3902\)](#) Escarpment of Tertiary lavas and landslip. The Quirang and Prison Rock.

[\(C3903\)](#) Escarpment of Tertiary lavas showing shattering due to landslipping. The Quirang, The Needle etc.

[\(C3904\)](#) Shattering of Tertiary lava escarpment due to landslipping within The Quirang.

[\(C3905\)](#) Isolated stack of Tertiary lava. The Needle, The Quirang.

[\(C3906\)](#) Escarpment of Tertiary lavas with landslip in foreground. Sron Vourlinn, from Kilmaluig Road.

[\(C3907\)](#) Tertiary lava escarpments with extensive landslip areas. Beinn Edra and The Storr from the Quirang.

[\(C3908\)](#)–[\(C3909\)](#) Escarpments of Tertiary lavas with landslips. Biod Buidhe and Beinn Edra from the Quirang.

[\(C3913\)](#)–[\(C3914\)](#) Northern escarpment of Tertiary lavas. North end of Trotternish Basalt Plateau.

Jurassic

[\(C2236\)](#)–8 Exposure of Oil-Shale overlying the Inferior Oolite and forming base of the Great Estuarine Series. South of Holm.

[\(C2239\)](#) Middle Lias Sandstone with calcareous nodules (doggers). South of Holm.

[\(C2241\)](#) Exposure of Lower Oolite Sandstone giving rise to waterfall. Berreraig. (Plate 2)A.

[\(C2242\)](#), [\(C2243\)](#), [\(C2244\)](#), [\(C2245\)](#), [\(C2246\)](#) Exposure of Lower Oolite overlain by sill of dolerite. Berreraig Bay [\(C2244\)](#) is reproduced here as (Plate 3)A.

[\(C2247\)](#) Lower Jurassic rocks capped by Tertiary plateau-basalts. Ben Tianavaig.

[\(C3917\)](#) Jurassic sediments overlain by an intrusive dolerite sill. Leallt Gorge.

Intrusions

[\(C2240\)](#) Features given by Jurassic rocks with intrusive sills of dolerite. Holm.

[\(C2248\)](#), [\(C2249\)](#) [\(C2250\)](#) Columnar sill of intrusive dolerite. Rubha Buidhe.

[\(C3896\)](#) Columnar dolerite sills of Tertiary age, intruded into horizontally bedded sediments of Great Estuarine Series. The Kilt Rock, North Trotternish.

[\(C3897\)](#) Columnar dolerite sills of Tertiary age intruded into horizontally bedded sediments of Great Estuarine Series. Mealt waterfall and Kilt Rock, North Trotternish.

[\(C3898\)](#) Jurassic sedimentary rocks with intruded sills of dolerite. Coast south of Mealt waterfall looking north from Valtos (Plate 3)B.

[\(C3910\)](#) Escarpments of Tertiary lavas with Jurassic sediments intruded by sills of dolerite. Creag a'Lain, and The Storr from Elishader.

[\(C3911\)](#)–[\(C3912\)](#) Escarpment of Tertiary lavas with Jurassic sediments intruded by dolerite sills. North end of Trotternish Plateau from near Duntulm Post Office.

[\(C3915\)](#)–[\(C3916\)](#) Large intrusive sill of columnar dolerite. Meall Tuath.

[\(C3918\)](#) Irregular dyke cutting lavas. Lyndale Point.

[\(C3919\)](#) Dyke showing columnar jointing. Lyndale Point (Plate 2)B.

The photographs MN20704–6 forming the Frontispiece are from colour transparencies taken by Dr. F. W. Anderson.

BGS Geoscientific captions

[P217454](#) (C3919) Lynedale Point, 91.4 m. from shore, 1,399 m. NNW of Lynedale House. Dyke showing columnar jointing. 1945

[P217453](#) (C3918) Shore, Lynedale Point, 429.8 m. NNW of Lynedale Home. Irregular dyke cutting lavas. 1945

[P217452](#) (C3917) Lealt Gorge and waterfall from above Inver Tote. Jurassic sediments with intrusive dolerite sill above. 1945

[P217451](#) (C3916) Meall Tuath from Rubha Hunish. Looking S. Large intrusive sill of columnar dolerite. 1945 [NG 4150 7650]

[P217450](#) (C3915) Meall Tuath from Rubha Hunish. Looking S. Large intrusive sill of columnar dolerite. 1945 [NG 4150 7650]

[P217449](#) (C3912) N. end of the Trotternish Basalt Plateau. Looking S. from near Duntulm Post Office. Northern escarpment of Tertiary lavas, with Jurassic sediments and associated intrusive dolerite sills. 1945 [NG 4150 7450]

[P217448](#) (C3911) N. end of the Trotternish Basalt Plateau. Looking S. from near Duntulm Post Office. Northern escarpment of Tertiary lavas, with Jurassic sediments and associated intrusive dolerite sills. 1945 [NG 4150 7450]

[P217447](#) (C3909) Bìoda Buidhe and Beinn Edra. Looking S. from the Quiraing. Escarpments of Tertiary lavas with landslips to the east in centre - The Cleat - a landslip mass of Tertiary lava. 1945 [NG 4550 6950]

[P217446](#) (C3907) Beinn Edra and The Storr. Looking S. from the Quiraing. Escarpments of Tertiary lavas and extensive landslip covering the whole area to left, on right prominent hill - The Cleat - is a large landslip mass of Tertiary lava. 1945 [NG 4550 6950]

- [P217445](#) (C3901) The Quiraing, from Kilmaray Burial Ground, Uig Road. Escarpment of Tertiary lavas and landslip . 1945 [NG 4550 6950]
- [P217444](#) (C3898) Coast S. of Mealt Waterfall looking N. from Valtos. Jurassic sedimentary rocks with intruded sills of dolerite. 1945 [NG 5150 6450]
- [P217443](#) (C3896) The Kilt Rock, N. Trotternish, Skye. Dolerite sills of Tertiary age showing columned jointing are intruded into light-coloured horizontally-bedded sedimentary rocks of the Great Estuarine Series (Jurassic System). 1945 [NG 5050 6650]
- [P216258](#) (C2252) S. of Portree. Step-like features ('treppen') characteristic of the plateau basalts, with intrusive basalt sills. 1913
- [P216257](#) (C2251) Rubha Buidhe, 6.4 km. S. of Portree Bay. Basic dykes cutting plateau basalts (lavas) of Tertiary age. 1913 [NG 5150 3650]
- [P216256](#) (C2250) Rubha Buidhe, 6.4 km. S. of Portree. Columnar sill of intrusive dolerite. 1913 [NG 5150 3650]
- [P216255](#) (C2249) Rubha Buidhe, 6.4 km. S. of Portree. Columnar sill of intrusive dolerite. 1913 [NG 5150 3650]
- [P216254](#) (C2248) Rubha Buidhe, 6.4 km. S. of Portree. Columnar sill of intrusive dolerite. 1913 [NG 5150 3650]
- [P216253](#) (C2247) Ben Tianavaig, 4.8 km. SE of Portree. Lower Jurassic rocks capped by Tertiary plateau basalts repeated by fault and Jurassics partially obscured by landslips. 1913 [NG 5150 4050]
- [P216252](#) (C2246) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216252](#) (C2246) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216251](#) (C2245) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216251](#) (C2245) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216250](#) (C2244) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216250](#) (C2244) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216249](#) (C2243) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216249](#) (C2243) Berreraig Bay, 10.5 km. NNE of Portree. Columnar sill of dolerite overlying Inferior Oolite. 1913 [NG 5150 5350]
- [P216248](#) (C2242) Berreraig Bay, 10.5 km. NNE of Portree. On left - cliff of Lower Oolite. In distance - columnar sill of dolerite overlying Lower Oolite. 1913 [NG 5150 5350]
- [P216247](#) (C2240) Holm, 8.8 km. NNE of Portree. Features given by Jurassic rocks with intrusive sills of dolerite. The succession is the Middle Lias (shore) to Great Oolite (beneath sill of intrusive dolerite on skyline). 1913 [NG 5150 5150]

[P216246](#) (C2239) S. of Holm, 8.0 km. NNE of Portree. Middle Lias sandstone with calcareous nodules ('doggers'). 1913 [NG 5150 5150]

[P216243](#) (C2236) S. of Holm, 8.0 km. NNE of Portree, Skye. Exposure of oil-shale overlying the Inferior Oolite and forming base of the Great Estuarine Series. 1913 [NG 5150 5150]

[P002544](#) (C3914) Three levels of raised beach have been identified in this vicinity corresponding to the '100 ft.', '50 ft.' and '25 ft.' though the actual levels vary from these heights. The low hill Cnoc Roll just south of Duntulm Castle is a well-known example of a rockfall formed from a columnar basalt sill resting on Jurassic Great Estuarine sandstones and shales. In the distance are the higher hills and landslip scarps of the plateau basalt lavas of Sron Voulinn and Sgurr Mor. At the time of the photograph it was reported that the fall was still active, frequently disrupting the Uig-Kilmaluag road. The northern escarpment of Tertiary lavas, with Jurassic sediments and associated intrusive dolerite sills. Tullm Island on the right is formed of a dolerite sill. Part of a panorama with C03913. Description is for the full panorama. 1945 [NG 4150 7550]

[P002543](#) (C3913) Three levels of raised beach have been identified in this vicinity corresponding to the '100 ft.', '50 ft.' and '25 ft.' though the actual levels vary from these heights. The low hill Cnoc Roll just south of Duntulm Castle is a well-known example of a rockfall formed from a columnar basalt sill resting on Jurassic Great Estuarine sandstones and shales. In the distance are the higher hills and landslip scarps of the plateau basalt lavas of Sron Voulinn and Sgurr Mor. At the time of the photograph it was reported that the fall was still active, frequently disrupting the Uig-Kilmaluag road. The northern escarpment of Tertiary lavas, with Jurassic sediments and associated intrusive dolerite sills. Tullm Island on the right is formed of a dolerite sill. Part of a panorama with C03914. Description is for the full panorama. 1945 [NG 4150 7550]

[P002542](#) (C3910) Creag a' Lain, and The Storr, looking south-west from Elishader, Loch Mealt in foreground, Trotternish peninsula, Skye, Inverness-shire. Escarpments of Tertiary lavas with Jurassic sediments and associated intrusive sills of dolerite in foreground. Part of the Tertiary escarpment on the east side of the Trotternish peninsula from Ben Tianavaig to the south of Portree Bay to Sron Vourlinn above Flodigarry that has undergone landslipping. The Storr landslip is the best known and most spectacular of the Skye landslips. It stretches 5000 feet almost to the coast over the Jurassic and dolerite sills. It is thought to be entirely post-glacial and its volume and extent is consistent with a pre-slip escarpment about 2000 feet to the east of its present position. 1945 [NG 5050 6550]

[P002541](#) (C3908) Bìoda Buidhe and Beinn Edra, looking south from the Quiraing, Trotternish peninsula, Skye, Inverness-shire. Escarpments of Tertiary lavas with landslips to the east, in centre - the Cleat - a landslip mass of Tertiary lava. The whole Tertiary escarpment on the east side of the Trotternish peninsula from Ben Tianavaig to the south of Portree Bay to Sron Vourlinn above Flodigarry has undergone landslipping. Tertiary plateau lavas cap Jurassic strata that have been intruded by thick dolerite dykes. These rocks have a shallow dip to the west and this combined with the numerous north-south trending faults gave rise to large cliffs up to 600 m. high. This proved to be very unstable and led to large-scale rotational shears in the weaker underlying Jurassic strata. The landslips are the result. 1945 [NG 4550 6950]

[P002540](#) (C3906) Sron Vourlinn. Looking north-west from Lochan nan Dubham, Kilmaluag road, Trotternish peninsula, Skye, Inverness-shire. Escarpment of Tertiary lavas with extensive landslip area in foreground. The northern end of the Tertiary lava escarpment that shows spectacular landslipping for 7000 feet from here to Staffin Bay. The basic principles affecting the formation of a landslip are relatively simple. The essential requirements are a plastic or semi-plastic material capable of deformation by shear, sufficient load to overcome the internal resistance of the material to shear and a unilateral release of pressure allowing the development of shear planes. The operational force is gravity. The conditions here were ideal, a vast weight of overlying basalt lavas resting on much weaker Jurassic sediments combined with the uplift and faulting in late Tertiary times. 1945 [NG 4650 7050]

[P002539](#) (C3905) The Needle, the Quiraing, Trotternish peninsula, Skye, Inverness-shire. An isolated stack of Tertiary lava. Part of one of the landslipped blocks that has undergone erosion preferentially along the joints and fractures caused by the Quiraing landslip. 1945 [NG 4550 6950]

[P002538](#) (C3904) Within the Quiraing landslip, from The Table, Trotternish peninsula, Skye, Inverness-shire. Detail of the shattering of the Tertiary lava escarpment due to landslipping. This now mature and on the whole stable landslip is thought to have formed after the last glaciation and prior to the late-glacial readvance. It is thought that a pre-glacial slip would have extended seawards from a scarp 3000 feet east of the present position and have an altitude of at least 2500 feet but has been removed by the Highland ice. The toe of this slip must have extended as far as Flodigarry and Staffin Island. The present slip formed due to the favourable conditions caused by the removal of the ice. 1945 [NG 4550 6950]

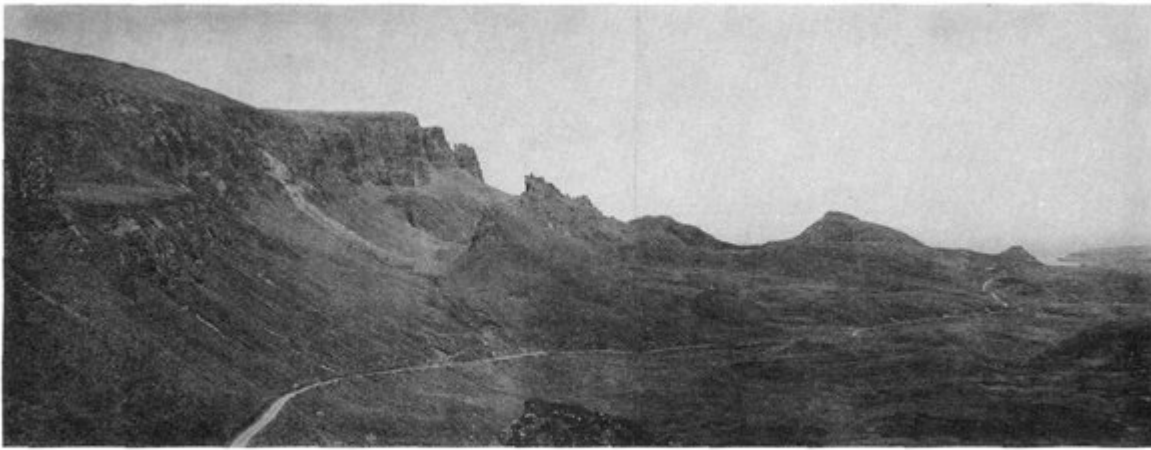
[P002537](#) (C3903) The Quiraing landslip and The Needle, Trotternish peninsula, Skye, Inverness-shire. The escarpment of Tertiary lavas and landslip. Grassed-over scree slopes can be seen in the foreground. This whole mass of rock is one of the five major sequential blocks separated by glide-planes of rotational shear. The Quiraing landslip is on the whole now stable though due to erosion at the toe of the landslip there are still occasional small movements. 1945 [NG 4550 6950]

[P002536](#) (C3902) The Quiraing and Prison Rock, Trotternish peninsula, Skye, Inverness-shire. Escarpment of Tertiary plateau lavas and the major landslip. In late Tertiary times the lava plateau was tilted slightly to the west and considerably broken up by faulting, as a result this eastern seaboard was thought to have been cliffs up to 2000 feet high. The lower part of the cliff would have been composed of Jurassic sediments and dolerite sills, whilst above stood the great thickness of lava flows. Such an arrangement obviously would have been unstable with the sediments tending to slide under the weight of the super-incumbent lavas, so forming the landslips. Identical conditions occur in the Cascade Mountains in northern Washington State. 1945 [NG 4550 6950]

[P002534](#) (C3899) The Quiraing landslip is the greatest landslip in Skye and for that matter in Great Britain. It extends 7000 feet from the scarp of Meall nan Suiramach to the coast of Staffin Bay. This is a mature slip, stable for the most part, though in the north near Flodigarry where the toe of the slip is being removed by coastal erosion there is continuous though not extensive movement. Escarpment of Tertiary lavas with extensive area of landslipped masses of Tertiary volcanic material. Part of a panorama with C03900. The description is for the full panorama. 1945 [NG 4550 6950]

[P002533](#) (C3897) Mealt Waterfall and Kilt Rock, north Trotternish, Skye, Inverness-shire. Dolerite sills of Tertiary age showing columned jointing are intruded into light-coloured horizontally-bedded sedimentary rocks of the Jurassic Great Estuarine Series. Beyond the Mealt Waterfall the Middle Jurassic Valtos Sandstone Formation is sandwiched between two olivine dolerite sills. The Kilt Rock is composed of the upper sill and shows excellent columnar jointing which can be likened in appearance to the pleats in a kilt. The Mealt Waterfall is the outlet for the nearby Loch Mealt. 1945 [NG 5050 6550]

[P002273](#) (C2241) Berreraig, 9.7 km. north-north-east of Portree, Skye (Inverness). Exposure of Lower Oolite sandstone giving rise to waterfall. A bed of near horizontal strong rock overlying weaker beds located downstream enable the latter to be relatively quickly worn down and the strong resistant bed begins to be undercut. Rapids would have formed first and with development, the face would become vertical and so form a waterfall as in the photograph. 1913 [NG 5150 5350]



(C3899-3900)

THE QUIRANG, LOOKING NORTH-EAST FROM UIG ROAD
*Escarpment of Tertiary lavas with extensive area of landslipped masses of Tertiary volcanic material.
Staffin is on the extreme right*

(Plate 4) The Quirang, looking north-east from Tug road. Escarpment of Tertiary lavas with extensive area of landslipped masses of Tertiary volcanic material. Staffin is on the extreme right. (C3899–3900).



(C2241)

A. BEARRERAIG, SIX MILES NORTH-NORTH-EAST OF PORTREE
Inferior Oolite sandstone giving rise to waterfall



(C3919)

B. LYNDALE POINT, 100 YD FROM SHORE, 1530 YD NORTH-NORTH-WEST
OF LYNDALE HOUSE
Dolerite dyke showing columnar jointing

(Plate 2) A. *Bearreraig*, six miles north-north-east of *Portree*. *Inferior Oolite* sandstone giving rise to waterfall. (C2241) B. *Lyndale Point*, 100 yd from shore, 1530 yd north-northwest of *Lynedale House*. *Dolerite* dyke showing columnar jointing. (C3919).



(C2244)

A. BEARRERAIG BAY, 6½ MILES NORTH-NORTH-EAST OF PORTREE
Columnar sill of dolerite overlying Inferior Oolite



(C3898)

B. COAST, SOUTH OF MEALT WATERFALL, LOOKING NORTH FROM VALTOS
Great Estuarine Series with intruded sills of dolerite

(Plate 3) A. *Bearreraig Bay*, 6½ miles north-north-east of *Portree*. *Columnar sill of dolerite overlying Inferior Oolite*. (C2244) B. *Coast, south of Mealt Waterfall, looking north from Valtos*. *Great Estuarine Series with intruded sills of dolerite*. (C3898).