

---

## Appendix 2 List of geological survey photographs, Ardnamurchan

By W. Manson

### Ben Hiant Vents

General Views. ([C2838](#)), ([C2839](#)), ([C2840](#)), ([C2844](#)), ([C2859](#)).

Vent Junctions ([C2847](#)), ([C2854](#)), ([C2855](#)), ([C2856](#)), ([C2857](#)).

Agglomerate ([C2843](#)).

Tuff-bed ([C2848](#)).

Big Blocks in Vent ([C2850](#)), ([C2851](#)).

Columnar Pitchstone Lavas ([C2845](#)), ([C2846](#)), ([C2858](#)).

Porphyritic Basalt Plug, junction ([C2858](#)).

### Ben Hiant Intrusion

General Views ([C2829](#)), ([C2830](#)), ([C2831](#)), ([C2832](#)), ([C2834](#)), ([C2835](#)).

View of Junction with Vent-Agglomerates ([C2860](#)).

Vertical Jointing ([C2853](#)).

Columnar Basal Portion ([C2833](#)).

Flat Columns in Variolite ([C2852](#)).

### Cone-sheets

Cutting Sediments and Schists ([C2820](#)), ([C2824](#)), ([C2825](#)), ([C2826](#)), ([C2827](#)).

Cutting Ring-dykes ([C2778](#)), ([C2793](#)).

### Ring-dykes

General Views ([C2781](#)), ([C2782](#)), ([C2783](#)), ([C2784](#)), ([C2785](#)), ([C2789](#)), ([C2790](#)), ([C2791](#)), ([C2792](#)), ([C2794](#)), ([C2805](#)), ([C2811](#)), ([C2814](#)), ([C2818](#)).

Panoramic Views of Interior Complex ([C2799](#)), ([C2800](#)), ([C2801](#)), ([C2802](#)), ([C2803](#)), ([C2804](#)), ([C2806](#)), ([C2807](#)), ([C2808](#)), ([C2809](#)).

Intrusive Contacts ([C2779](#)), ([C2793](#)), ([C2812](#)), ([C2813](#)), ([C2815](#)), ([C2817](#)), ([C2819](#)).

Banding and Pegmatite Veins in Great Eucrite ([C2786](#)), ([C2787](#)).

Banding, Sìthean Mòr Ring-dyke ([C2796](#)).

Quartz-gabbro ([C2810](#)).

Net-veining. ([C2773](#)) ([C2774](#)), ([C2775](#)), ([C2776](#)), ([C2777](#)),([C2778](#)).

Granulite band in Hypersthene-gabbro. ([C2795](#)).

## Post-Tertiary

Pre-glacial Raised Beach Rock-notch ([C2821](#)), ([C2822](#)).

Roche-moutoná (Great Eucrite) ([C2797](#)), ([C2798](#)).

Sand-dunes, Sanna ([C2788](#)).

Copies of the above photographs (size, half-plate) are deposited for reference in the London and Edinburgh Offices of the Geological Survey, and prints and lantern-slides are supplied at a fixed tariff.

## List of photos and full descriptions

[P216638](#) C02773 Shore 0.8 km. NW of Grigadale, Ardnamurchan. Quartz-dolerite net-veined by granophyre, Sgùrr nam Meann nam Meann ring-dyke. [NM 4250 6750]

[P216639](#) C02774 Shore 0.8 km. NW of Grigadale, Ardnamurchan. Quartz-dolerite net-veined by granophyre. Sgùrr nam Meann nam Meann ring-dyke (more distant view). [NM 4250 6750]

[P216640](#) C02775 Shore 0.8 km. NW of Grigadale, Ardnamurchan. Intrusive sheet of granophyre abundantly net-veining its roof of hypersthene-gabbro. [NM 4250 6750]

[P216641](#) C02776 Shore 0.8 km. NW of Grigadale, Ardnamurchan. Intrusive sheet of hybrid granophyre abundantly net-veining its roof of hypersthene-gabbro. [NM 4250 6750]

[P216642](#) C02777 Shore 0.8 km. NW of Grigadale, Ardnamurchan. Intrusive sheet of hybrid granophyre abundantly net-veining its roof of hypersthene-gabbro (more distant view). [NM 4250 6750]

[P216643](#) C02778 Summit of Sgùrr nam Meann nam Meann, Grigadale, Ardnamurchan. Quartz-dolerite net-veined by granophyre, and intruded by a basic cone-sheet, all highly baked. The hammer handle lies along the right-hand margin of the cone-sheet. [NM 4350 6750]

[P216643](#) C02778 Summit of Sgùrr nam Meann nam Meann, Grigadale, Ardnamurchan. Quartz-dolerite net-veined by granophyre, and intruded by a basic cone-sheet, all highly baked. The hammer handle lies along the right-hand margin of the cone-sheet. [NM 4350 6750]

[P216644](#) C02779 NW slopes of Beinn Bhuidhe, Achosnich, Ardnamurchan. Intrusive junction of quartz-gabbro (to the right) and eucrite (Beinn nan Ord ring-dyke). Note (1) the steep nature of the junction, along which the hammer handle is placed; (2) the fine-grained marginal variety of the quartz-gabbro in contrast to the older coarse-grained eucrite. [NM 4350 6750]

[P216645](#) C02781 Beinn Bhuidhe, Achosnich, Ardnamurchan. Portion of Great Eucrite ring-dyke (later-complex), showing parts of its inner steep face. Earlier quartz-gabbro in foreground. [NM 4350 6750]

[P216646](#) C02782 Grigadale, Ardnamurchan. Portion of early ring-dyke complex, with Beinn na Seilg (left) and Beinn nan Ord (right). [NM 4350 6750]

[P216647](#) C02783 Grigadale, Ardnamurchan. Portion of early ring-dyke complex, with Beinn na Seilg (left) and Beinn nan Ord (right). [NM 4350 6750]

[P000508](#) C02784 Achosnich, Ardnamurchan. Argyllshire. Part of the Ardnamurchan Tertiary igneous complex. The view shows part of the early ring-dyke complex, with the later Great Eucrite ring-dyke on the left. Part of a panorama with C02785. Prior to centralized igneous activity, the area would have been covered with plateau basalts. Activity began east of Ben Hiant, then moved to the western part of Ardnamurchan here at Achosnich and finally to the area near Achnaha. The Ardnamurchan Tertiary igneous complex is one of seven central complexes that lie on a line trending north-north-west to south-south-east from Skye to Arran. Others exist further west e.g. St. Kilda and several submarine centres. [NM 4450 6750]

[P000509](#) C02785 Achosnich, Ardnamurchan. Argyllshire. Part of the Ardnamurchan Tertiary igneous complex. The subdued country in the foreground is due to prevalence of quartz-gabbro intrusions. Part of a panorama with C02784. The distant rocky hill (Beinn na Seilg) owes its boulder form to another ring-dyke of eucrite, intruded in the quartz-gabbro complex. The outcrop of this intrusion descends the right-hand slope of Beinn na Seilg and crosses a valley, eroded along later-developed crush-lines, to ascend the slope of Beinn nan Ord (seen on skyline on extreme right). The Ardnamurchan Tertiary igneous complex is one of seven central complexes that lie on a line trending north-north-west to south-south-east from Skye to Arran. Others exist further west e.g. St. Kilda and several submarine centres. [NM 4450 6750]

[P216648](#) C02786 Rising ground 0.8 km. NNE of Achosnich School, Achosnich, Ardnamurchan. Banding in Great Eucrite ring-dyke, traversed by pegmatitic veins. Note (1) the steep nature of the broad bands of lighter coloured eucrite, and (2) the parallelism between the banding and later veining. [NM 4450 6750]

[P216649](#) C02787 Rising ground 0.8 km. NNE of Achosnich School, Achosnich, Ardnamurchan. Pegmatitic veins in Great Eucrite with vague banding. [NM 4450 6750]

[P216650](#) C02788 Shore of Sanna Bay, Sanna, Ardnamurchan. Sand-dunes. [NM 4450 6850]

[P216651](#) C02789 Western side of Beinn nan Ord, Ardnamurchan. Crags marking the outcrop of the Beinn nan Ord eucrite ring-dyke. [NM 4450 6450]

[P216652](#) C02790 Southern end of Beinn nan Ord, Ardnamurchan. Outcrop of Beinn nan Ord eucrite ring-dyke extending up hillside. The hollow to the right of the central crags, extending up hillside, is along the right-hand margin of the eucrite, against an earlier quartz-gabbro intrusion. [NM 4450 6450]

[P216653](#) C02791 Western side of Beinn na Seilg, Ardnamurchan. Portion of early ring-dyke complex, with valley eroded along later crush-lines, between Beinn nan Ord and Beinn na Seilg (in distance). [NM 4550 6450]

[P216654](#) C02792 Western side of Beinn na Seilg, Ardnamurchan. Portion of early ring-dyke complex with valley eroded along later crush-lines, between Beinn nan Ord and Beinn na Seilg, (in distance). [NM 4550 6450]

[P216655](#) C02793 Low ground 0.4 km. NNW of trigonometrical station on Beinn na Seilg, Ardnamurchan. Junction of hypersthene-gabbro (G) and (later) quartz-dolerite ring-dyke of Sgùrr nam Meann nam Meann (qD) cut by cone-sheet. [NM 4550 6450]

[P216655](#) C02793 Low ground 0.4 km. NNW of trigonometrical station on Beinn na Seilg, Ardnamurchan. Junction of hypersthene-gabbro (G) and (later) quartz-dolerite ring-dyke of Sgùrr nam Meann nam Meann (qD) cut by cone-sheet. [NM 4550 6450]

[P216656](#) C02794 Eastern side of Beinn na Seilg, Ardnamurchan. Portion of early ring-dyke complex with later quartz-gabbro forming smooth foreground. [NM 4550 6450]

[P216657](#) C02795 Low ground 0.4 km. SW of trigonometrical station on Beinn na Seilg, Ardnamurchan. Band of granulite in hypersthene-gabbro crossed by aplite veins. The banded (upper) margin of the granulite is cut into by the gabbro. [NM 4550 6450]

[P216658](#) C02796 Sithean Mhor, W. of road 0.8 km. S. of Achnaha, Ardnamurchan. Banded fluxion gabbro of Sithean Mhor (interior complex of ring-dykes). [NM 4650 6750]

[P216659](#) C02797 Northern end of Meall Sanna, 1.6 km. S. of Plocaig, Ardnamurchan. Scenery characteristic of eucrite with roch-moutonneed crags bare of vegetation. [NM 4550 6850]

[P216660](#) C02798 Northern end of Meall Sanna, 1.6 km. S. of Plocaig, Ardnamurchan. Scenery characteristic of eucrite with roche-moutonneed crags bare of vegetation. [NM 4650 6850]

[P216661](#) C02799 Country around Glendrian and Achnaha from northern low ground of Meall Sanna, 1.6 km. S. of Plocaig, Ardnamurchan. Panorama of central complex of ring-dyke, from the north, showing encircling crags of the Great Eucrite ring-dyke. [NM 4650 6850]

[P216662](#) C02800 Country around Glendrian and Achnaha from northern low ground of Meall Sanna, 1.6 km. S. of Plocaig, Ardnamurchan. Panorama of central complex of ring-dyke, from the north, showing encircling crags of the Great Eucrite ring-dyke. [NM 4650 6850]

[P216663](#) C02801 Country around Glendrian and Achnaha from northern low ground of Meall Sanna, 1.6 km. S. of Plocaig, Ardnamurchan. Panorama of central complex of ring-dyke, from the north, showing encircling crags of the Great Eucrite ring-dyke. [NM 4650 6850]

[P216664](#) C02802 Country around Glendrian and Achnaha from Beinn na h-Imeilte. Panorama of interior complex of ring-dykes, from the west. Within the ring of eucrite crags, to the right, is the curving ridge of Sithean Mhor, separated by a valley from another ridge inside it, to the left. Both ridges are composed of fluxion-gabbro, and the inner forms part of the ring-dyke of Glendrian which encircles a central area of lower ground occupied largely by more acid rocks, tonalite and quartz-monzonite. [NM 4650 6850]

[P216665](#) C02803 Country around Glendrian and Achnaha from Beinn na h-Imeilte. Panorama of interior complex of ring-dykes, from the west. Within the ring of eucrite crags, to the right, is the curving ridge of Sithean Mhor, separated by a valley from another ridge inside it, to the left. Both ridges are composed of fluxion-gabbro, and the inner forms part of the ring-dyke of Glendrian which encircles a central area of lower ground occupied largely by more acid rocks, tonalite and quartz-monzonite. [NM 4650 6850]

[P216666](#) C02804 Country around Glendrian and Achnaha from Beinn na h-Imeilte. Panorama of interior complex of ring-dykes, from the west. Within the ring of eucrite crags, to the right, is the curving ridge of Sithean Mhor, separated by a valley from another ridge inside it, to the left. Both ridges are composed of fluxion-gabbro, and the inner forms part of the ring-dyke of Glendrian which encircles a central area of lower ground occupied largely by more acid rocks, tonalite and quartz-monzonite. [NM 4650 6850]

[P216667](#) C02805 Country to the S. of Glendrian and Achnaha from Beinn na h-Imeilte. Portion of interior complex of ring-dykes, from the west. [NM 4650 6850]

[P000510](#) C02806 Country around Glendrian and Achnaha from Meall an Fhir-eoin, Ardnamurchan. Argyllshire. Part of a panorama of the third and final centre of the Ardnamurchan Tertiary central igneous complex. The ridge in the distance and the rocks in the left foreground are part of the Great Eucrite ring-dyke. It forms a complete ring of hills rising up to 250 metres above the general level of the surroundings. Centre 3 of the Ardnamurchan Tertiary central igneous complex forms the largest and most complete set of ring intrusions in the British Isles. Part of a panorama with C02807, C02808, C02809. [NM 4650 6850]

[P000511](#) C02807 The hills in the background are part of the Great Eucrite ring-dyke. The inner encircling ridge is formed of the Glendrian Fluxion-gabbro ring-dyke. The central area of low relief on the right is composed chiefly of more acid rocks, tonalite and quartz-monzonite. Centre 3 of the Ardnamurchan Tertiary central igneous complex forms the largest and most complete set of ring intrusions in the British Isles. Part of a panorama with C02806, C02808, C02809. Part of a panorama of the third and final centre of the Ardnamurchan Tertiary central igneous complex showing the interior

complex of basic and ultrabasic ring-dykes encircling the innermost acid igneous tonalite and quartz-monzonite. [NM 4650 6850]

[P000512](#) C02808 Looking from the encircling crags of the Great Eucrite ring-dyke towards the inner encircling ridge formed of the Glendrian Fluxion-gabbro ring-dyke. The central area of low relief is composed chiefly of more acid rocks, tonalite and quartz-monzonite. The sequence is reversed the other side of the centre. Centre 3 of the Ardnamurchan Tertiary central igneous complex forms the largest and most complete set of ring intrusions in the British Isles. Part of a panorama with C02806, C02807, C02809. Part of a panorama of the third and final centre of the Ardnamurchan Tertiary central igneous complex showing the interior complex of basic and ultrabasic ring-dykes encircling the innermost acid igneous tonalite and quartz-monzonite. [NM 4650 6850]

[P000513](#) C02809 Country around Glendrian and Achnaha from Meall an Fhir-eoin, Ardnamurchan. Argyllshire. Part of a panorama of the third and final centre of the Ardnamurchan Tertiary central igneous complex. Looking west along the Great Eucrite ring-dyke. It is very resistant to weathering and forms a complete ring of hills rising up to 250 metres above the general level of the surroundings and forming a natural amphitheatre around the inner part of the complex. It is a coarse feldspathic gabbroic rock containing augite and olivine. Centre 3 of the Ardnamurchan Tertiary central igneous complex forms the largest and most complete set of ring intrusions in the British Isles. Part of a panorama with C02806, C02807, C02808. [NM 4750 6550]

[P216668](#) C02810 1.2 km. NNW of Glebe Hill, Kilchoan, Ardnamurchan. Weathered surfaces of quartz-gabbro. [NM 4950 6650]

[P002400](#) C02811 Meall an Tarmachain and country to the south and west, Ardnamurchan, Argyllshire. Portion of the later ring-dyke complex (Centre 3) of the major Tertiary central igneous complex of Ardnamurchan. The view shows the outer wall of Great Eucrite against quartz-gabbro and capped by basalt lava and agglomerate. Note the dark crags to the left are the Great Eucrite and the light-coloured crags along the skyline to the right are agglomerate and basalt lava. Quartz-gabbros occur on the lower slopes. [NM 4950 6650]

[P216669](#) C02812 Meall an Tarmachain, Ardnamurchan. Intrusive junction of Outer Eucrite ring-dyke and (later) quartz-gabbro. [NM 4950 6650]

[P216670](#) C02813 Meall an Tarmachain, Ardnamurchan. Intrusive junction of Outer Eucrite ring-dyke and (later) quartz-gabbro. [NM 4950 6650]

[P216671](#) C02814 Meall nan Con from northern slopes of Meall an Tarmachain, Ardnamurchan. Great Eucrite ring-dyke and granulitized rocks of Meall nan Con (to the right), from the south. [NM 5050 6850]

[P216672](#) C02815 0.8 km. SW of Meall nan Con, Ardnamurchan. Junction of Great Eucrite and banded granulites of Meall nan Con. The junction is parallel to the banding in the granulites, and is situated a little way above the hammer which is placed on eucrite. [NM 4950 6750]

[P216674](#) C02817 Western crags of Meall nan Con, Ardnamurchan. Outer margin of the Great Eucrite ring-dyke against granulites of Meall nan Con summit. The vertical jointing in the crags of eucrite above the loch is at right-angles to the junction with the granulites which obliquely crosses the scarp, the left-hand crags seen being of granulite. [NM 5050 6850]

[P002401](#) C02818 Meall Meadhoin and Meall nan Con, Glendrian, Ardnamurchan, Argyllshire. The Great Eucrite ring-dyke and Meall nan Con granulitized rocks, from the north. Part of the Ardnamurchan Tertiary central igneous complex. The valley to the left closely follows the junction of granulites and outer margin of the Great Eucrite. The granulites are earlier intrusions affected by contact metamorphism during the emplacement of the Great Eucrite. The steep crags partly on view on the extreme right mark the inner margin of the Great Eucrite. The Great Eucrite is the most remarkable ring-dyke in Ardnamurchan, being a complete ring, a mile in annular width. [NM 4950 6850]

[P216675](#) C02819 Southern slopes of Meall an Tarmachain, Ardnamurchan. Outer margin of the Great Eucrite (to the left) against baked agglomerate. The junction lies along the depression in the middle distance. [NM 4950 6550]

[P000514](#) C02820 The porphyritic dolerite intrusion extends from Glas Bheinn for 4 km. westwards towards Camphouse. It is one of two porphyritic dolerite intrusions of Centre 1, the other forms a small circular mass south of Ben Hiant. A croft and hayfield are in the foreground. A massive quartz-dolerite cone-sheet of Centre 2 extends obliquely up a hillside cutting through Moine schists in the foreground and a porphyritic dolerite intrusion of Centre 1 of the Ardnamurchan Tertiary igneous complex. [NM 4950 6450]

[P216676](#) C02821 Ormsaigbeg, Kilchoan, Ardnamurchan. Rock-notch marking inner margin of pre-glacial raised beach, at about 43 m. above present High Water Mark. [NM 4750 6350]

[P000515](#) C02822 The notch is the product of prolonged marine erosion and its pre-glacial age is strongly suggested as no gravels are preserved on the raised beach and it has undergone erosion, unlike the late-glacial and postglacial raised beaches at lower levels. The field in the foreground contains hayricks typical of the date at the time of the photograph. A rock-notch marking the inner margin of pre-glacial raised beach, at about 43 m. above present high water mark. It runs along the hill-slopes for about one mile as a conspicuous feature of the landscape. [NM 4750 6350]

[P216678](#) C02824 Sea-cliffs S. of Beinn nan Codhan, Kilchoan, Ardnamurchan. Sea cliff of Inferior Oolite limestone traversed by basic cone-sheets and sills, with upper cliff marking pre-glacial raised beach margin.

[P216679](#) C02825 An Acairseid, Kilchoan, Ardnamurchan. Sea cliff of Middle Lias sandstone cut by basic cone-sheets.

[P216680](#) C02826 Shore on W. side of Rubha Aird an Iasgaich, Kilchoan, Ardnamurchan. Cone-sheets intrusive in quartzose schists. The sheets are inclined away from camera and show well developed cross-jointing. [NM 4950 6250]

[P216681](#) C02827 Shore on W. side of Rubha Aird an Iasgaich, Kilchoan, Ardnamurchan. As C2826 (near view). The plane rock surface below the big cone-sheet and inclined in a contrary direction, towards camera, marks a sill-intrusion projecting from the base of the sheet into the bedded schists. [NM 4950 6250]

[P000516](#) C02829 This base overlies schists where these are indicated by white screes above the inner angle of the bay. The left margin of the intrusion then plunges steeply down to sea-level, to right of the screes. Its right-hand margin, also steeply plunging seawards, occurs on the far side of the bay, above Mingary Castle, (seen nearer at hand in the middle distance). Ben Hiant forms an extinct Tertiary volcano, it is the earliest major igneous event of the Ardnamurchan central igneous complex. Maclean's Nose to the extreme right is formed of vent agglomerate, part of a volcanic vent complex, and is earlier than the quartz-dolerite intrusion. Ben Hiant intrusion of quartz-olivine-dolerite, from the west, with lower ground traversed by cone-sheets. The big scarp extending from the skyline on the left marks a base to the intrusion. [NM 5050 6350]

[P216683](#) C02830 N. side of Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant intrusion from the east. Base of intrusion extends obliquely down hillside on left, with scree of basalt lava in foreground. The scarp on the right overlooks the base of the intrusion in this direction. [NM 5350 6350]

[P216684](#) C02831 N. side of Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant intrusion from the east. Base of intrusion extends obliquely down hillside on left, with scree of basalt lava in foreground. The scarp on the right overlooks the base of the intrusion in this direction. [NM 5350 6350]

[P216685](#) C02832 Ben Hiant, Hilchoan, Ardnamurchan. Ben Hiant intrusion from the east. The scarp on the left, extending obliquely down the hillside marks the basin-like base of the intrusion overriding basalt lavas. [NM 5350 6350]

[P216686](#) C02833 Low ground NW of Ben Hiant, Kilchoan, Ardnamurchan. Basal portion of Ben Hiant intrusion, with perfect columnar jointing. [NM 5350 6350]

[P216687](#) C02834 Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant intrusion, from the north. [NM 5350 6350]

[P216688](#) C02835 Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant intrusion, from the east. [NM 5350 6350]

[P216691](#) C02838 Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant from Ardsignish. The bedded rocks consist of white weathering quartzose schists, seen in the foreground, overlain by the Tertiary basalt lavas, forming dark scarp features in the middle distance. Agglomerates form the headland to the left (Maclean's Nose) and extend up hill to the right, transgressing across the bedded rocks. The ridge along the summit is formed of the Ben Hiant intrusion, overriding agglomerate. [NM 5350 6350]

[P002402](#) C02839 Ben Hiant, Kilchoan, Ardnamurchan, Argyllshire. Part of a panorama of the remains of the Ben Hiant Tertiary volcano from Ardsignish with C02840. The description is for the whole panorama. The bedded rocks consist of white weathering quartzose Moine schists, seen in the foreground, overlain by the Tertiary basalt lavas, forming the dark scarp features in the middle distance. Agglomerates form the headland to the left (Maclean's Nose) and extend up hill to the right, transgressing across the bedded rocks. The ridge along the summit is formed of the Ben Hiant quartz-dolerite intrusion, overriding the agglomerate. The history of this sequence starts with the eruption of the plateau basalts onto the Moine schist basement. This was followed by the formation of explosion-vents of a central volcano that violently ejected vast amounts of agglomerates, pyroclastics and occasional pitchstone lavas. This was followed by the intrusion of the great mass of quartz-dolerite - the Ben Hiant Intrusion. Its shape suggests that it extended upwards then spread out laterally as though filling some great crater. [NM 5350 6350]

[P002403](#) C02840 Ben Hiant, Kilchoan, Ardnamurchan, Argyllshire. Part of a panorama of the remains of the Ben Hiant Tertiary volcano from Ardsignish with C02839. The description is for the whole panorama. The bedded rocks consist of white weathering quartzose Moine schists, seen in the foreground, overlain by the Tertiary basalt lavas, forming the dark scarp features in the middle distance. Agglomerates form the headland to the left (Maclean's Nose) and extend up hill to the right, transgressing across the bedded rocks. The ridge along the summit is formed of the Ben Hiant quartz-dolerite intrusion, overriding the agglomerate. The history of this sequence starts with the eruption of the plateau basalts onto the Moine schist basement. This was followed by the formation of explosion-vents of a central volcano that violently ejected vast amounts of agglomerates, pyroclastics and occasional pitchstone lavas. This was followed by the intrusion of the great mass of quartz-dolerite - the Ben Hiant Intrusion. Its shape suggests that it extended upwards then spread out laterally as though filling some great crater. [NM 5350 6350]

[P216694](#) C02843 Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Agglomerate of Maclean's Nose. The large blocks are characteristic of this agglomerate and consist of big feldspar basalt. [NM 5350 6150]

[P216695](#) C02844 Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Cliffs of Maclean's Nose formed of agglomerate with cone-sheets intrusions in the foreground (cutting schists). [NM 5350 6150]

[P216696](#) C02845 Gully E. of Stallachan Dubha, Ben Hiant, Kilchoan, Ardnamurchan. Columnar pitchstone lava with upright columns below, and flat, more narrow columns above. [NM 5350 6250]

[P216697](#) C02846 Gully E. of Stallachan Dubha, Ben Hiant, Kilchoan, Ardnamurchan. Columnar pitchstone lava with upright columns below and flat, more narrow columns above. [NM 5350 6250]

[P216698](#) C02847 Cliffs E. of Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Vertical wall of Ben Hiant volcanic vent. Basalt lavas to the right which are practically horizontal are transgressed vertically by the agglomerate, the two hammer-handles lying along the junction. [NM 5350 6150]

[P216699](#) C02848 Cliffs E. of Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Tuff interbedded with the agglomerates of the Ben Hiant vent. The hammer handle is laid along the flat top of the tuff-bed. [NM 5350 6150]

[P216701](#) C02850 Cliffs E. of Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant volcanic vent, showing large included masses of big feldspar basalt, and in the background the Ben Hiant intrusion. [NM 5350 6150]

[P216702](#) C02851 Cliffs E. of Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant volcanic vent, showing large included masses of big feldspar basalt, and in the background the Ben Hiant intrusion. [NM 5350 6150]

[P216703](#) C02852 In gully above wood at Camas nan Clacha' Mora, Ben Hiant, Kilchoan, Ardnamurchan. Variolite portion of Ben Hiant intrusion with hexagonal joints forming columns slightly inclined. [NM 5250 6250]

[P216704](#) C02853 Eastern side of Ben Hiant, Kilchoan, Ardnamurchan. Ben Hiant intrusion showing the vertical jointing. The grassy foreground is chiefly composed of an earlier porphyritic dolerite intrusion. [NM 5450 6350]

[P216705](#) C02854 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Inclined wall of north-east vent of Ben Hiant. The hammer handles are laid along junction of agglomerate (above) and a composite dyke. The dyke is intruded into the plateau basalt lavas alongside, and is transgressed at an angle of about 35 degrees by the agglomerate. [NM 5450 6350]

[P216706](#) C02855 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Inclined wall of north-east vent of Ben Hiant. The hammer handles are laid along junction of agglomerate (above) and a composite dyke. The dyke is intruded into the plateau basalt lavas alongside, and is transgressed at an angle of about 35 degrees by the agglomerate. [NM 5450 6350]

[P216707](#) C02856 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Inclined wall of north-east vent of Ben Hiant. The hammer handle lies along junction of agglomerate (above) and spheroidally weathered basalt lava. The junction marking wall of vent, is inclined away from the camera at an angle of about 50 degrees. [NM 5450 6350]

[P216708](#) C02857 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Inclined wall of north-east vent of Ben Hiant. The hammer handle lies along junction of agglomerate (above) and spheroidally weathered basalt lava. The junction marking wall of vent, is inclined away from the camera at an angle of about 50 degrees. [NM 5450 6350]

[P216709](#) C02858 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Intrusive junction of prophyritic dolerite (left) and tuff of the Ben Hiant vent, with distant scarps of pitchstone lava, eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. [NM 5450 6350]

[P216709](#) C02858 Eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. Intrusive junction of prophyritic dolerite (left) and tuff of the Ben Hiant vent, with distant scarps of pitchstone lava, eastern lower slopes of Ben Hiant, Kilchoan, Ardnamurchan. [NM 5450 6350]

[P216710](#) C02859 Maclean's Nose, Ben Hiant, Kilchoan, Ardnamurchan. Agglomerate cliffs of Maclean's Nose, about 183 m. high. [NM 5350 6150]

[P002404](#) C02860 Ben Hiant, Kilchoan, Ardnamurchan, Argyllshire. Part of Centre 1 of the Tertiary central igneous complex of Ardnamurchan. The junction on the hillside of the Ben Hiant quartz-dolerite intrusion (left) and agglomerates near Maclean's Nose. On the skyline to the left the marginal scarp of the intrusion may be seen, and from there it may be traced steeply down the hillside to the wood on the extreme left. The pointed hill on the skyline is Stallachan Dubha, and is formed of an outlying portion of the Ben Hiant intrusion. The Ben Hiant volcano, the earliest major igneous event on Ardnamurchan, started with highly explosive eruptions through large vents to deposit coarse agglomerates such as those at Maclean's Nose. This was followed by the intrusion of the great mass of quartz-dolerite - the Ben Hiant Intrusion. Its shape suggests that it extended upwards then spread out laterally as though filling some great crater. [NM 5350 6350]