Locality 3 [NS 6100 7993]

Muckle Alicompen

There are two waterfalls here, the upper one (photo below) cascades over a basalt lava flow, typical of much of the Clyde Volcanic Formation. Close examination may reveal small white feldspar crystals (microphenocrysts) which are orientated parallel to the original lava flow direction. This

texture is characteristic of hawaiites (a type of basalt with high alkali content). The lower part of the lava sequence at Campsie Glen consists of 17 flows of this hawaiite. Occasional thin layers of soft red rock (known as bole) show that the tops of the flows were subjected to periods of tropical weathering. The larger lower waterfall flows over another large dyke.

Return up the path and reach the carpark on the Crow Road, which is a good viewpoint, with two information boards.

Locality 4 [NS 6128 8008]

Crow Road Carpark

The first board illustrates how the geology of the area has influenced the landscape. In particular it describes the Campsie Fault, a large rupture in the earth's crust which probably has moved about 1000m vertically and forms the steep face of the Campsies. The fault runs just behind the cafe at Clachan of Campsie. This fault (and others in the area) were responsible for the rise of molten rock from deep in the earth's crust to form the Clyde Plateau lavas we see today. The lava pile in the Campsie Fells is in the order of 500 m thick and volcanic vents are common, such as those at Dumgoyne and Dumbarton Rock.

The second board describes features caused by the Ice Age. From about 30,000 to 15,000 years ago thick ice covered the entire area, but when it melted it left behind a large variety of features, such as drumlins, kettle holes, gravel beds and deepened the Blane Valley which was once part of a large glacial lake. The land rose after the ice melted and earthquakes probably triggered rock falls and landslides.

From the carpark, cross the road and follow the path uphill for about 100 m towards the old concrete shed building (once a gunpowder store for the quarry at the next locality). Before reaching the hut follow a track to the left for another 100 m, and then keep to left when this turns uphill, and follow a fainter level track for another 100 m and reach an old quarry .

Locality 5 [NS 6150 8019]

Markle Basalt Quarry

This long abandoned quarry is in flow 18 and the lavas quarried here are called Markle basalt (after a quarry in East Lothian). It is highly vesicular in places (i.e. it has preserved frozen gas bubbles) and is notable for the size of its feldspar phenocrysts (large white crystals), some of which exceed 25 mm (1 inch) in length (photograph below). Comparatively fresh specimens of it can be obtained from loose material in the floor of the quarry.

Follow the paths back down to the parking area or the cafe to complete the excursion.

Of interest locally is an intrusion of an igneous rock called an essexite – which outcrops close to the Crow Road about 1 km downhill towards Lennoxtown. It is very distinctive, with large black pyroxene crystals. It has proved to be a valuable tracer for ice movements; fragments of this rock occur as far as 20 km (12.5 miles) to the east, confirming that the main movement of ice from the Loch Lomond area was to the east.

Produced by the Strathclyde Geoconservation Group.
A subcommittee of the Geological Society of Glasgow
More information at: www.geologyglasgow.org

A Geological Trail around Campsie Glen

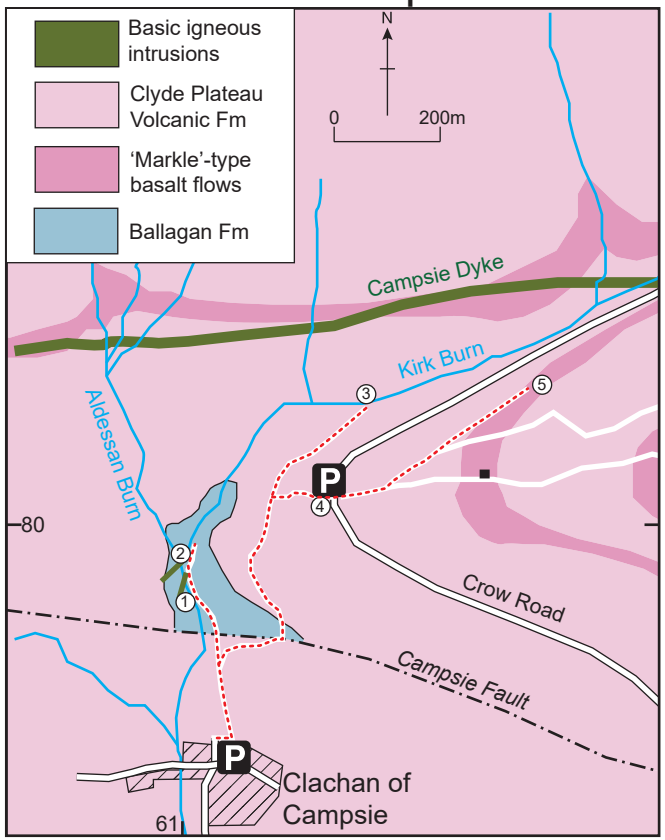
The Crow Road and Campsie Glen

Campsie Glen: Lady's Linn

Strathclyde Geoconservation Group

THE GEOLOGICAL SOCIETY OF GLASGOW

Trail Map



Welcome to Campsie Glen. Prepare to take a step back in time! Our trail starts in the car park at Clachan of Campsie where there is a cafe (usually open 10-4 every day). The X85 bus runs regularly between here and Buchanan bus station.

The trail is in several sections, so you can choose how much to do. The first section (Localities 1 and 2) follows the burn behind the buildings; to get to Localities 3 to 5 you can either walk up the steepish path which branches off the main path just before Locality 1, or drive to the car park on Crow Road.

The full walk from the cafe and back is 4 km, with a height gain of 200 m and will take about 2 ½ hours there and back.

The Campsie Glen area exposes rocks typical of the Campsie Fells, with Lower Carboniferous (350 million years old) Clyde Plateau Lavas and the sedimentary sequences immediately above and below them. Our trail first examines the rocks immediately below the lavas and then the overlying beds of lava.

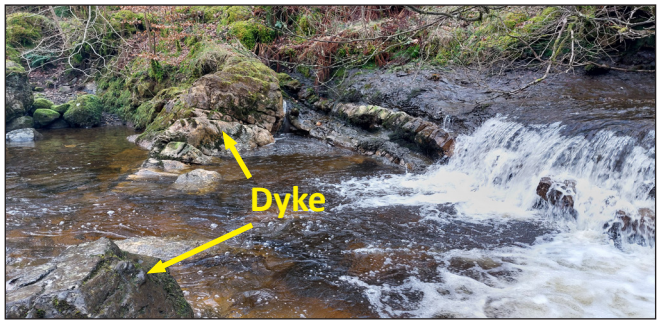
Take the path that starts to the right of the cafe buildings, heading north through a gate with an information board and a path junction. Go straight on here, and once in the grassy area, go left to the side of the Kirk Burn where there a number of small waterfalls and pools at Lady's Linn.

Locality 1 [NS 6103 7984]

Lady's Linn

There are three types of rock in the banks and bed of the burn here. The softer grey rock is a mudstone, deposited originally as clay in a shallow lake. The thin lighter bands are harder limestones, locally known as cementstones as they were used in the past to manufacture cement.

These sediments here have been intruded by a narrow N–S trending almost vertical dyke of igneous rock which was originally a dark dolerite, but has been very strongly altered by carbonate-rich fluids and veined with calcite so that it is pale in colour, even on fresh surfaces.



Go back to path and follow it upstream for about 100 m to an area of larger waterfalls and pools at James' Linn.

Locality 2 [NS 6100 7993]

James' Linn

This locality also exposes the same mudstones and limestones as seen at Locality 1. They are assigned to the Ballagan Formation and mark the start of the Carboniferous Period

in Scotland when the desert sandstones of the underlying Devonian Period became inundated by shallow muddy lakes. Periodically these dried out in quite warm and arid conditions forming soils with calcareous nodules – known as calcretes. These nodules grew in the soil and coalesced into the irregular cementstone bands we see today.

Although no fossils have been found here, the Ballagan Formation at Burnmouth (in the Borders) is internationally famous for its fossils of very early tetrapods (photo), which had just evolved from Devonian fishes. We humans are tetrapods!

At this locality the burn is crossed by a multiple doleritic dyke complex which forms a prominent waterfall. The individual units of this intrusion are, in places, separated from each other by narrow screens of sediment which have been altered by contact metamorphism to such an extent that it is often difficult to tell which is dolerite and which is cementstone. These dykes are believed to have been feeder conduits to the overlying lavas.

Until quite recently it was possible to follow the glen further upstream to see the overlying lavas but fallen trees and loose rocks have made this unsafe; and progress beyond here is not recommended. Instead retrace the outward route back to the path junction and follow this uphill as it winds its way up to the Crow Road. Just below the carpark a path leads north-eastwards through a gate and then downhill on a slanting route to the burn at a series of waterfalls and pools, known as Muckle Alicompen. Beware – the path can be slippy!