

# Excursion to

## The Strathblane Area: 3 September 2011

**Leader: Jim MacDonald**

Report by: *Bill Gray*

Participants: 20 from GSG, 12 from GSE

This was a joint excursion with the Edinburgh Geological Society. The aim of the excursion was to study some exposures of the Lower Carboniferous (Dinantian) succession of the Strathblane area. Our attention was equally focused on the volcanic rocks of the Clyde Plateau Volcanic formation, and the sedimentary formations between the lavas, with the additional bonus of some glaciation features. The study area is bisected by the Campsie Fault, which runs E-W and is downthrown to the south. The locality numbers in this report are those in the handout for the trip.

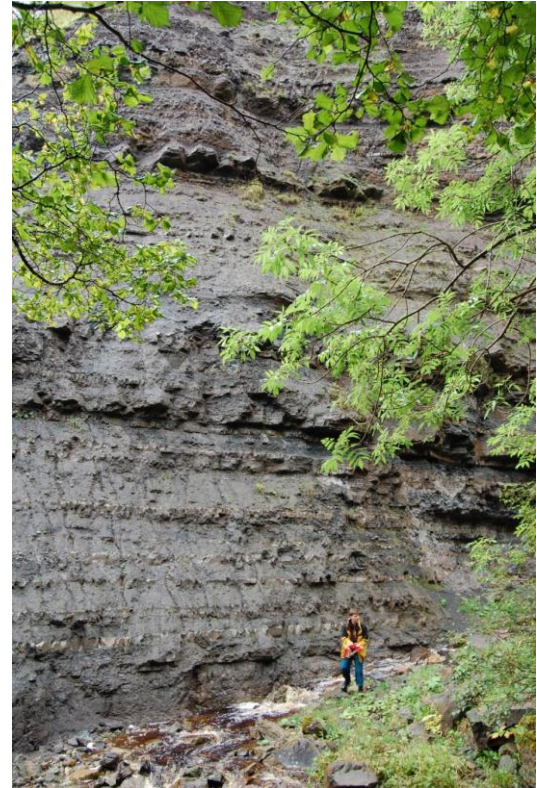
The weather started off wet and miserable, but improved as the day progressed. We had arranged to meet our Edinburgh colleagues at the Kirkhouse Inn at Strathblane, and on our way to the rendezvous we stopped at Loch Ardinning (NS 564 799), which is located on the south side of the Campsie Fault. In fact, there is now little of geological interest to be seen here, as the dam has lost its clay seal and has drained and become overgrown. However, Jim gave us a concise account of the loch's position at the top of the Clyde Plateau Volcanic Formation, on volcanic detritus which is overlain by the Douglas Muir Quartz-Conglomerate, the basal unit of the Craigmaddie Muir Sandstone.

Our Edinburgh colleagues arrived at the Kirkhouse Inn shortly after us, and we all took the chance to warm up with tea and coffee, and also enjoy a slice cake, provided by David from Edinburgh to celebrate his 70<sup>th</sup> birthday. The morning's activity was concentrated on the Ballagan Formation and the lower beds of the Clyde Plateau Volcanic Formation, which lie immediately above it. The buses dropped us at Ballagan House on the A891 (NS 572 795), where Jim explained that we were now just north of the Campsie Fault, and that the lavas in this area had come from the North Campsie Linear Vent-swarm, which also was the source of the prominent volcanic plugs of Dumgoyach, Dumgoyne and Dumfoyne.

We then proceeded down to the Ballagan Burn, where we had our first sight of the Ballagan Formation (NS 572 798). This consists of alternating beds of cementstone (an argillaceous limestone) and mudstone, with veins of gypsum mineralisation. At this locality the strata were displaced by an oblique fault, and were cut by an Early Carboniferous dyke.



We then had a rather tricky walk down a slippery grassy bank, and along an overgrown muddy path to the east bank of the Ballagan Burn (NS 572 800), from where we had an excellent view of the Ballagan Formation on the west bank, with its alternating thick layers of grey mudstone and thin layers of lighter cementstone; we also saw a gypsum vein under a cementstone overhang.



**The Ballagan Formation . The thin, lighter coloured, beds are of cementstone, while the thick, darker, beds are of mudstone.**

After climbing back to the path on the hill flanking the glen, we walked further along it before descending again to examine a hawaiite exposure just north of the Spout of Ballagan (NS 573 802).



This flow has similar platy jointing, microporphyritic texture and chemical composition to that at the Jenny's Lum (see below).

The jointing changes direction from horizontal to vertical, reflecting the path of the original lava flow. Jim described how the microphenocrysts, which are of plagioclase feldspar and up to 2 mm in length, are aligned parallel to the jointing; they were present when the lava was erupted, and the exposure represents an early phase of the magma's evolution.

**Hawaiite exposure**

We now walked back down to Ballagan House, where the buses picked us up and took us to Mugdock Park, where we had our lunch.

The buses then took us to the east end of a minor road (NS 560 789), and we walked along this road as far as Boards. On the way we had a good view of the Campsie Scarp and the fissure known as Jenny's Lum,



**The Campsie Scarp as seen from the Broads road. Jenny's Lum is the dark fissure that can be seen in the centre near the top of the scarp.**



and passed the Gouk Stane (NS 553 791), a large basaltic glacial erratic.

Just north of Boards (NS 543 793), we examined an exposure of ankaramite (Craiglockhart basalt), a rock rich in ferromagnesian minerals (e.g. augite and olivine), which had a vesicular texture at the top. Finally we walked north through Cuilt Wood along a descending muddy path through a series of thick lava flows of Markle basalt and past a series of blocks of ankaramite that had



been loosened from their original location by glacial action. The path took us to the B821 road, where we were met by the buses.

The excursion ended with a visit to the Beech Tree Inn near Dumgoyne for drinks and high tea with our companions from Edinburgh. Jim Martin of the GSG thanked Jim MacDonald for the expertise and enthusiasm with which he had led the excursion, and presented him with a bottle of wine.

### **Selected bibliography**

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