

Arthur's Seat, Salisbury Crags, Edinburgh - an excursion

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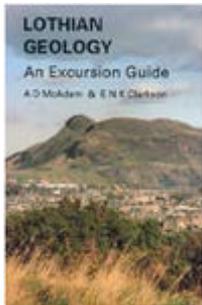
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Arthur's Seat, Salisbury Crags, Edinburgh - an excursion



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By G P Black. From: [Lothian geology: an excursion guide](#). Edited by A D McAdam and E N K Clarkson. 1996

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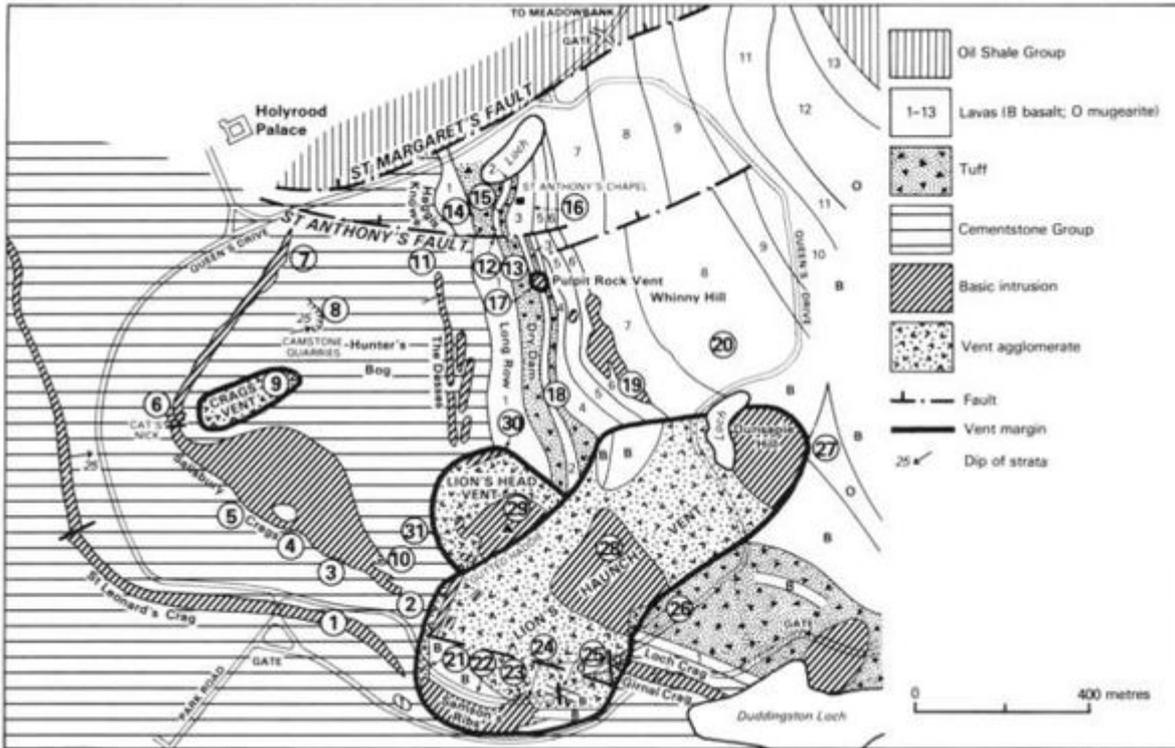
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Access to the Holyrood Park is gained by the Park Road Gate and localities 1 to 10 visited in succession. Alternatively from the Holyrood car park the localities can be visited in the order 8 to 10 followed by 1 to 7.

1. St Leonard's Crag

In a low interrupted line of cliffs to the south of the Queen's Drive the St Leonard's Sill is exposed. The central member of Dunsapie basalt, seen elsewhere, is absent and the sill, about 5 m in thickness, consists throughout of a brownish-red, markedly altered mugearite containing sparse plagioclase phenocrysts and small vesicles.



Arthur's Seat, excursion localities.

2. Queen's Drive: Cementstone Group

On the north side of the Queen's Drive white or pale red sandstones and marls are exposed. Several tons of rock were blasted from this exposure and removed for examination: several fish scales were found and were originally identified as *Holoptychius nobilissimus* suggesting that the strata were of Upper Old Red Sandstone age. Re-investigations have cast doubt on this identification and **Mitchell and Mykura (1962)** put forward strong evidence that the rocks seen in this outcrop belong to the Cementstone Group.

3. Salisbury Crags: Hutton's Section



Hutton's Section, Salisbury Crags. [P005962](#)

The justly famous Hutton's Section of the base of Salisbury Crags Sill is found towards the south-eastern end of the escarpment, and provided Hutton and his followers with telling evidence in favour of magmatic intrusion in the great argument with the Wernerians in the eighteenth century. Beneath the sill lie well-bedded Cementstone Group strata, alternately red and white. The sill transgresses the bedding conspicuously in two places. At the first the sediment against the transgression is crumpled; at the other a wedge of teschenite has been intruded beneath a block of sediment, rotating it upwards from its original position and partly engulfing it in the sill. At the western end of the section, the teschenite immediately above the contact has been chilled to a glassy skin up to a centimetre thick, which has now been devitrified to a greenish material. Above the glass the teschenite is very fine in grain but coarsens markedly upwards. In the rock-face to the south-east of Hutton's section large rafts of sediment can be seen high in the sill. The rafts are not distorted and lie parallel to the strata below the sill. Still farther to the south-west, syenitic segregation veins up to 5 in thickness cut the sill.

4. Hutton's Rock

At the north-western end of the largest disused quarry in the Salisbury Crags Sill, a small isolated rock stands close to the path. Owing its preservation to the interest of Hutton, it is now known as Hutton's Rock. Here teschenite which has been extensively hematitised is cut by a vein of impure hematite several centimetres in thickness.

5. Sill-Sandstone Relations

Here, at the foot of the Salisbury Crags, a mass of red sandstone is bordered above and on the east by the sill. Its other contacts are not seen and it is therefore uncertain whether it is a true xenolith or a tongue of the underlying sediments projecting into the sill. The intrusion of the sill has crumpled the sandstone and has locally produced slight faulting.

6. Cat's Nick: Fault, Quartz-dolerite Dyke

At the Cat's Nick a small east—west fault with a downthrow of a metre or so to the north cuts the Salisbury Crags Sill and the underlying sediments. The teschenite close to the fault is much decomposed and shows spheroidal weathering. A few metres farther to the north, a quartz-dolerite dyke traverses the sill. The dyke, about a metre in width, is much finer in grain than the sill and shows a distinct joint pattern. Just above the path it contains a large strip-xenolith of teschenite.

7. Sill: Upper Contact

In a prominent embayment into the line of the Crags, the upper contact of the teschenite sill is exposed. The teschenite decreases markedly in granularity and becomes vesicular as the contact is approached; the sediments above, white sandstones of the Cementstone Group, show little alteration other than a slight induration.

8. Camstone Quarries: Cementstone Group Sediments

In the disused Camstone Quarries sandstones, shales and cementstones of the Cementstones Group dip eastwards at 25°. Well-developed sun-cracks, ripple-marks and worm-tracks occur and from the cementstones the small crustacean *Estheria peachi* has been obtained.

9. Craggs Vent: Agglomerate

A low mound marks the position of the Craggs Vent and is bounded by a very broken scarp in which the fine-grained agglomerate of the vent is exposed.



Salisbury Crags viewed from Blackford Hill.

10. Sill: Upper Contact, Tachylyte Veins

At the top of the main cliff of the Salisbury Crags, the teschenite sill very close to its upper contact is exposed and is seen to contain vesicles which, in places, are arranged in trains as a result of late magmatic movement. Patches of altered sediment, of Cementstone age, lie upon the teschenite a few metres east of the Crags and the teschenite here is locally cut by veins of dark tachylyte. To the south and east of this locality the sill splits up into a number of leaves separated by thin layers of intervening sediment.

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