

Arthur's Seat, Lion's Haunch and Lion's Head Vents, Edinburgh - an excursion

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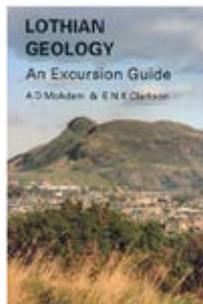
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Arthur's Seat, Lion's Haunch and Lion's Head Vents, Edinburgh - an excursion



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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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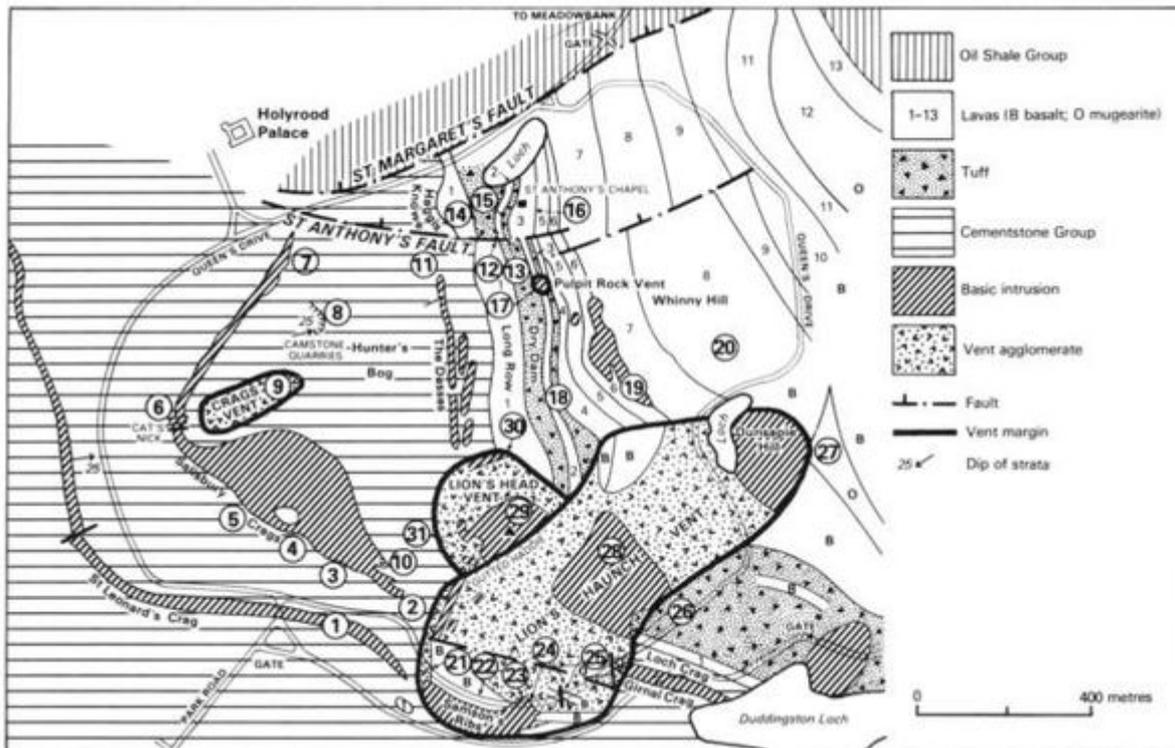
[BGS 1:50 000 Geological Survey of Scotland map. Bedrock](#)

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[BGS 1:25 000 series - Classical areas of British geology Edinburgh District](#) Access to localities 21 to 31 can be made by the Park Road Gate, or from the Dunsapie Loch car park visiting localities 27 to 31 then 21 to 26.

21. Queen's Drive: Samson's Ribs Crater Lavas

The Samson's Ribs crater lavas, exposed in the Queen's Drive, dip towards the centre of the Lion's Haunch Vent. The lowest flow is brecciated throughout and has a slaggy top overlain by a foot of red tuffaceous sandstone. Above comes another lava, again with a slaggy upper surface, and this is in turn succeeded by a third flow. Above this uppermost flow lies the main mass of crudely bedded agglomerate of the Lion's Haunch Vent.



Arthur's Seat, excursion localities.

22. Roche moutonnee, Glacial Striae

From the retaining wall on the north side of the Queen's Drive there protrudes a roche moutonnée. The rock is striated horizontally. the striations tending to narrow towards the east; some plucking of the eastern end of the mass has occurred. The direction and narrowing of the striations, and the plucking. all point to the existence of a stream of ice moving from west to east through the hollow now occupied by the Queen's Drive. A few yards to the east a slickensided surface occurs by the roadside and can be contrasted with the glaciated surface.

23 and 24. Samson's Ribs Intrusion, Agglomerate

A small exposure of columnar Dunsapie basalt occurs on the north side of the Queen's Drive above the retaining wall. The columns, some 20 cm across, plunge southwards. The exposure marks the north-eastern termination of the Samson's Ribs Intrusion, which here cuts the agglomerate overlying the Samson's Ribs crater lavas farther to the west. The main part of the intrusion, which is markedly columnar in nature, is best seen in the cliff below to the Queen's Drive. The north side of the Queen's Drive is here (24) marked by a cliff of coarse agglomerate containing abundant basalt blocks and a lesser proportion of blocks of sedimentary rocks. The basalt blocks are of Dunsapie or Markle type. The matrix in which the blocks lie is a red decomposed basaltic ash.

25. Crater Lavas and Ash

In the cliff above the Queen's Drive a crater lava of Jedburgh basalt rests on a few metres of ashy sediment which, in turn, lie on agglomerate; the lava and sediment dip towards the north-east at a moderate angle. A small north-south fault repeats the slaggy top of the flow and its covering of agglomerate. Approximately 90 m farther to the north-east, a crater of lava of mugearite is seen in the cliff above the Queen's Drive. This flow is covered by ashy sediments which are themselves overlain by agglomerate; the dip of the flow is again towards the north-east. Several small north-south faults cut this mugearite flow.

26. Loch Crag: Vent Margin, Lava 1, Limestone

The southern margin of the Lion's Haunch Vent is exposed above the retaining wall of the Queen's Drive where it can be seen truncating Lava I and the sediments and ashes above and below that flow. The lava forms a low southward facing cliff which can be followed upwards for a short distance from the road until it is cut across by the vent. The actual contact is not seen but can be fixed to within a metre or so. At this point the feeder of the Lion's Haunch Basalt occurs at the vent wall so that the contact is between the sparsely porphyritic Dunsapie basalt of the lava and the highly porphyritic Dunsapie basalt of the feeder. Sediments of the Cementstone Group have been seen below the lava; they are truncated by the vent and lie against agglomerate. Above the lava ash and sediments are visible; they are cut across by the vent which here also contains agglomerate. Blocks of a white limestone identical to a bed seen in situ some feet above the lava, are found sparsely throughout the agglomerates at this locality.

27. Dunsapie Hill: Intrusion, Mugearite Lava

To the east of Dunsapie Hill, a mugearite lava forms a number of small outcrops. The rock is pale purplish-grey and is cut by numerous platy joints. It lies above a Markle flow exposed farther to the south. Both flows are cut by the Dunsapie Hill Intrusion within the Lion's Haunch Vent.

28. Lion's Haunch Basalt

The highly-porphyritic Lion's Haunch Basalt, the remains of a lava-lake resting on the agglomerate which forms the chief infilling of the Lion's Haunch Vent, is well seen in numerous exposures at this locality.

29. Lion's Head Basalt, Viewpoint

[Template:Coord](#) The summit of Arthur's Seat-the Lion's Head-is formed of a glacially moulded basaltic plug which acted as the feeder for Lava 4 and which, on consolidation, blocked the Lion's Head Vent. From the summit the chief geological features of the Lothians and Fife can be clearly seen.

30 and 31. Lion's Head Vent Margin, Agglomerate

This locality lies at the junction of the Lion's Head Vent and Lava 1. On tracing the lava southwards, it becomes shattered and altered close to the vent and its dip increases from less than 20° to 40°.

The actual contact is not visible, but its position can be fixed within a metre. A dyke of Craiglockhart basalt, the feeder of Lava 2, lies within the vent at the junction. On the slope above the dyke the fine agglomerate of the vent is exposed. The agglomerate of the Lion's Head Vent is roughly bedded and has an inwards dip (31). It contains numerous small fragments of Dunsapie and Craiglockhart basalt but no fragments of Markle basalt occur. The small size of the fragments and the absence of Markle blocks distinguish this agglomerate from that of the Lion's Haunch Vent. A large gully, known as the Guttled Haddie, has been eroded along the line of contact between the Lion's Head and the Lion's Haunch vents; some 15 m to the north of this gully a small basalt dyke cuts the Lion's Head Vent.

The return from this excursion can be made either by the Hunter's Bog to the Holyrood Gate or through the low col between the Salisbury Crags and the Lion's Haunch to the Holyrood Park Road Gate.

At all times follow: [The Scottish Access Code](#) and [Code of conduct for geological field work](#)

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