

XVI. *On the Occurrence of Prehnite and other Minerals in the Rocks of Samson's Ribs and Salisbury Crags.*

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WITH little else than the trouble of surveying one of the finest of Edinburgh landscapes, the tourist beginning work amongst the *débris* just to the south of where Samson's ribs overhang the road, and continuing on the road along Salisbury Crags to Holyrood Palace, will meet with a continuous display of the relations specially of zeolitic minerals, and their containing rocks. If he care to pursue the literature of the subject, Daubrée's investigations on the genesis of zeolites, as well as Allport's, Bonney's, and Geikie's petrological researches into the microscopy of the rocks in question, will suggest even more lengthened studies.

Good hand specimens of prehnite are easily obtained amongst the *débris* just mentioned, as well as in the two wall-veins betwixt the columnar pillars above it. Pectolite may also be got here. Large specimens in drusy cavities, such as adorn the magnificent suite of local minerals in the Edinburgh Museum of Science and Art, are only got at rare intervals, when rocks are being blasted for road making and the like. Thus the late Mr. Alex. Rose obtained such a specimen just above Samson's ribs when the Queen's Drive was being cut. The same local mineralogist obtained an equally handsome drusy cavity, filled with prehnite, analcime, and their allies, at the piercing of the Calton Hill Tunnel for the North British Railway. Specimens of the large analcimes, rather plentiful in 1818, when the dolerite quarries along the Radical Road were being worked into Salisbury Crags, adorn the Edinburgh Museum; but Mr. Thomas Allan carefully noted how these were got only when the quarrymen reached the centre of the dolerite bed: as if to anticipate the modern chemical hypotheses of the formation of these minerals, he noted the large proportion of calcareous matter both at the junctions of this bed with the sedimentary strata, as well as in the vents along its course.

Leaving Samson's ribs for the Radical Road, which skirts along Salisbury Crags to near the entrance of the Park at Holyrood, we may glance

in passing at the section of sedimentary strata in a hollow of the Queen's Drive just below the Echoing Rock. For these dolomites, cherty sandstones, and ferruginous clays, will be companions of our walk. They appear here to be cut off by the intrusion of Arthur's Seat itself; and the metamorphoses they undergo are classic representations of the unity of mineralogy and physical geology. The large deserted quarry at the eastern end of Salisbury Crags, containing Hutton's Pulpit with its up-turned vein of hæmatite and calcite, demands a careful scrutiny. Just at its entrance, on climbing up the old spoil-bed, may be seen a white projection through the dolerite which I have elsewhere described as the South vent.* The rock here gives traces of cupric oxide. Towards the back of Hutton's Pulpit, white bounding veins of calcite and other matters cover exposed portions of the greenstone. These form bounding walls of the jointed masses; but the body of the rock is much looser than in the quarry above this one on our walk, indeed on microscopic analysis it shows a preponderance of calcite and zeolites in its composition, while along the footpath above the quarry, steam jet holes of $\frac{1}{4}$ th of an inch or so are distinctly visible. This is Jameson's locality for datholite; though a careful search for boracic acid, by the writer, in the laboratory of the late Dr. George Wilson, in material got here for two months, does not predicate its abundance. Singularly enough, at Corstorphine Hill, another locality for prehnite, harmotome, and pectolite, datholite is also found. The prevalence of these zeolites and their allies in the augitic trappean rocks, as well as their absence from felspathic ones, are characteristic features of the geognosy round Edinburgh.

The "Cats-Nick" at a little hazard may be found a mineralogical treasure-house. Here, Thos. Allan† obtained barite, analcime, calcite, varieties of quartz in colour and form, as also of iron.

Fine specimens of chalcedony were got in a vein, which from its prominence strikes the eye beyond the old quarry, where the Radical Road joins the Queen's Drive beside Holyrood.

A visit to the old quarry in the Hunter's bog behind Salisbury Crags should be undertaken, if only to observe the large constituent quartz crystals of the sandstone.

* *Trans. Ed. Geo. Soc.* Vol. III. pp. 279-291.

† *Trans. Ed. Royal Society*, Vol. VI.