

amethysts." A thin slice prepared for the microscope, and magnified ninety diameters, presented an appearance well shown in the somewhat coarse, but highly characteristic plate which accompanies this notice. At my request Professor Crum Brown kindly took charge of a fragment which he entrusted to Dr Gibson for analysis, who reported on the specimen as follows :

" University of Edinburgh, *March 27th*, 1879.

" *Report upon Crystal of Amethyst Quartz.*

" A qualitative examination was made with a view to determine the nature of the red colouring matter deposited underneath the surface of the crystal. The result of this examination showed the presence of iron, and the absence of copper and other heavy metals. Ferric oxide being of very common occurrence in quartz, there is no reason to doubt that it is the red colouring matter in the crystal examined.

" J. GIBSON, Ph.D."

My first impressions as to the colouring matter of the six-sided crystals of this specimen were thus verified. It might, however, be well to carry the analysis farther by testing for soda, magnesia, or manganese, having previously marked the degree of intensity of the violet blue colour of the specimen. But, apart from this, it will be seen from the pieces in the lump and in section now exhibited, that they are made up as follows: The base on which the crystals rest is a thin layer of fine vesicular trap. Above this is a mass of highly crystalline semi-transparent quartz, about an inch in thickness, thickly packed but yet showing the planes of the crystals less or more well marked, and, on the top of this a thin layer, of granular-like amorphous quartz, out of which the definitely crystallised amethyst proper seems to rise. This may or may not be generally the order of the layers, but in the specimens now before us it is well marked. The dirty red colouring matter is confined to the faces of the hexagonal pyramids—the characteristic crystalline forms of quartz—and is, for the most part, deposited in pretty separate *annuli*, ring within ring. In the specimens now under notice I have not seen any traces