

*On the Occurrence of Delessite in Cautyre.*

By Professor HEDDLE and Mr. STUART THOMSON.

[Read November 20th, 1894.]

**D**ELESSITE is of much rarer occurrence in Scotland than saponite, and moreover it is by no means so characteristic in its appearances.

Its modes of occurrence are much the same, only it is much less frequently the tenant of druses, affecting rather rents or fissures, and in these last it frequently goes to form what may be called a "composite vein." This may be filled for the most part with fibrous calcite, transversely disposed, and the reopening of the fissure is disclosed by the delessite, which, after lining one side of the vein for some distance, suddenly crosses the fibres of the calcite diagonally, and lies between it and the rock upon the opposite side.

Among a series of rocks lately forwarded to me by Mr. Gray, the industrious and observant curator of the admirably arranged little museum at Campbelltown, there was a specimen from Knockscalbert quarry which evidently was either saponite or delessite. The appearance and colour was certainly more that of the latter, but the rarity of that mineral did not leave much room for hope that it was so. The determination of the amount of water having shown that it was not saponite, Mr. Gray was requested to secure if possible a sufficiency for analysis.

This he speedily did, and he also furnished the following notes as to its occurrence.

"It is only found in the very centre of the quarry, a few feet from the bottom, and about 30 feet from the surface, that being the depth of the quarry. At present it shows over an area of about 3 yards. Where it does occur, every bit of rock is completely glazed with it; but the layer of glaze is very thin, as you will see by the hand-specimen which I send."

The physical properties are as follows :—

It has a dark green colour. The thickness of its veins is seldom over half-an-inch—generally it is in mere scales. It is everywhere bright

from the polish of slickenside movements. The direction of the slickenside striæ shows that even within a space of a few inches the rock fragments must have been moving in every direction. It is softer than the nail, and the colour of its streak is dark sap green. It does not break into fragments in water, nor when suddenly placed in the mouth.

The specific gravity was determined on three fragments ;

On 287·27 grains =	2·638
On 158·5     ,,	2·578
On 226·2     ,,	2·609
Mean     ...	<u>2·608</u>

The analysis yielded :—

	1st		2nd		
Silica         ...	34·69	...	34·37		
Alumina       ...	5·48	}	36·88		
Ferric Oxide ...	10·82			}	36·88
Ferrous Oxide	18·71				
Lime         ...	2·49	...	2·16		
Magnesia     ...	12·21	...	12·00		
Water        ...	15·19				
	<u>99·59</u>				

7·29 of the water was given off at 100° C.

Although this composition differs considerably from that of other Scotch delessites, as previously determined by one of us, it yet accords fairly well with that of some foreign delessites.

The inclosing rock—a dense dolerite—is so little altered that it is not easy to say which constituent has yielded the mineral, but it appears to have resulted from an alteration of the augite.