

III.—*Note on Duporthite, a new Asbestiform Mineral.*—By J. H. COLLINS, F.G.S.

THIS mineral occurs in fibrous masses occupying fissures or shrinkage cracks in the serpentine of Duporth, near St. Austell, Cornwall. The thickest veins I have seen are not more than $1\frac{1}{2}$ inches. The fibres are placed transversely across the vein, making generally an angle with the walls of about 70° , so that the crystallization is probably oblique.

The mineral is greenish to brownish gray, has a silky lustre, H about 2 and Sp. Gr. 2.78 : insoluble in HCl, but the iron and magnesia are slowly dissolved out.

Thin fibres are flexible like asbestos. Heated in a matrass the mineral gives off a little water, and becomes lighter coloured ; in forceps thin fibres fuse to a dark glass in the hottest part of the flame. The spectroscope shews the sodium and calcium lines distinctly, but no trace of potassium or lithium.

The following is the analysis :—

	EXP.	THEORY.
Silica	49.21	48.0
Alumina	27.26	30.9
Protoxide of iron ..	6.20	7.2
Magnesia	11.14	12.0
Lime39	
Soda49	
Water	3.90	1.8
Do. <i>hygros.</i>68	
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	99.27	

About half of the water is given off more readily than the other half. If we regard the more obstinate portion of the water as basic, this composition agrees tolerably well with the formula $3(\text{Al}_2\text{O}_3 \text{ Si O}_2) + 5(\frac{2}{3}\text{Mg.}, \frac{1}{3}\text{Fe.}, \frac{1}{3}\text{H})_2 \text{O Si O}_2$. It has some resemblance to chrysotile, anthophyllite, and some of the fibrous hornblendes, but differs widely from them in composition. The mineral which comes

nearest to it in appearance as well as composition in Dana's *Neolite** from Arendat and Eisanach, but this contains more than twice as much magnesia and less than half the alumina. As I cannot find any mineral whose composition at all approaches it, I propose to call it *Duporthite* from the locality—Duporth—in which I discovered it. I have little doubt that much of the so-called chrysotile or fibrous serpentine is really aluminous, and analagous to this mineral.

* System, p. 406.