V. *Note on a Case of Replacement of Quartz by Fluor Spar.*

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THIS unusual substitution appears to have taken place in a rock found by Mr. R. N. Worth, F.G.S., on Trowlesworthy Tor. The specimen was a loose block, and the rock to which Mr. Worth has given the name of Trowlesworthite has not yet been discovered *in situ*. The rock consists of red felspar, fluor-spar, and tourmaline, associated with quartz, and its general character and microscopic structure are described in papers published in the Transactions of the Royal Geological Society of Cornwall, Vol. X. p. 177. The reasons for believing that the rock had been formed from the normal granite of the neighbourhood by substitution of fluor spar from the quartz were the following:—

(1). The fluor-spar occupies about the same proportion of, and is similarly dispersed in the Trowlesworthite as the quartz in the normal granite.

(2). The quartz in the Trowlesworthite is in such intimate association with the black tourmaline, that it seems most probable that this, as in Luxullyanite (see *Min. Mag.* Vol. I. p. 215) is formed from the destruction of a certain part of the felspar, when a considerable amount of silica would be set free; brown tourmaline replacing the mica as in that rock.

(3). The quartz in the normal granite is very full of microlithic enclosures and cavities, while that in the Trowlesworthite is unusually free from these. Using a popular term, the one when viewed with a low-power objective looks 'dirty,' the other 'clean.' To this rule one grain only in the latter rock is an exception, and in that the needles of black tourmaline are wholly wanting.