

NOTE ON

THE MINERAL WILSONITE.

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IN the Supplementary Number of this Magazine for July 1854, p. 499, I published descriptions and analyses of two minerals occurring in crystalline limestone in Bathurst, C.W., one of which I proposed as a new species with the name of Wilsonite. It was described as forming rose-red, translucent, cleavable masses, probably monoclinic in crystallization, with a hardness of 3.5, and a density of 2.765 to 2.776. Lustre vitreous, shining occasionally, pearly on the cleavage surfaces. One of three analyses gave silica, 43.55; alumina, 27.94; oxides of iron and manganese, .20; lime, 6.50; magnesia, 3.81; potash, 8.37; soda, .95; water (loss by ignition), 8.61=99.93. With two other specimens the amounts of silica, alumina, magnesia, and alkalis were very nearly the same, while the loss by ignition was 9.40 and 9.00, and the amounts of lime respectively 6.94 and 6.72.

The subsequent examination of more perfect specimens in the possession of Prof. E. J. Chapman has shown him that this mineral is triclinic, with inclination to the right, and he has kindly furnished the following notes:—"I give you as approximations, the following angles from cleavage faces by the common goniometer:— $P : T = 94^\circ$ ;  $P : e = 145^\circ$ ;  $T : e = 129^\circ$ ;  $P : M$  and  $T : M = 110^\circ$  to  $115^\circ$ . Cleavage with  $P$  and  $T$  perfect, less so with  $M$ ; the cleavage with  $e$  is not easily obtained, but is very

distinct and even. Hardness, 3·5 on the more facile cleavages and their combination edges; 5·5 on the ends of the prismatic concretions. Density, 2·77."

Prof. Chapman also pointed out to me the existence of intermingled carbonate of lime in the specimens which I had previously analysed, and showed that the loss by ignition was in part carbonic acid. I have since found that the finely pulverized mineral yields up nearly the whole of its lime with effervescence to cold dilute hydrochloric acid, which does not attack the silicate. This still retains its rose colour, and is a hydrous silicate of alumina and potash with a little magnesia. The following are the results of the analyses by myself of two specimens, purified by dilute acid (one being from the same mass as the one given above), and a partial analysis of a third specimen by Prof. H. Croft, which he has kindly communicated to me.

	I.	II.	III.
Silica . . . .	17·50	17·70	47·42
Alumina . . . .	31·17	31·22	} 34·80
Magnesia . . . .	4·25	4·14	
Lime . . . .	1·51	·39	·42
Potash . . . .	9·22	9·38	
Soda . . . .	·82	·95	
Water (by ignition)	5·50	5·35	
	<hr/> 99·97	<hr/> 99·13	

The mineral freed from carbonate of lime seems to be constant in composition; and from its crystallization and density, as well from its chemical constitution, to pertain to the felspars.

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