

Cleavage. *g*, imperfect; *a*, *c*, traces. Fracture conchoidal. Transparent...translucent. Lustre vitreous. Wine-yellow...orange-yellow, inclining to grey. Streak white. Brittle. $\mu = 5.0 \dots 5.5$. $G = 2.98 \dots 3.13$.

In thin splinters melts with great difficulty before the blow-pipe into a dark greenish-grey glass. Moistened with sulphuric acid it imparts a faint blueish-green colour to the flame. Is soluble in powder in hot nitric or sulphuric acid with evolution of hydrofluoric acid.

$MgF + Mg^3P$, phosphoric acid 43.32, magnesia 37.57, fluorine 11.45, magnesium 7.66. Part of the magnesia is replaced by lime and protoxide of iron.

Analyses of wagnerite *a* by Fuchs corrected by Rammelsberg, *b*, *c*, *d* by Rammelsberg, *e* the result of *d*, the best of the analyses *b*, *c*, *d*, after excluding the silica:—

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
Phosphoric acid	41.73	41.89	40.23	39.56	40.61
Magnesia	46.66	42.04	38.49	45.07	46.27
Lime	—	1.65	4.40	2.32	2.38
Protox. iron	4.50	2.72	3.31	4.47	4.59
Oxide of mangan.	0.50	—	—	—	—
Alumina	—	0.55	0.96	—	—
Fluorine	13.1	not det.	—	9.12	9.36
Silica	—	—	—	2.68	—

This extremely rare mineral was found in crystals with quartz, in the crevices of a clay slate rock, in the valley of Höllengraben near Werfen in Salzburg.

A crystal in Mr. Brooke's collection shows all the faces enumerated above, of which *l*, *d*, *o*, *f* appear to have been hitherto overlooked.

317. HERDERITE.—Herderite; Dufrenoy. Prismatisches Fluss-Haloid; Mohs. Herderit; Hausmann, Haidinger.

Prismatic. $011,010 = 55^\circ 51'$; $101,001 = 23^\circ 1'$; $110,100 = 57^\circ 56'5$.

a 100, *b* 010 cleavage, *c* 001, *t* 302, *s* 601, *m* 110, *p* 111, *n* 331, *o* 441. The faces *a*, *s* truncate the edge formed by *t* and the face parallel to *t'*; *n*, *o* truncate the edge *pm*; *b* truncates the edge *mm'*.