

AN
ELEMENTARY INTRODUCTION

TO
MINERALOGY,

BY THE LATE

WILLIAM PHILLIPS.

New Edition,

WITH EXTENSIVE ALTERATIONS AND ADDITIONS,

BY

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LONDON:

LONGMAN, BROWN, GREEN, AND LONGMANS; SIMPKIN, MARSHALL, AND
CO.; F. AND J. RIVINGTON; WHITTAKER AND CO.; TEGG AND CO.;
AND D. BOGUE.

1852.

Werther obtained crystalline grains having the form and composition of torberite by boiling $\text{HF} + \text{U}^2\text{P} + 8\text{H}$ with a solution of basic acetate of copper.

351. AUTUNITE.—Uranite (in part); Phillips, Beudant. Pyramidaler Euchlor-Malachit; Mohs. Uranit; Hausmann, Haidinger.

Pyramidal.

The forms and angles are supposed to be the same as those of torberite.

Cleavage. c , very perfect. Fracture not observable. Transparent...translucent. Lustre, pearly on c , vitreous inclining to adamantine on the other faces. Lemon-yellow, sulphur-yellow, siskin-green. Streak sulphur-yellow. Sectile. $\text{H} = 1.0 \dots 2.0$. $\text{G} = 3.0 \dots 3.2$.

In the matrass yields water. Before the blowpipe on charcoal melts into a black globule. With borax in the outer flame forms a yellow glass, in the inner flame a green glass. The solution in nitric acid is yellow, in ammonia colourless.

$\text{CaP} + \text{U}^2\text{P} + 8\text{H}$, phosphoric acid 15.5, oxide of uranium 63.6, lime 6.2, water 15.7.

Analyses of autunite from Autun a by Berzelius, b by Laugier, c by Werther:—

| | a | b | c |
|-----------------------------------|-------|------|-------|
| Phosphoric acid | 15.20 | 14.5 | 14.00 |
| Oxide of uranium | 61.73 | 55.0 | 63.28 |
| Lime | 5.88 | 4.6 | 5.86 |
| Magnesia and protox. mangan. . | 0.20 | — | — |
| Silica and red ox. iron | — | 3.0 | — |
| Barytes | 1.57 | — | 1.03 |
| Oxide of tin | 0.06 | — | — |
| Water | 15.48 | 21.0 | 14.30 |

Is found in crystals, massive, and investing other minerals, in granite at St. Symphorien near Autun, and at St. Yrieux not far from Limoges in France.

352. CHILDRENITE. — Childrenite; Beudant, Mohs, Hausmann, Haidinger.

Prismatic. $011,010 = 46^\circ 26'$; $101,001 = 32^\circ 44'$; $110,100 = 55^\circ 57'$.