

is held by secondary valence. This secondary valence is considered "a term that is used in a vague way to indicate the nature of the forces which bind together molecules in which the primary valences are satisfied, particularly in the cases when an ordinary valence cannot still be assigned to each atom through a rearranging of the bonds."⁶ This field is an interesting one for research and one into which our mineralogists might venture with profit.

NOTES AND NEWS

TOURMALINE CRYSTALS FROM SOUTHWEST AFRICA

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Selected crystals from a shipment of tourmalines recently received by Ward's Natural Science Establishment (see cover 4, *Am. Mineral.*, May, 1926) were submitted to the writer for examination. All of the crystals are loose and no evidence as to the nature of the matrix which carried them is available. In size they vary up to 2×4.5 cm. They are prismatic in habit and many are slender. Though black by reflected light, transmitted light shows their color to be clear transparent bottle green. They possess numerous flaws. The locality from which they came is given as Swakopmund, South West Africa.

Most of the crystals are remarkably well terminated and the principal and largest terminal faces show K : of Goldschmidt (see below). This is modified on the edges and summit by the smaller faces of two trigonal pyramids. The terminal faces of the crystals are etched, especially $p.x$. Prism faces are generally comparatively smooth and bright, with vertical striations. A study of a number of crystals by means of the two-circle reflecting and contact goniometer shows the following forms to be present: m ($10\bar{1}0$) prominent, striated; a ($11\bar{2}0$) prominent, striated; σ ($21\bar{3}0$) narrow, inconspicuous; r ($10\bar{1}1$) at summit of crystal; $p.x$. ($11\bar{2}1$) Gdt., modifying edges of K ; K : ($41\bar{5}1$) Gdt., steep, prominent form adjacent to prism zone.

The writer wishes to express his thanks to Ward's Nat. Sci. Est. for the use of these crystals.

PYRITE FROM CORNWALL, PENNSYLVANIA

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The pyrite crystals herein briefly described belong to two lots, which were measured independently by the above authors. The results of the measurements are combined in the present article.

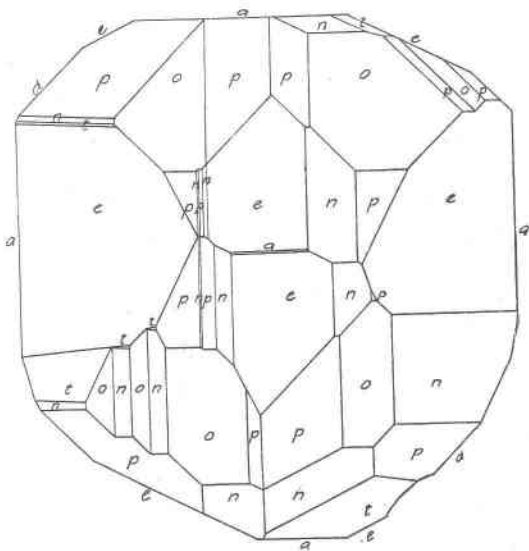
Those measured by the senior writer were five in number and were kindly submitted by Professor J. F. Kemp of Columbia University, who stated that they

⁶ The constitution of nickel carbonyl and the nature of secondary valence: A. A. Blanchard and W. L. Gilliland, *Jour. Am. Chem. Soc.*, **48**, 4, p. 881 (1926).

"came from a pyrite vein in the magnetite on the south side of the Big or Middle Pit, near its center and close to the limestone." They are a centimeter or more in diameter, and their habit ranges from octahedral to cubic, with many diploid modifications.

The crystal whose figure is shown (measured and drawn by the junior author) was found near the south wall of the Middle Pit on the higher grade of the mine. Its diameter is one half a centimeter and it shows forty-four measurable faces.

Forms present are as follows: $c(001)$; $e(012)$; $a(047)$; $d(011)$; $g(112)$; $p(111)$; $u(122)$; $v(233)$; $\psi(124)$; $\gamma(234)$, $x(123)$; $I(247)$; $H(249)$; $z(135)$; $*$ (155); $X(345)$; $*m_1(3:4:12)$; $*E_3(2:3:15)$; $*E_2(1:4:20)$; $*g_2(4:11:46)$. (Gdt. lettering.)



Of these forms the following new ones (indicated *) were identified by their measurements:

FORMS	OBS.		CALC.		
	φ	ρ	φ	ρ	
* (155)	11°00'	45°33'	11°18'	45°33'	A form which has recently been described. ¹
$m_1(3: 4:12)$	36 33	21 40	36 52	22 37	Diploid, observed twice on one crystal.
$E_3(2: 3:15)$	32 48	13 17	33 42	13 31	Diploid, observed twice on one crystal.
$g_2(4:11:46)$	20 00	12 10	19 59	12 14	Diploid, observed once.
$E_2(1: 4:20)$	13 20	11 15	14 02	11 39	Diploid, observed once.

There were also a large number of vicinal faces, which are excluded from the present discussion.

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¹Zimanyi, on crystals from Alsószajó, Gömör, Hungary; *Math. Termesettud. Erisito*, 1918, XXXVI, p. 409.