APPENDIX to XXXVI.—*Crystallographic Characters of Mairogallol.*

By W. J. LEWIS.

THE crystals of mairogallol given me by Dr. Stenhouse to examine vary in the number of the forms observed, according to the nature of the solution from which they have been crystallised, but they are referable to the same crystallographic elements.

They crystallise in the oblique system, and the elements are:—

$(100, 101) = 47^\circ 25'$; $(101, 001) = 37^\circ 25'$; $(010, 111) = 45^\circ 22\frac{1}{2}'$.
 $a : b : c = 1 : 0.6156 : 0.8252$.

The forms observed as represented on the stereographic projection (fig. 1) are a 100, l 101, c 001, t $\bar{1}01$, s $\bar{2}01$, m 110, u 120, e $\bar{1}11$, p $\bar{1}22$, q $\bar{2}\bar{1}1$.

FIG. 1.

The following are the principal angles observed and calculated:—

	Calculated.	Observed.
$\left\{ \begin{array}{l} al \dots\dots\dots \end{array} \right.$	$47^\circ 25'$	$47^\circ 25'$
$\left\{ \begin{array}{l} lc \dots\dots\dots \end{array} \right.$	$37^\circ 25'$	$37^\circ 27'$
$\left\{ \begin{array}{l} ct \dots\dots\dots \end{array} \right.$	$41^\circ 36'$	$41^\circ 20.5'$
$\left\{ \begin{array}{l} ts \dots\dots\dots \end{array} \right.$	$21^\circ 1'$	$20^\circ 42'$
$\left\{ \begin{array}{l} ta_1 \dots\dots\dots \end{array} \right.$	$53^\circ 34'$	$53^\circ 34'$
$\left\{ \begin{array}{l} am \dots\dots\dots \end{array} \right.$	$55^\circ 34'$	$55^\circ 34'$
$\left\{ \begin{array}{l} a\mu \dots\dots\dots \end{array} \right.$	$71^\circ 5'$	$71^\circ 17'$
$\left\{ \begin{array}{l} lm \dots\dots\dots \end{array} \right.$	$67^\circ 30\frac{1}{4}'$	$67^\circ 29'$
$\left\{ \begin{array}{l} t,m \dots\dots\dots \end{array} \right.$	$70^\circ 22\frac{2}{3}'$	$70^\circ 22'$
$\left\{ \begin{array}{l} cm \dots\dots\dots \end{array} \right.$	$87^\circ 5'$	$87^\circ 18\frac{1}{2}'$
$\left\{ \begin{array}{l} lp \dots\dots\dots \end{array} \right.$	$71^\circ 10'$	$71^\circ 18'$
$\left\{ \begin{array}{l} cp \dots\dots\dots \end{array} \right.$	$52^\circ 52'$	$52^\circ 45'$
$\left\{ \begin{array}{l} tp \dots\dots\dots \end{array} \right.$	$51^\circ 30'$	$51^\circ 6'$
$\left\{ \begin{array}{l} mp \dots\dots\dots \end{array} \right.$	$59^\circ 33'$	$59^\circ 39'$
		3 c 2

The crystals are colourless and of a lustre between vitreous and resinous; the face *c* is rough and pitted.

The simplest crystals are obtained from a solution in acetic acid and ether; they consist of the prism planes *m*, and the base *c* (see fig. 2).

FIG. 2.

Those crystallised from benzene have in addition the planes *l*, *a*, *t*, and *p*, and show a tendency to extension in the direction of the orthodiagonal (see fig. 3).

FIG. 3.

Others, associated with delicate needles are represented by fig. 4.

FIG. 4.

The determination of the angles of the faces of the needle-like prisms did not permit of great accuracy, but such approximations as I obtained, led me to the belief that they consist of the planes *c*, *l*, and *t*.

The acute mean line is in the direction of the axis of symmetry, and the optic axes lie in a plane making an angle of about $60^{\circ} 6'$ with the plane *t*, and of $18^{\circ} 50'$ with the plane *l*.