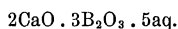


ART. LV.— *On Colemanite, a new Borate of Lime*; by
A. WENDELL JACKSON.

A NEW borate of lime has recently been determined by J. T. Evans, of the California Academy of Sciences. His analysis fixes its formula as follows:



It differs from pandermite in containing five instead of three molecules of water. Its main interest lies however in its morphological relations. Mr. Evans kindly sent me a crystal for investigation and subsequently I obtained from another source twenty other crystals. They are all small, colorless and in the main with faces in good condition. The examination in the polariscope showed that the crystals were monoclinic. The plane of the optical axes is normal to the clinopinacoid and makes an angle of $83^\circ 25'$ with the chief axis (in front).

With a primitive form having

$$a : \bar{b} : c = 0.774843 : 1 : 0.540998 \text{ and } \beta = 69^\circ 50' 45''$$

I have determined already the following forms:

Pinacoids: $\alpha P \bar{\alpha}$, $\alpha P \alpha$, $0P$.

Prisms: $\alpha P \bar{3}$, $\alpha P \bar{3}_2$, $\alpha P \bar{2}$, $\alpha P \bar{1}_0^3$, αP , $\alpha P \bar{2}$.

Clinodomes: $P \alpha$, $2P \alpha$.

Hemidomes: $\frac{4}{3}P \bar{\alpha}$, $6P \bar{\alpha}$, $4P' \bar{\alpha}$, $2P \bar{\alpha}$, $P \bar{\alpha}$, $-P \bar{\alpha}$.

Hemipyramids: P , $2P$, $-P$, $-3P$, $-\frac{1}{6}P$, $2P \bar{2}$, $3P \bar{2}_2$, $4P \bar{2}$, $\frac{3}{2}P \bar{2}_2$, $2P \bar{2}$, $3P \bar{3}$,
 $-3P \bar{3}$, $3P \bar{3}$, $4P \bar{4}$, $-3P \bar{3}$.

The crystals are all highly complex; one of them has twenty-four different forms upon it. At least two distinct types are represented; one in which the basal pinacoid and the hemidome $P \alpha$ are largely developed and the other with basal pinacoid and most of the hemidomes either absent or very small. The primitive prism αP is largely developed upon all and determines the prevailing columnar habit of the crystals.