## Lecontite $(NH_4,K)Na(SO_4)\cdot 2H_2O$



**Crystal Data:** Orthorhombic. *Point Group:* 222. Small prismatic crystals, short along [001]; commonly very fine-grained.

**Physical Properties:** Hardness = 2–2.5 D(meas.) = 1.745 (synthetic). D(calc.) = 1.747 Soluble in $H_2O$, taste saline, bitter.

**Optical Properties:** Transparent. *Color:* Colorless. *Luster:* Vitreous. *Optical Class:* Biaxial (–) (synthetic). *Orientation:* $X = c$; $Y = a$; $Z = b$. *Dispersion:* $r > v$, or $r < v$, strong. $\alpha = 1.440(3)$ $\beta = 1.452(3)$ $\gamma = 1.453(3)$ 2V(meas.) = 40°–43° 2V(calc.) = 29°44′

**Cell Data:** *Space Group:* $P2_12_12_1$ (synthetic). $a = 8.216(8)$ $b = 12.854(1)$ $c = 6.232(8)$ Z = 4

**X-ray Powder Pattern:** Las Piedras Cave, Honduras.
3.038 (100), 5.085 (83), 4.649 (83), 4.972 (67), 3.783 (56), 3.325 (56), 3.923 (50)

**Chemistry:**

| | (1) |
|---|---|
| $SO_3$ | 44.97 |
| $P_2O_5$ | trace |
| $Na_2O$ | 17.56 |
| $K_2O$ | 2.76 |
| $(NH_4)_2O$ | 12.94 |
| $H_2O$ | 19.45 |
| insol. | 2.41 |
| Total | 100.09 |

(1) Las Piedras Cave, Honduras; insoluble residue is organic 2.30%, inorganic 0.11%; corresponds to $[(NH_4)_{0.88}K_{0.10}]_{\Sigma=0.98}Na_{1.01}(SO_4)_{1.00}\cdot 1.92H_2O$.

**Occurrence:** An early product of the breakdown of bat guano.

**Association:** Thénardite, mascagnite, probable.

**Distribution:** From Las Piedras Cave, near Comayagua, 62 km northwest of Tegucigalpa, Honduras.

**Name:** Honoring John Lawrence LeConte (1825–1883), American entomologist, University of California, Berkeley, California, USA, who discovered the mineral.

**Type Material:** Philadelphia Academy of Natural Sciences, Philadelphia, Pennsylvania, Vaux 15337; Yale University, New Haven, Connecticut, USA, 1696.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 438–439. (2) Winchell, H. and R.J. Benoit (1951) Taylorite, mascagnite, aphthitalite, lecontite, and oxammite from guano. Amer. Mineral., 36, 590–602. (3) Faust, R.J. and F.D. Bloss (1963) X-ray study of lecontite. Amer. Mineral., 48, 180–188. (4) Corazza, E., C. Sabelli, and G. Giuseppetti (1967) The crystal structure of lecontite, $NaNH_4SO_4.2H_2O$. Acta Cryst., 22, 683–687.