ULEXITE FROM LANG, CALIFORNIA

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THE minerals of the colemanite deposits at Lang have been described by Prof. Eakle,[1] as comprising colemanite, howlite and calcite. During the summer of 1916 the writer visited the locality and had his attention called to the ulexite. The association of ulexite and colemanite seems never to have been noted before and because of the light it may shed upon the origin of the colemanite, a short description seems desirable. Unfortunately the significance of the association of the two minerals was not realized at the time of the visit, and little study of their exact relations was made.

The material was collected in the main stope of the Sterling Borax Co. mine near the footwall, where it occurred in considerable quantities. It differs in appearance somewhat from the "cotton-ball" variety, being more compact and lacking the usual loose fibrous structure. It is fibrous more in the manner of satin spar, except that the fibers lie in all directions. The luster is satiny, color white, H. 3.5, a decidedly greater value than that ordinarily assigned to the species. The surface is botryoidal, resembling that of the associated howlite. The internal structure, however, serves to differentiate between the two, the howlite having a compact, porcelain-like structure.

Before the blowpipe the mineral gives all the reactions for ulexite—yields water, fuses at 1 with intumescence, colors the flame deep yellow. A partial analysis gave: B_2O_3, 43.13, CaO, 14.14, H_2O, 35.68, Na_2O (by diff.), 7.05; sum 100.00 per cent.

A critical study of this deposit would probably clear up some of the problems concerning the origin of colemanite. Professor Eakle regards the Lang deposits as being formed by the action of boric acid solutions upon marl. The occurrence of ulexite in such large amounts seems to indicate some sort of lake deposit, ulexite being typically a mineral of the saline residues of the desiccated lakes of the western United States and South America. It is possible that the colemanite was derived from the ulexite by the action of alkaline chloride solutions, a synthesis performed by Van't Hoff. The waters of the streams are decidedly alkaline in the vicinity of the deposits, and the stream beds become coated with incrustations of various salts. The exact nature of the waters, however, has never been investigated.

[1] *Univ. Calif. Publ., Bull. Dept. Geol.* 6, No. 9.