

but the period of its phosphorescence is too short to be seen by the unaided eye. It is also weakly responsive to excitation by the X-rays.

#### TRIBO-LUMINESCENT ZINC SULFIDE

This interesting compound may be prepared as follows:

Zinc carbonate or oxide	100 grams
Flowers of sulfur	30 grams
Black oxide of manganese	0.5 grams

The above ingredients must be in a fine powder and intimately mixed. Place the mixture in a porcelain crucible and calcine at a full red heat for about 30 minutes, or until the mixture assumes a light yellow color thruout when cold.

If a pinch of the above is put on a piece of card and rubbed with the blade of a knife, a stream of yellow scintillations will be produced. It shows no fluorescence or phosphorescence under the ultra violet rays from the iron spark, but cathode rays produce a brilliant yellow fluorescence without any perceptible afterglow. It also shows a yellow fluorescence under X-rays, without noticeable phosphorescence.

#### EAKLEITE FROM ISLE ROYALE, MICHIGAN<sup>1</sup>

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A specimen labeled "Wollastonite, Isle Royale, Mich." in the United States National Museum was recently noticed to have the general appearance of the eakleite from the original locality at St. Inez, California, and further study has confirmed the suspicion that the mineral actually is eakleite.

The specimen consists of an aggregation of radiating fibers, with a somewhat silky luster and a pale pink color. The material is exceedingly tough. Microscopic examination showed that it is made up mostly of eakleite, with properties similar to those of the mineral from California. The Isle Royale mineral is finer fibered and is less pure, as it contains several per cent of a weakly birefracting material that is probably a sort of serpentine or chlorite. This foreign material forms nests of small grains in the fibrous masses. The optical properties of this eakleite, compared with those of the original material from California, are:

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<i>Locality</i>	<i>Isle Royale</i>	<i>St. Inez</i>
$\alpha$	1.579 $\pm$ 0.005	1.583
$\beta$		1.583
$\gamma$	1.590 $\pm$ 0.005	1.593
Extinction	Z  elongation	Z  elongation
Optical character	+	+
Axial angle	Small	Very small

The material for analysis was not entirely free from the chloritic admixture, but was of sufficient purity to indicate the nature of the mineral. The analysis, made by standard methods, is given below, together with the analysis of the original material from California, for comparison.

<i>Locality</i>	<i>Isle Royale</i>	<i>St. Inez</i>
SiO <sub>2</sub>	50.88	50.17
Fe <sub>2</sub> O <sub>3</sub>	1.32	1.04
CaO	42.88	45.45
MgO	1.10	tr.
Na <sub>2</sub> O	0.55	none
H <sub>2</sub> O(-)	0.12	
H <sub>2</sub> O(+)	3.68	3.18
	100.53	99.84

The optical properties distinguish this mineral from wollastonite and indicate that it is actually eakleite, and the chemical analyses of the two occurrences are sufficiently close, to definitely confirm its assignment to that species. The great toughness of the eakleite from both localities is noteworthy. Dana gives as a locality for wollastonite the Cliff Mine, Keweenaw Point, and Isle Royale, Michigan, and describes the mineral as a very tough variety, having a red color. It seems evident that what is referred to is the eakleite described above. Dana notes the locality to be exhausted, but specimens will probably be found among the wollastonites in old collections.