Sample in grams	U_3O_8, g.	≈%U	$\frac{Pb}{U+0.36\ Th}$	
6.9609	0.0016	0.019	0.076	Pb=207.90
5.73249	0.00108	0.016	0.086	Th=232.12
				U=238.14

Assuming the absence of "ordinary" lead from this material we may calculate its age as 584 million years, using the formula:—

$$\frac{\log (U+0.36\ Th+1.155\ Pb)-(\log U+0.36\ Th)}{6.6\times 10^{-5}} \text{ million years.}$$

It is hoped that the isotopic composition of the contained lead will be determined in the near future. Until this has been done, the above age is only an approximation. The field evidence would connect this monazite with the Cranberry Granite, presumably of pre-Cambrian age, a correlation in fair accord with the figure here found.

The courtesy of the Director of the United States Geological Survey and of the Assistant Secretary of the United States National Museum, for extending the facilities of their laboratories is gratefully acknowledged, as is the assistance of Dr. C. N. Fenner in the utilization of his analytical methods.

DICKITE FROM ST. LOUIS COUNTY, MISSOURI

VICTOR T. ALLEN, *St. Louis University, St. Louis, Mo.*

In a collection of geodes in the museum of St. Louis University, donated by V. Sosnovec in 1905, is one labeled "Flint Geode with Kaolin Endomorph, St. Louis County, Missouri." The writer has been aware for some time that the kaolin mineral in this geode is dickite, but postponed publishing a description of the occurrence until more exact information was available regarding the locality. Since the excellent paper by Tarr and Keller[1] on "Dickite in Missouri" has appeared it seems desirable to record this additional occurrence of dickite in Missouri even though the section of St. Louis county and the geologic formation furnishing the specimen are unknown. With the accepted hydrothermal origin of dickite, evidence is thus afforded that hydrothermal solutions reached east central Missouri during post-Mississippian time.

The geode (Fig. 1), which is approximately 4×6 centimeters, is composed of layers of chalcedony and quartz and encloses near the center a mass of dickite 8×18 millimeters, and near the side a smaller one 5×10 millimeters. No sulphides are associated with these minerals. The con-

[1] Tarr, W. A., and Keller, W. D., Dickite in Missouri: *Am. Mineral.*, vol. **21**, pp. 109–114, 1936.

tact between the chalcedony and the dickite is sharp and lacks the leached porous zone mentioned by Tarr and Keller in the occurrence near Columbia.

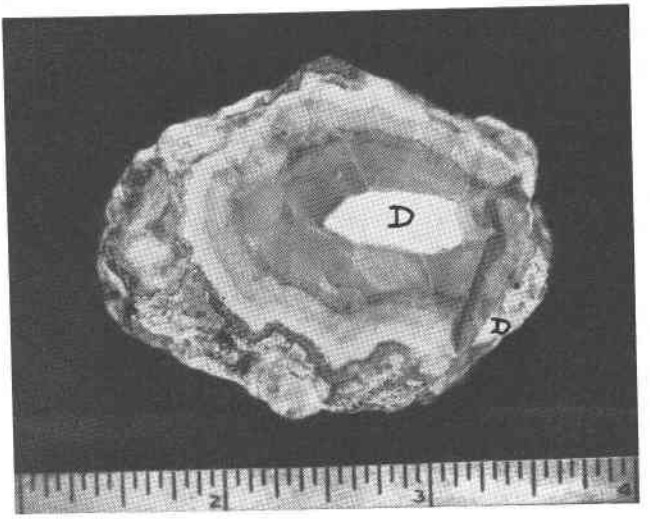

FIG. 1. Chalcedony and quartz geode enclosing dickite (D) near the center and at the side. About natural size. St. Louis Co., Mo.

FIG. 2. Photomicrograph of dickite in geode from St. Louis Co., Mo. ×146.

The dickite is snow white and has a distinctly glistening appearance. Under the microscope many of the cleavage flakes have the typical hexagonal shape of dickite (Fig. 2). The maximum diameter of the

crystals observed was .028 millimeters. The refractive index γ of the cleavage plates was $1.565 \pm .003$, and the maximum observed extinction angle on $\{010\}$ against the base was 18°.

AN OCCURRENCE OF LARGE ZIRCON NEEDLES IN A BASIC PEGMATITE

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Crystals of zircon up to $7\frac{1}{4}$ inches long and 1/16 to 1/8 inch in diameter occur in a basic pegmatite in the SW $\frac{1}{4}$ of section 29, T 45 N, R 2 W, about 2 miles north of the town of Mellen, Wisconsin. The pegmatite, which is about $1\frac{1}{2}$ feet wide, cuts the gabbro country rock. It contains large crystals of basic plagioclase, hornblende and biotite, penetrated by the needles of zircon.

The zircon is non-magnetic, has a specific gravity greater than 3 and shows prismatic parting. Its color is cinnamon brown with adamantine lustre. The crystals are uniaxial and positive, showing parallel extinction. The refractive index of the ordinary ray is 1.925 ± 0.002, and the birefringence determined on thin sections of grains with the universal stage is 0.054 ± 0.002. An *x*-ray powder photograph by George W. Field of the University of Wisconsin shows a typical zircon pattern.

Dr. Henri Mngemach, the noted crystallographer and curator of the collections at Strasbourg, died on the night of June 10th at Strasbourg.