In general the concretions are unusual for the variety of minerals composing them and for their structure. They are certainly concretionary forms as is clearly indicated by their structure and mode of occurrence in a limited area and horizon of the shale. An explanation of the mode of origin does not readily appear.

It has been suggested that the original concretions were formed before induration of the shale. The geode structure and numerous minerals indicate a change from the original material as concretions normally consist of but one or two minerals, and grow from the center outward. Perhaps the original concretions consisted of some soluble mineral which was dissolved and various minerals substituted, notably quartz. This would account for the partly filled centers of many of the concretions. The solutions which accomplished this result may very well have been of hydrothermal nature, as the surrounding country is invaded by numerous porphyry sills, dikes, and laccoliths. The presence of much sericite in the quartz would be a further indication of hydrothermal action.

THE IDENTITY OF NEWTONITE WITH ALUNITE

WILLIAM F. FOSHAG,[1] *United States National Museum*

In 1891 Brackett and Williams[2] described two new clay minerals from Arkansas. One occurring as soft white masses at Sneeds Creek in Newton County was named *newtonite* after the locality. This locality has recently been revisited and described by E. T. Wherry.[3]

Newtonite, as described by Brackett and Williams, is found in nodular masses of a pure white color embedded in a soft clay. Microscopic examination showed it to be a remarkably pure substance. The characteristic feature of this mineral is its occurrence in minute rhomb-shaped crystals clearly distinguishable under the higher powers of the microscope. An analysis of this mineral yielded the following:

[1] Published with the permission of the Secretary of the Smithsonian Institution.
[2] Am. J. Sci., **42**, 11, 1891.
[3] Am. Mineral., **10**, 350-351, 1925.

ANALYSIS OF NEWTONITE. (BRACKETT AND WILLIAMS.)

SiO_2	40.22
Al_2O_3	35.27
Fe_2O_3	0.21
CaO	0.54
MgO	trace
Na_2O	0.99
K_2O	0.73
Ignition loss	22.89
	100.85

The above quoted analysis is similar in every way to that of normal halloysite, Al_2O_3. $2SiO_2$. aq. According to the original description newtonite is only slightly attacked by hydrochloric acid but is completely soluble in sulphuric acid with the separation of silica. It is also decomposed by boiling caustic potash solution.

Material exactly similar in every way to that described by Brackett and Williams was collected by Wherry and turned over to the United States National Museum, in which the supposed species had been hitherto unrepresented, with the recommendation that it be reinvestigated, as it seemed to occupy an anomalous position in the aluminum silicate series, and some error might have been made in connection with the original analysis. Accordingly, the writer undertook the examination of this mineral. Before the analysis was begun Professor E. S. Larsen suggested the possibility of newtonite being identical with alunite and this has actually proven to be the case. For analysis a soft nodule was selected and screened to separate the coarse quartz that was present in small amounts. The material used for analysis was made up of minute rhomb-shaped crystals with less than 1% of quartz. The analysis follows:

ANALYSIS OF ALUNITE (NEWTONITE)

SO_3	34.92
SiO_2	0.96
Al_2O_3	38.56
CaO	0.78
MgO	0.30
K_2O	8.23
Na_2O	0.80
H_2O	15.15
	99.70

From the above analysis it is quite evident that the material represented by the minute rhomb-shaped crystals is in fact, normal alunite. The optical properties of these crystals because of their small size are rather difficult to measure. Their mean index of refraction is 1.58. Larsen[4] gives for newtonite the following optical properties.

$\omega = 1.560$, $\epsilon = 1.580$. Optically positive.

These values are essentially the same as those for alunite:

$\omega = 1.572$, $\epsilon = 1.592$. The chemical reactions given for newtonite are also similar to those of alunite. Both are insoluble in hydrochloric acid but soluble in sulphuric acid and in boiling caustic potash solution.

There can be but little doubt that the crystalline material made up of minute rhomb-shaped crystals and described as newtonite is really alunite. The analysis of the material given by Brackett and Williams cannot be interpreted as a mixture of alunite and quartz, as some of the specimens actually are, but the analysis and the optical investigations must have been made on two entirely different materials. From the analysis given in the original description the material investigated chemically must almost certainly have been halloysite. "Newtonite" is therefore to be stricken from the list of mineral species.

[4] *U. S. Geological Survey Bulletin*, No. **679**, p. 115.

SOME MINERALS FROM THE KENSINGTON MICA MINE, MONTGOMERY COUNTY, MARYLAND[1]

EARL V. SHANNON

An old mica mine, worked from 1882 to 1884 and known then as the Gilmore mine is located in Montgomery County, Maryland, on Northwest Branch about 2 miles north of Burnt Mills. This mine has been described briefly by Sterrett.[2] The only noteworthy fact regarding the mineralogy of the locality heretofore recorded was the occurrence of gahnite. While the mine was being worked it was visited by Doctors Geo. P. Merrill and Frank Wigglesworth Clarke. On this visit Dr. Merrill collected a large mass of gahnite.

[1] Published by permission of the Secretary of the Smithsonian Institution. The seventh preliminary paper on the minerals of Maryland prepared in cooperation with the Maryland Geological Survey.

[2] Douglas B. Sterrett. Mica Deposits of the U. S. *U. S. Geol. Survey Bulletin* **740**, pp. 104-105.