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VERMICULAR GIBBSITE IN THE PENSAUKEN OF NEW JERSEY

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Vermiforms found near South River, New Jersey and in at least five other localities in the Pensauken formation of the New Jersey coastal plain were definitely identified as mainly composed of gibbsite by differential thermal analysis, *x*-ray diffraction, and chemical analysis. They occur in coarse sand, average 0.5 to 2.0 mm. in length, but a few specimens were as long as 6 mm. (Fig. 1). Gibbsite is also found there as whitish aggregates cementing coarse quartz grains. The veriforms are very similar in aspect to those found in South Carolina, California, and other localities and identified as kaolinite (1). A hand picked sample from South River showed the following mineral composition:

gibbsite	87%
kaolinite	6%
goethite	5%
other	2%

FIG. 1. Microphotograph of vermicular gibbsite, South River, New Jersey. ×14

A more detailed paper on the occurrence and genesis of these vermiforms is in preparation.

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LOW TEMPERATURE PHASE TRANSITION OF COLEMANITE

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In recent years several workers (1, 2, 3) by means of pyroelectric, ferroelectric, and nuclear magnetic resonance measurements have obtained evidence that colemanite, $CaB_3O_4(OH)_3 \cdot H_2O$, room temperature space group $P2_1/a$ (4, 5), undergoes a transition near 0° C. to a noncentrosymmetric phase. This phase change can also be observed with x-ray diffraction techniques.

Precession photographs of the $h0l$ and $0kl$ reciprocal lattice nets at room temperature and at −30° C. were taken using MoK_α radiation with a Zr filter. The single crystal fragment was from a colemanite specimen from Death Valley, California, kindly supplied by Dr. C. L. Christ of the U. S. Geological Survey.

Within the limits of error there was no change in the cell dimensions, which agree with the published values (5), and no changes were observed on the $0kl$ net. However, the low temperature $h0l$ net contained very weak reflections from the $70\bar{1}$, $50\bar{2}$, $90\bar{5}$, and $70\bar{6}$ planes which establishes that the glide plane does not exist in the low temperature form. The transition between the room temperature $P2_1/a$ phase and the low temperature $P2_1$ phase is readily reversible.

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