atomic proportions on the basis of Si+Al+Be=13. The results of this calculation suggest the following formula for bavenite:

$$H_xCa_4Be_{2+x}Al_{2-x}Si_9O_{27}\cdot nH_2O$$

where $x$ varies from 0.10 to 0.84, the average total oxygen is 28 and the average $n=1.08$.

Determinations of the lattice parameters are noted in Table 2. Data listed under 3 were derived from the powder data given by Switzer and Reichen (1960) after first indexing the data with the cell of Ksanda and Merwin (1933). The powder data do not appear to require the larger cell found by Claringbull (1940). The data give $V=555$ for bavenite and 553 for pilinite. For formula deduced above, using $V=554$, the calculated density for $x=0$, $n=1$ is 2.80 and for $x=1$, $n=1$ it is 2.75. The latter is in close agreement with the measured values 2.745 (Ksanda and Merwin, 1933), 2.74 (Claringbull, 1940) and others given in Table 1.

With a fibrous mineral such as bavenite, measured values of specific gravity are generally low, and it is unlikely that such measurements could be accurate enough to confirm the variations in $x$.

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# ROGERSITE=WEINSCHENKITE[1]

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The University of Michigan Mineralogical Collections contain a single small specimen (*ca.* 1×.75×.5 inches), labelled "Rogersite on Euxenite, Mitchell Co., N.C.". Palache *et al.* (1944, p. 800) state that rogersite is "Probably an altered samarskite . . . . Of little validity." Rogersite was described by Smith in 1877 (p. 367) as a hydrated columbate of rare earths of the yttrium subgroup. Smith (1877, p. 367) describes the mineral as follows: "On some of the samarskite, but more especially on

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TABLE 1. *X*-RAY POWDER DIFFRACTION DATA FOR ROGERSITE AND WEINSCHENKITE

| 1. Rogersite, Mitchell Co., N. C. | | 2. Weinschenkite, Kelly Bank Mine, Rockbridge Co., Virginia (ASTM II—126) | |
|---|---|---|---|
| d (Å) | I | d (Å) | I |
| 7.5 | 100 | 7.51 | 1.0 |
| 5.1 | 20 | | |
| 4.6 | 20 | | |
| 4.15 | 100 | 4.18 | 1.0 |
| 3.7 | 30 | 3.74 | .6 |
| 3.0 | 100 | 3.01 | 1.0 |
| 2.8 | 60 | 2.82 | .6 |
| 2.6 | 60 | 2.60 | .5 |
| 2.49 | 30 | | |
| 2.45 | 30 | | |
| 2.39 | 40 | 2.39 | .5 |
| 2.16 | 45 | 2.164 | .7 |
| | | 2.042 | .5 |
| | | 1.965 | .5 |
| 1.85 | 40 | 1.855 | .5 |
| 1.82 | 30 | 1.825 | .5 |
| 1.75–1.77 | 65B | 1.774 | .8 |
| | | 1.755 | .6 |
| 1.63 | 40 | 1.638 | .5 |
| 1.58 | 20 | 1.594 | .5 |
| | | (10 other lines) | |

the euxenite, a white crust was found adhering with some degree of firmness, and on examining it under the glass, it presented a mammillary structure, sometimes like little, pearly beads."

The rogersite of our specimen corresponds to this description. *X*-ray powder data indicate that the mineral coated by the rogersite is samarskite, in our specimen. An *x*-ray powder photograph of the rogersite gives spacings and intensities that correspond in detail to those of weinschenkite (Table 1).

The analyses by Smith (1877) are as follows:

| | | |
|---|---|---|
| Water | 17.41 | 16.34 |
| Columbic acid | 18.10 | 20.21 |
| Yttria, etc. | 60.12 | (lost) |
| | 95.63 | |

The water content is approximately correct for weinschenkite, which contains 16.38% $H_2O$. The method of analysis for niobium is not indicated. The specific gravities are comparable: weinschenkite 3.26–3.27; rogersite 3.313.

This study was supported by Michigan Memorial Phoenix Project 204.

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# SAMPLE CONTAINER CONTAMINATION IN THE INFRARED SPECTRA OF MINERALS

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Many infrared spectra of otherwise pure minerals show the characteristic peaks of polystyrene abraded from the walls of the sample containers during preparation. In the commonly used alkali halide-pelleting technique, the sample and the potassium bromide (KBr) are shaken on a dentist's amalgamator or "Wig-L-Bug." Despite the small length of time involved (one to two minutes) sufficient abrasion takes place for the contaminant to be readily visible in the spectrum of the ensuing mixture. Polystyrene has a very marked infrared spectrum, and its presence is still observable even at concentrations far below 1 per cent.

The capsules often supplied with the amalgamator are made of polystyrene with polyethylene caps. A ball of hard "plexiglass" (polymethacrylate) is used inside the capsule to assist in the mixing action.

It is extremely important that *steel* capsules be used for mineralogical samples, rather than the plastic vials. Preferably the plexiglass ball should also be replaced with a small, hard glass bead. The beads possess little or no infrared spectrum and their effect cannot be seen in the spectrum of the sample.

Tracings of typical infrared curves, in the region from 1500 $\text{cm}^{-1}$ (6.6 microns) to 660 $\text{cm}^{-1}$ (15.0 microns) appear in Fig. 1. Curve A was prepared from powdered KBr without any shaking in the Wig-L-Bug. The KBr in curve B was shaken in a steel capsule for 2 minutes, with a glass bead, and shows only a small, broad dip in the region of 1020 $\text{cm}^{-1}$ (9.8 microns). Curves C and D show the characteristic doublets (solid black) of polystyrene at 1490, 1448 $\text{cm}^{-1}$ (6.70, 6.92 microns) and 752,692 $\text{cm}^{-1}$ (13.30, 14.45 microns). The KBr was shaken in the polystyrene vials with