

Lithology of the Mystery Stone

Based on examination (both macroscopic and microscopic) by Eugene L. Boudette, former New Hampshire State Geologist, December 20, 1994.

Observations

- Banded (layered, laminated), indicating sedimentary, volcanic, or metamorphic origin.
- Very fine grained and highly cemented. Not cryptocrystalline. Crystals visible with 10X hand lens.
- Principal mineral appears to be quartz, with broken grains visible. Also some black grains visible (not biotite). No mica present. No feldspar minerals. A larger broken surface is needed to do a complete lithology, including hardness test.

Conclusions

- Because quartz is probably the dominant mineral, the rock could be either sandstone or quartzite, but due to the fine grains, apparent high density, high degree of cementation, and smooth, hard finish, it is probably quartzite of a type not readily recognizable as a New Hampshire rock.
- It could also be mylonite, a layered cataclastic (shattered or granulated) rock formed by milling under high pressure in fault zones.
- Although not a familiar rock type in the state, New Hampshire cannot yet be ruled out as the source locality.

Notes regarding working of the stone

- Turned on a lathe.
- Carving done after turning, as nose does not rise above surface of ovoid.
- Carving could have been done with either power or hand tools, including dental tools, using carbide or diamond tips or drill bits.