those in cooler climates. Our finding is very similar to that of Scarratt et al. (2006), which found a pearl inside *Crassostrea virginica* that was attached to an adductor scar. In our case, the pearl was attached to the tissues near an adductor scar. This finding demonstrates the very rare phenomenon of edible oysters producing natural pearls. However, further work will be needed to determine its chemical composition using highly accurate analytical methods.

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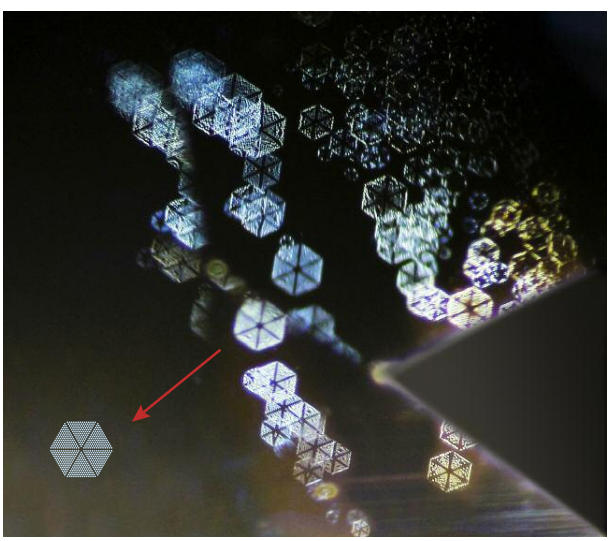
Natural sapphire with trapiche pattern inclusions. A blue gemstone pendant was recently submitted to Guild Gem Laboratories for identification. Standard gemological testing identified it as a sapphire, with a refractive index of 1.762–1.770 and birefringence of 0.008. Fourier-transform infrared (FTIR) spectroscopy combined with microscopic observation confirmed it was a natural sapphire. The UV-Vis spectrum indicated a basalt-related origin owing to relatively high iron content. The FTIR transmitted spectrum also revealed a 3309 series with peaks at 3366, 3309, 3232, and 3185 cm^{-1}, which are commonly seen in basalt-related sapphire.

Figure 14. The regular hexagonal inclusions consisted of six independent units, resembling a trapiche pattern. Photomicrograph and illustration by Yizhi Zhao; field of view 1.70 mm.



Microscopic observation showed several colorless crystals and fluid inclusions under reflective and transmitted light. Using a fiber-optic light, we also observed very interesting scenes of whitish clouds (figure 14) consisting of arrays of hexagonal particles. These particles seemed to be flat and parallel to each other. A distinct uniaxial interference pattern was observed when viewing perpendicular to these particles under the polariscope equipped with a conoscope, which proved that they were parallel to the basal plane (0001) crystalline face of corundum. Further observations revealed that each particle possessed six nearly identical triangular sectors, divided by six arms with hexagonal symmetry. Based on our microscopic observation and estimation, the diameters of the hexagons ranged from approximately 0.06 to 0.13 mm. This pattern was very similar to the trapiche structure seen in some sapphire, ruby, and emerald.

The depth of the inclusions prohibited Raman spectroscopy testing, but we will monitor this phenomenon in other samples for further study in the future.

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Opals revisited. In the 1980s, the author and his wife, Corky, acquired large quantities of Virgin Valley "wet" opal specimens displayed in glass domes with water and other specimens immersed in silicone oil. The domes had black rubber stoppers on the bottom. The mine representative had put them in water and silicone oil to enhance their beauty, since wetting the surface gives the illusion of a polished gem specimen.

Opal is a hydrated amorphous silica, and those with a high water content tend to craze and crack if left to dry. If a specimen is inclined to craze or crack, placing it in a liquid does not stabilize it or heal the cracks within, but it does delay the "day of reckoning" when the opal eventually deteriorates.

The specimens displayed in the domes with water began forming deposits, and within months the water became cloudy and the domes were crusted with precipitate from dissolved minerals. Those in silicone oil fared better, but eventually they too deteriorated, with the silicone oil taking on a yellow cast from the black rubber stoppers, which appeared to coat the opals with a yellow crust (figure 15).

After years of changing the water and silicone oil, the cleaning and repackaging eventually became very time-consuming. The author removed all the wet specimens from their domes, cleaned and wrapped them in paper towels, and put them in boxes. The boxes with the now-dry opal specimens were packed away and stored in the garage, where they remained for more than 27 years.

In July 2019, the author found the boxes containing these beautiful and long-forgotten opals. The results were astonishing. They had not fallen apart, and they looked more stable than they had when dried and put away. The cracks were