

# Discovery of Green Apophyllite at Poona

Since no mineral species is more definitely identified in the public mind with Indian zeolites than the superb emerald-green vanadian apophyllite (even though it is not really a zeolite) from the quarries at Pashan near Poona, a brief historical note about the discovery and exploitation of this material may be in order.

The Pashan quarries, which were shut down by government edict more than 12 years ago, have long since been overtaken and engulfed by the fast-expanding city of Pune (as Poona is now spelled). But in their mineral specimen heyday during the 1970's and 1980's the quarries dotted a line of bare hills overlooking a barren expanse of usually parched agricultural land. The only noteworthy nearby landmark on any map was the town of Khadakvasla, site of the National Defense Academy, India's "West Point," some 5 to 10 km away. The name "Pashan" applies today to a favored suburb of greater Pune, but in 1971, when bright green apophyllite was discovered in a few of the quarries, the name Pashan applied to a smattering of stalls that vehicular passersby would barely notice.

The green apophyllite discovery was made by an American couple, Nell Roe and her pastor husband, who were doing a stint as teachers in India at Spicer College, a Seventh Day Adventist institution situated in the countryside just a kilometer or two from the Pashan quarries. It turned out that Nell Roe had been an amateur mineral collector in America and had actually attended a mineral show or two. When the Roes stumbled across bright green apophyllite from one or two of the several Pashan quarries, they immediately realized that they were on to something very unusual. The rich green color was quite unlike the yellowish green hues that were commonly seen in blocky, pseudocubic apophyllite crystals from the Bombay-Poona railway cuts and tunnels. Another feature of the Pashan apophyllite crystals was their pronounced elongated tetragonal habit with well-developed pyramidal terminations.

The Roes knew little about valuation of mineral specimens and had no previous exposure to the cutthroat business of commercial mineral acquisition. Ingenuously seeking to capitalize on their fortuitous find, the Roes showed their apophyllite specimens to as many domestic and foreign mineral folk as they could turn up, among them Mehta, Tyebjee, Kela, and the young Makki brothers from India, as well as Currier and Kothavala from the USA. And once a specimen or two had been seen by a select handful of collectors in America, the rush was really on! Still, relatively little material actually changed hands. One reason was that the amount of specimen material being extracted at the quarries in those early days was small. Another was that no matter how high a price was offered to Nell Roe by mineral buyers, she held back, unwilling to sell more than a few of her pieces to any one buyer out of fear that she was being taken advantage of. Frustration prevailed. Several enraged mineral buyers stormed away from the Roe residence at Spicer College vowing never to come back. But they returned, of course, drawn inexorably by the uniquely beautiful green apophyllite crystals.

Naturally, all the more seasoned Indian mineral dealers tried to get specimens directly from the quarry workers, but to their astonishment they found that the workers exhibited unbudging loyalty to Pastor and Mrs. Roe. The green apophyllite pieces encountered during quarrying were steadfastly saved for the American missionary couple. It turns out that the American missionaries had made a practice of regularly visiting the quarries for a long while, even before they stumbled onto green apophyllite, in order to provide the desperately poor workers and their families with aid and assistance in the form of food items, basic health care, and simple human concern. Is it any wonder the workers remained true to the Roes?

The entire scene at the Pashan quarries changed almost overnight when the Roes, stressed out by trying to do business with hard-nosed mineral dealers, pestered by an unending series of mineral seekers and collectors, and intruded upon in their primary work for Spicer College, left India to relocate in the United States. It was a circumstance and opportunity that had been foreseen, prepared for, and patiently awaited by two enterprising, energetic, and capable young college men, Fasi and Mujahid, the sons of Mohammad Makki. Unlike their unassuming naturalist father, the young Makkis were fired with aspiration to be players on the international stage. Taking full advantage of their intimate familiarity with Indian languages and customs, their willingness to engage in backbreaking labor themselves, and their canny ability to navigate their way through the shoals of arcane bureaucratic regulations, the Makki brothers embarked on a unique Indian enterprise. First, they gained unassailable legal license and lease from the government to conduct quarrying at two of the dozen or so quarries in the Pashan Hills. Then they designed their operations in such a way that their primary product of value would be mineral specimens. The basalt excavated in the process (which was of poor quality, anyway, because it was shot full of amygdular fillings and cavities) would be disposed of for whatever it could bring. For the next 18 years or so, first the Makki brothers together, and later Fasi Makki on his own, gained world renown for the name "Pashan" and for the unsurpassably spectacular specimens, many of extreme beauty and delicacy, which were extracted from the "Makki quarries."

These two quarries have proven to be by far the most abundant producers of deep green apophyllite out of the several quarries at Pashan. Clearly, the Makki brothers did a creditable job of assessing their potential. Other quarries, a couple of them within a distance of just a hundred meters or less, and apparently on the same stratigraphic horizon, have also produced fine mineral specimens of mesolite, calcite, "mirror" apophyllite, stilbite, and heulandite. But none of the other quarries have produced the spectacular "greens" that have made Pashan world-famous in mineral circles.

Ultimately, urbanization and population pressures from Pune's booming metropolitan expansion forced closure of the Makki quarries and the others in September of 1989.

Rustam Z. Kothavala