Violin Maker's Instruments Rivaled the Storied Stradivarius

By Emily Langer / Washington Post Staff Writer / Sunday, August 16, 2009

Carleen Hutchins, 98, a violin maker who crafted some of the finest instruments of her time, invented new ones and, through science, came as close as anyone ever has to reproducing the venerated sound of the Stradivarius, died Aug. 7 at her home in Wolfeboro, N.H. She had congestive heart failure.

Mrs. Hutchins spent six decades challenging the rampant notion that no modern craftsman -- or woman -- could compete with Antonio Stradivari and other 17th- and 18th-century violin makers from Cremona, Italy, whose instruments are among the most prized possessions in classical music.

She insisted that the secret to their superior sound was not in the wood; not, as some experts speculated, in the bacteria that ate away at the wood, making it more permeable; not in the powdery pumice from Mount Vesuvius that Stradivari may or may not have used to thicken his varnish; and most certainly not in some mystical genius that only he and the other old Cremona masters possessed.

Mrs. Hutchins argued that science, particularly the study of acoustics, was what made a Stradivarius a Stradivarius -- and that it was also what could make her own creations just as good.

For some musicians and luthiers, or makers of string instruments, she might as well have claimed that, with enough sketches and study, any painter could reproduce the masterpieces of Leonardo da Vinci.

"The old-time violin makers hate my guts," she told a Newport News, Va., reporter in 1999. "I've been at it since 1947, and there's a camp that still won't accept it. I'm putting numbers on their mystique."

Mrs. Hutchins conducted much of her research in the basement of her longtime home in Montclair, N.J., where for acoustical reasons the ceiling was reinforced with half a foot of concrete and the walls were lined with velvet drapes. The house, which a friend once described as "sort of a rat's nest," contained more than 2,000 files of research on the acoustics of string instruments; those files are now held by Stanford University.

A simple household decoration helped her make perhaps her most important discovery of all: She sprinkled Christmas glitter on free-plates -- the pieces of wood that become the front and back of a finished violin -- and watched how they danced and then settled in response to sound vibrations.

"Using that method, it took me tests on 200 instruments in the making and 20 years to find the optimal frequency relationships between the top and back," she told the Minneapolis Star Tribune in 1998. "Now, violin makers around the world are learning this method to help them make fine instruments every time."

Some competitors called it "pseudoscience," but Mrs. Hutchins's work earned her a place among the top luthiers in the world. The cellist Yo-Yo Ma used one of her instruments -- an outsize viola that rests on a peg and is played upright like a cello -- in a Bartok concerto recorded on his 1994 Grammy Award-winning "New York Album."

In 1957, based on a suggestion from the classical composer Henry Brant, Mrs. Hutchins began working on a violin octet, a set of eight instruments ranging from the tiny treble violin, which is tuned an octave higher than a standard violin, to a deep-voiced seven-foot behemoth. Lined up next to each other, they look like Russian matryoshka dolls.

The octet became known as the new violin family and shook the classical music world, which until then was accustomed to quartets and their more limited range of notes.

"Her idea is to rationalize the string family . . . to fill in some of the gaps," Laurence Libin, the curator of the Metropolitan Museum of Art's musical instruments department, told the New York Times in 1989 on the occasion of an exhibit that included Mrs. Hutchins's work. The 2000 premiere of the Hutchins Consort, an octet based in Southern California and named in her honor, was "one of the most exciting moments" of her life, she said. She was 88 at the time.

Carleen Maley Hutchins was born in Springfield, Mass., on May 24, 1911. She grew up playing the trumpet and liked to brag that she outdid the boys in her class. In high school, when most girls were taking home economics, Mrs. Hutchins signed up for woodworking, a skill that served her well in her future career.

She graduated from Cornell in 1933 with a degree in biology -- another field without many women -- and in 1942 earned a master's degree in education from New York University before marrying Morton Hutchins, a chemist.

In the late 1940s, when she was teaching science at a girls' school in New York City, some friends convinced Mrs. Hutchins to join their chamber music group. She scraped together $75 for a viola but was quickly disappointed in the purchase. So her uncle, an instrument maker, encouraged her to build her own viola. The project took two years, but she was hooked.

About that time, Mrs. Hutchins met Frederick A. Saunders, a Harvard physicist, musician and scholar of acoustics, and showed him her handmade fiddle. "Young lady," he said, "I'd like to see your next one."

Together with several other aficionados, Saunders and Mrs. Hutchins founded the Catgut Acoustical Society, an organization of physicists, engineers, mathematicians and musicians who pooled their expertise to improve the science of acoustics. The group's name is derived from the use of dried animal intestines to make strings for violins and other instruments.

During her career, Mrs. Hutchins built and tested more than 400 stringed instruments. She did it while raising two children, Cassie Coons of Wolfeboro and William Hutchins of Bethesda. Both survive her, as do six grandchildren. Her husband died in 2004.

Mrs. Hutchins was the author of dozens of technical publications and the editor of two volumes on violin acoustics. Her awards included an honorary fellowship from the Acoustical Society of America, a rarely awarded prize whose other recipients included Thomas Edison.

She told the New York Times, "I'm only measuring . . . what fine violin makers have known in their fingers for centuries."