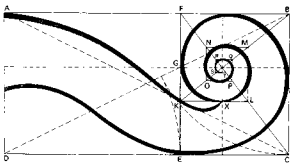

Maker's Bench

Violin Making 1720-1820-1920-2020

by John Waddle

1720

In the year 1720, Antonio Stradivari was 76 years old; he was the dominant violin maker in Cremona, if not all of Italy at that time. His son Francesco was 49, and his son Omobono was 41. Another son, Giovanni Batta Martino, was 17, but would only live seven more years. The Stradivari workshop produced an astonishing number of instruments including violins, violas, cellos, gambas, viols, guitars, mandolins, harps, and bows, all of extremely high quality, establishing a standard that is still defining the very meaning of quality even today.

Bows in Stradivari's time were made of ironwood and snakewood and various hardwoods. The curvature of the bows was away from the hair, and the frog was pulled back and clipped into a notch in the stick to tension the hair. Bows were not made to standard lengths or weights. Violins, violas, and cellos were strung with natural gut strings. The necks were nailed on to the body through the upper block, and bass bars, used to support the tops on the bass side, were much smaller and lighter in 1720 than they are now.

Joseph Guarneri, known as Joseph Filius Guarneri (the son of Andrea Guarneri), was 54 years old; Joseph's brother Pietro, who had moved to Mantua, died in 1720. Joseph's older son Pietro Guarneri, who moved to Venice, was 25, and Joseph's younger son Giovanni Battista Guarneri, who would become known as "del Gesu", because of the symbol he put on his labels, was 22 years old in 1720.

Hieronymous Amati ll, grandson of Nicolo Amati, and the last of the Amati dynasty of violin makers, was 71, but was having a hard time competing with the Stradivari workshop.

Vincenzo Rugeri, the last of the Rugeri dynasty of violin makers died in 1719.

Carlo Bergonzi was 37 years old in 1720, and his son Michael Angelo would not be born until 1721. They would move into the Stradivari home in 1746, and would finish some of the work left in the shop.

Giovanni Battista Guadagnini was 9 years old in 1720.

Carlo Tononi was born in Bologna, but by 1720 had moved to Venice. He was 45 in 1720. Also in Venice were Domenico Montagnana, who was 34, and Matteo Gofriller, who was 64 years old in 1720. Santo Serafin, who had moved to Venice in 1717, was 21.

Pietro Giacomo Rogeri, the son of Giovanni Battista Rogeri, who in 1720 was 55 years old, was living and working in Brescia.

David Tecchler, a German luthier, who came from Fussen, was working in Rome, and was 54 years old in 1720.

Allesandro Gagliano, the founder of the Gagliano dynasty of violin makers, was working in Naples in 1720.

Jacob Stainer, of Absam, Germany, died in 1683, but his influence on violin making cannot be underestimated. His violins were copied by thousands of makers not only in Germany, but all of Europe, including parts of Italy, and America.

Johann Sebastian Bach finished writing the *Partita in D minor* for solo violin, the *Chaconne*, in 1720, when he was 35 years old.

Antonio Stradivari died in 1737.

1820

The Napoleonic wars started in 1803, and ended in 1815.

Photo DEA PICTURE Library, collection De Agostini

Johann Sebastian Bach with his sons, Germany 1730

In 1820, Ludwig van Beethoven was working on his *Ninth Symphony*, which would become one of his greatest accomplishments.

By 1820, many of the instruments made up until then had been altered. String making had evolved, and the necks, which had been nailed on to the bodies, needed to be grafted and re-set into the bodies. Original bass bars were removed and replaced with bigger, stronger ones. Much of this work was carried out in shops like the Mantegazza's in Milan, run by Francesco and Carlo Mantegazza, and the workshop of Jean-Baptiste Vuillaume in Paris, who became the most important maker and dealer in Europe in the 19th century.

It was Francois Xavier Tourte, born in 1748, who is credited with making pernambuco the standard material for bow making, establishing the standard length and weight of the bows and the modern frog with an adjustable screw. Tourte was 72 years old in the year 1820.

The Vuillaume workshop not only created over 3,000 instruments, but also vast numbers of the highest qualities of bows using the talents of some of the best bow makers of the time. One such bow maker was Dominique Peccatte, who was only ten years old in 1820, but would prove to have a huge influence on the craft of bow making, which continues to this day.

Vuillaume, and many more luthiers in Paris and London in the early 1800s started to make more and more accurate copies of Stradivari's instruments, Amati, and Guarneri instruments as well, which by then were becoming more and more noticed and in demanded by top players. In the 1800s, copying the work of the Cremonese master makers, and especially Stradivari, but Joseph Guarneri "del Gesu" as well, gradually became more popular and

desirable than copying the work Jacob Stainer or the Amati's.

1920

The First World War ended in 1918.

In 1920, the first complete performance of Gustav Holst's *The Planets* was given by The London Symphony Orchestra, and the composer Ralph Vaughn Williams piece *The Lark Ascending* was published. The 1920s were the era of George Gershwin, Irving Berlin, Duke Ellington, Leonard Bernstein and Dmitri Shostakovich.

In the 1920s, thousands of violins, violas, cellos, basses and bows were produced, mostly in Europe, with Germany, France and Czechoslovakia being dominant in terms of sheer numbers. Most of the instruments they made were copies of Stradivari and Guarneri. Many of them were produced for the U.S. market, and sold through Sears and Montgomery Wards. Many of them had Stradivari and Guarneri labels. They were made by assembly line. Parts were made individually by hand by skilled workers, and assembled by other skilled workers, varnished by other skilled workers, and set up and adjusted by other skilled workers, and sold mostly by mail order or by dealers in larger cities. Bows were made out of Brazil wood or pernambuco, with ebony frogs, with either silver or nickel silver mountings. More expensive bows could be obtained with ivory or tortoise shell frogs, and sometimes with gold mountings.

These materials were easily obtainable and plentiful, until it was realized globally that the resource might be running out and perhaps we needed to pay more attention to sustainability. Unfortunately, as in the case of elephant ivory, hawksbill tortoise, Brazilian rosewood, and now Mauritius and Madagascar ebony, it was too late.

The best ebony came from Mauritius. It was pure black, dense, and hard, but a joy to work with. Unfortunately, the Dutch hauled it away by the tons in ships until it was virtually all used up and gone. It took five hundred years to grow some of the trees they cut down, and no-one thought to replace them with more ebony trees. Instead they planted sugar cane.

Simone Fernando Sacconi was 25 years old in 1920. Born in Rome, he went on to be one of the most notable violin makers of his time. He received his early training in Italy before moving to New York and working in the shops of Emil Herrmann and then Rembert Wurlitzer. He worked on a large number of the most valuable instruments, and knew many famous musicians. He was considered a fine maker, repairman, and an expert on Stradivari. In 1979, his book *I Segreti di Stradivari (The Secrets of Stradivari)* was first published. The book has influenced many of the luthiers working today.

One person Sacconi helped was Carleen Hutchins, who was only 9 years old in 1920, but would go on to become a violin maker, and acoustics researcher. Her research on the acoustics of violins *The Physics of Violins* was published in *Scientific American* in 1962, and her work on *The Acoustics of Violin Plates* was published in *Scientific American* in 1981. Hutchins was a tireless researcher in the field of free plate tuning, and also in the development of the new violin family octet, both subjects that could be articles by themselves.

After Stradivari died, and when Stradivari instruments gradually became the most sought after, the idea emerged that there must be "a secret" to their sound. Stradivari's instruments have been studied extensively from every angle. They have been CT scanned, photographed, measured, scanned with lasers, and tested with every scientific measuring device. The wood and varnish have been analyzed. No single "secret" has been found, but countless details have been noted and recorded. Researchers have conducted "double blind" tests where Stradivari instruments were played, along with good modern instruments, by professional players who were behind a screen so the audience could not see the instruments and did not know which ones they were playing, and the Stradivari's did not sound better. Musicians who were told which was the Strad and which was the modern instrument would invariably decide that the Strad sounded better, but when the musicians wore dark glasses and didn't know which one was which, they often chose the modern instrument.

2020

The year 2020 will come soon, and we don't know yet what it will bring, but it seems safe to predict that China will make the most instruments and bows.

The Chinese were known mainly for cheap student instruments up until the 1970s, when they started trying to learn what the rest of the world was doing. Chinese makers were allowed to go to Europe and America and study in violin making schools and with professional luthiers. Many of them went back to China and taught others. Now China makes more instruments and bows than any other country, and Chinese violin makers have been consistently winning prizes at international violin making competitions, along with Asian players winning prizes in playing competitions. The idea that instruments or bows from a particular country have a particular sound is changing as more information and resources are shared globally. Access to materials, like wood, and varnish supplies is the same now for everybody no matter where you live, so now if you are a Chinese violin maker, you can use Bosnian maple just like anybody else if you want to. If you are a Chinese bow maker, you can use pernambuco from Brazil just like anybody else.

In order to keep up, many makers outside of China are using more machines rather than hiring more people. Computer numerically controlled (CNC) machines are being used more in Europe and America because labor still costs more in Europe and America. China has plenty of people, so instruments and bows there are still made by hand, or more likely, by many hands.

New information is available now readily through our access to the Internet, and technology has allowed for advances in string making as well as instrument making. More and more people are using digital machine carving, computed tomography (CT scanning), and lasers for measuring and carving. 3-D printing using a greater variety of materials is becoming more advanced and widely used.

The good news for musicians is that the quality of instruments and bows being made now is far better than 100 years ago, and a fine instrument can be had for relatively low cost due to global competition. The Cremona master made instruments, and French master made bows will continue to go up in cost, but quite satisfactory instruments at lower cost are plentiful.

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Originally published in MNSOTA's *String Notes* — Fall 2019 (Vol. 22, No. 1)