



THE ADVENTURES
of
A CELLO

REVISED EDITION
With a New Epilogue

CARLOS
PRIETO

Foreword by
ÁLVARO MUTIS

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The Adventures of a Cello
Revised Edition, with a New Epilogue

TRANSLATED BY ELENA C. MURRAY
FOREWORD BY ÁLVARO MUTIS



Jeanne and Michael Klein

in honor of Bob Freeman

Ellen Randall

in honor of Elle Alexander Middleton

and Lowell Lebermann.

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To María Isabel

To the memory of my parents, Cécile and Carlos

To my brother, Juan Luis

To Carlos Miguel, Isabel, and Mauricio

To the Prieto Quartets

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The Adventures of a Cello and the Stories and Memories of Its Happy Owner

ÁLVARO MUTIS

As far as I recall, seldom has the word “exhaustive” been so appropriately used as when describing this delightful book, whose title alone promises a good read. *The Adventures of a Cello*, by the renowned cellist and writer Carlos Prieto, thoroughly lives up to our expectations. However, before going any further, it is worth noting that the very concept of this book is highly unusual. To the best of our knowledge, none of the great musicians or composers, past or present, has ever thought of telling the story behind the instrument that has so loyally accompanied them for so many years. What is the reason for this deliberate, inexcusable oversight? I will not attempt to elaborate on this subject. This chronicle, by Carlos Prieto, a world-famous cellist and a cultured, sensitive man with the inexhaustible curiosity of the sages, has succeeded in solving this mystery so completely that I am finally at peace.

Before actually telling the dramatic story of his Piatti, which, incidentally, Alexander Dumas, Eugene Sue, or Sir Walter Scott would have gladly claimed as his own, Prieto introduces us to the world of violin making and the history of its remote and honorable origins, in a style that is both entertaining and scholarly. This introduction is fundamental to the perilous journey undertaken by the cello, known as the Piatti, a journey that began in 1720 and continues to the present day. After almost 300 years that witnessed the most radical, turbulent changes in Western history, the Piatti still prevails, vibrant as ever, still undergoing countless adventures and misadventures.

This historical survey prepares us for the tours that the Piatti and its current owner and devotee have made throughout the world, a musical odyssey that fills us not only with envy, but also with an insatiable curiosity about their experiences in countries undergoing unpredictable transformations.

However, Prieto does not stop there. He then presents us with a comprehensive description of music written for the cello from the seventeenth century to the present.

Finally, in order to ascertain the role of the cello today, Prieto provides brief profiles of the great contemporary cellists. To reinforce the rich contents of this comprehensive work, Carlos Prieto's book provides readers with two indispensable repertoires: the first on the principal works written for the cello in this century, classified by country and author, while the second refers to Latin America, Spain, and Portugal.

Consequently, the reader now possesses a book of unprecedented value and importance in the history of music. The author combines a highly personal, moving tribute with outstanding historiographic work in the field of music, his cello acting as his motivator and guide throughout the life together. This book is unquestionably a beautiful love story. Let us thank Carlos Prieto for filling such a great void in the lives of all us inveterate music lovers.

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To my wife, María Isabel. Her support and encouragement have always been fundamental to me. She has accompanied me on numerous concert tours and has collaborated with me on countless expeditions in search of information on the Piatti cello, the protagonist of this book.

To my brother, Juan Luis Prieto, who revised the original manuscript in Spanish and whose perceptive suggestions played a vital role in the final version.

To Elena C. Murray, for her fine translation.

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The Origin and Purpose of This Book

My cello, the protagonist of this book, was born in 1720 in the northern Italian city of Cremona.

In 1720, thirty-five-year-old Johann Sebastian Bach, then kapellmeister at the prince of Anhalt-Cöthen's court, was composing his six suites for unaccompanied cello, among other works. At that time, when Philip V was king of Spain, the sun never set on the Spanish dominions. The viceroyalty of New Spain extended from the Panamanian border region to Louisiana, east along the Atlantic coast and west to what later became the territory of Oregon on the Pacific.

The cello in question, created in 1720 by Antonio Stradivari, has changed hands several times during its 286 years of life. While in the possession of various cellists in different countries, it has witnessed peaceful, turbulent, and tragic times.

Since 1979, I have had the privilege of being the temporary trustee of this cello, known as the Piatti. I say "trustee" because I believe that a work of art—like this instrument—cannot be considered property, like a house or any other material object at one's disposal. Those of us fortunate enough to play instruments that are genuine works of art must take the responsibility for treating them as such with the utmost care, so as to transmit them to their future "trustees" in the best condition possible.

Since the day that the Piatti came into my hands, I started investigating its history, and soon it occurred to me that it might well be material for a book. The "biography" of a cello may perhaps seem like a trivial, rather dreary subject, whereas the biographies of great men and women appeal to us for many obvious reasons. However, rarely do we stop to think that some objects, like certain musical instruments, also lead a life filled with dramatic episodes and exciting adventures that reflect certain unique aspects of evolving societies and cultures. My research has taken me several years, and I hope to continue with this pursuit, even after the publication of this book. The history of the Piatti, its life and miracles—and there have certainly been many during its long and almost tercentarian life—is discussed in the second part of this book.

Since I believed that the biography and the adventures of the Piatti might be better understood if they were preceded by a brief history of violin making, Part One of the book is devoted to this subject. Here I explore the remote origin of stringed instruments, the birth of the various members of the violin family, the history of the great Italian violin makers—headed by Antonio Stradivari and Giuseppe Guarneri del Gesù—and the evolution of the violin, viola, and cello.

The birth of the Piatti took place during the same period that the cello began to figure more prominently in the history of music. In fact, it coincides with the dates when J. S. Bach composed the six solo suites for cello (c. 1720), the first fundamental work in the history of this instrument.

Part Three of this book is titled "A Brief History of Cello Music from Stradivari to the Present." Here I refer to such subjects as the gradual incorporation of the cello into the category of a great solo instrument, the cello works of the principal composers, the musical treasures found in its repertoire, and the roles and contributions of some of the most outstanding cellists of the past and present.

Part Three highlights only the main features in the history of cello music, without entering in

great detail or attempting a comprehensive, in-depth analysis of this complex subject.

I must clarify a few additional points regarding Part Two, devoted to the history of the Piatti. Although its existence from 1720 to 1979 has been the subject of my research ever since it came in my hands, its life has been intimately linked to mine. Therefore, this story contains many autobiographical elements. I include, for example, a brief account of the adventures that the Piatti and I have experienced during our travels around the world. I certainly wish I had come across similar anecdotes written by its former owners!

In addition to describing several of our tours throughout Europe, Asia, and the Americas, I also refer to one of the subjects that has most absorbed me over the past twenty-six years: celebrating and promoting the music of Mexico and of the Spanish- and Portuguese-speaking countries from both sides of the Atlantic. Through the years I have met many distinguished personalities in the world of Mexican, Latin American, Spanish, and Portuguese music in general, and without professing to have made substantial contributions to Latin American or Iberian musicology, I describe my encounters with some of these musicians—some are close friends who have dedicated numerous works to me. I discuss the music and musicians of Latin America, Spain, and Portugal, the works that I premiered (almost always with the Piatti), the often picturesque circumstances characterizing these premieres, and my tours and musical adventures with this cello.

The painting and literature of Latin America are better known than its music, although the quality of the latter is certainly on the same level. We, the people from Spanish- and Portuguese-speaking countries, have the obligation, as far as possible, to promote and honor our artistic legacy (in my case music), especially in these times when most First World nations view our countries through a distorted lens of misconceptions and oversimplifications, focusing only on the most negative aspects of our reality and minimizing the importance and merits of our extremely diverse and rich ancestral cultures.

The instruments created by the great violin makers are often named after some famous musician or prominent collector who has owned them. They are also sometimes identified with a distinctive trait or a particular aspect of their life. Thus, for example, the Stradivari viola once owned by Paganini is known as the ex-Paganini or simply as the Paganini, whereas his Guarneri violin was dubbed Cannone for its extraordinarily potent sound. A Montagnana cello that spent an entire century untouched and immobile in its case in England was nicknamed Sleeping Beauty. My cello, when it was in Ireland and England between 1818 and 1900, was known as the Red Stradivari. Shortly after 1900 it became the Piatti, or ex-Piatti, after the prominent Italian cellist Alfredo Piatti, who owned it from 1867 till 1901.



A BRIEF HISTORY OF VIOLIN MAKING



Observations on the Origin of Violins and Cellos

THE ANCIENT ORIGIN OF STRINGED INSTRUMENTS

The origin of music and musical instruments is lost in the mists of time. Since this is neither the time nor the place to explore the evolution of musical instruments, for our purposes we need only state that in the third millennium before Christ there was already, in both Sumer and Egypt, evidence of stringed instruments such as zithers, lyres, lutes, and harps. In the *Iliad*, Homer mentions the lyre and the zither, basic Greek instruments that were adaptations of more ancient instruments.

From Greece and Rome, musical instruments followed two main routes. The first led to the Middle East via the Arabs, who cultivated music with great refinement and brought to Spain instruments like the lute (from *ud* in Arabic), the Moorish guitar, and the *rebec* (or *rabel*), a small stringed instrument played with a bow, a direct ancestor of our violin. The second route was from Byzantium to the north by way of Italy. Later on, these instruments of common origin would meet again, after having evolved differently. For example, the Latin guitar, the Moorish guitar, and the Moorish lute are plucked with a bird feather, whereas the European lute, the rebec, and its European equivalent, the *giga* (or *geige*), are strummed with the fingers. In fact, the duality of *giga* and *rebec* still exists to this day. A violin is still called a *Geige* in German, and a certain type of violin is a *rebeca* in Portuguese. However, one must not confuse the rebec or the geige with the violin. As Adolfo Salazar points out, “The semantic evolution loses its connection with the instrument: the ancient rabel . . . although it might have been the violin’s ancestor, today has become a different instrument.”¹ The same could also be said of the *giga* or the *geige*.

In ancient times, the words *kytara* in Greek and *fidicula* in Latin applied to the same common ancestor of the Greek lyres and zithers. The *kytara* engendered a series of instruments such as the guitar. The Latin term *fidicula* is a philological goldmine. In the Romance languages, *fidicula* dropped the *d* and evolved into the medieval French *fielle* or *vielle* and subsequently into *virole*; in Italian it became *viola*; and in Spanish, *viola*, *viola*, and *vihuela*. In the Germanic languages, *fidicula* evolved into the Anglo-Saxon *fidele* and eventually to *fiddle* in English; in High German it became *fiedel* and *videl*. In Spain, *vihuela* was a generic term applied to stringed instruments with a flat back and neck and with strings that were plucked with the fingers, a plectrum, or a feather, or else played with a bow.

The introduction of the bow was a turning point in the evolution of stringed instruments from ancient times to the Renaissance. The sound produced by plucking the string is brief and tends to fade. On the other hand, the bow allows for continuous sounds of variable duration and intensity. The bow, unknown to the cultures of Egypt, Mesopotamia, Crete, and Greece, came from the Orient. The earliest evidence of its existence is found during the ninth century in Central Asia, which was probably where the distant ancestor of the European and Chinese bows originated. I will return to this subject in another chapter.

The cello's first appearance in the music world was in sixteenth-century Italy, a few years after its siblings, the violin and the viola, had arrived. The earliest record of its existence is a fresco painted in 1535–1536 by Gaudenzio Ferrari in the Church of Santa Maria dei Miracoli in Saronno, near Milan. The fresco, which also includes the violin and the viola, depicts an angel playing a primitive version of the cello.²

It is common knowledge that the violin, the viola, and the cello belong to the violin family, which arose just as another family of stringed instruments, the violas da gamba, or viols, reached its height of popularity.

From its Italian name, the viola da gamba may be thought to have originated in Italy. However, according to some fifteenth-century paintings, it seems that the oldest of these instruments actually came from Spain—from Valencia, to be more precise. A Renaissance viol is depicted in a *Virgin and Child*, dated around 1475, in the chapel of St. Félix, in Játiva, Valencia.³ From Valencia, the viola da gamba, or *vihuela de arco*—as it was also known in Spain—spread throughout the Mediterranean to the Balearic Islands, Sardinia, and Italy. Although none of these primitive violas da gamba has survived, in 1658 Vincenzo Galilei, Galileo's father, confirmed their Spanish origin: "In Spain one finds the first music ever written for violas, but the most ancient instruments are now found in Bologna, Brescia, Padua and Florence."⁴

Obviously, Renaissance instruments were not born with a perfectly defined shape or with specific names. Furthermore, the initial problems of terminology have led to considerable confusion. The names *violin* and *cello*—*violino* and *violoncello* in Italian—appeared much later than the instruments themselves. By the 1500s, the Italian term *viola* was applied not only to our present-day viola, but also to all stringed instruments played with a bow. In turn, these instruments were divided into two great families: the leg viols, or violas da gamba (so named because they were held between the musician's legs), and the *violas da braccio* (held in the arm).

Both the violas da gamba and the violas da braccio came in different sizes. The individual instruments from each family were named according to their relative musical registers. The most common violas da gamba were the *viola da gamba soprano*, the *viola da gamba tenor*, and the *viola da gamba basso*.⁵ The members of the violas da braccio family were also distinguished by their different tessituras. The violin was known as a *soprano di viola da braccio* (or *violone da braccio*), and our present-day viola was an *alto di viola da braccio*; the cello was a *basso di viola da braccio*, and our double bass was called a *contra basso di viola da braccio*, although these last two were not held in the arm.

It is important to clarify a common misunderstanding: the instruments of the gamba family did not give rise to the violin family. While they both had similar ancient origins, they existed simultaneously.⁶

The term *violone da braccio* was applied to the violin at the beginning of the sixteenth century, whereas the definitive, diminutive term *violino* appeared in Italy in 1538. By the seventeenth century in Italy, the *basso di viola da braccio*—our cello—was simply called *violone*. The diminutive term *violoncino* and *violoncello* appeared in 1641 and 1665, respectively, more than a century after Ferrari's 1535 fresco.⁷ By the end of the seventeenth century, the term *violoncello* was already in common use.

No term has had a more curious evolution than *alto di viola da braccio*—our *viola*. In seventeenth-century Italy it was called simply *viola da braccio*, and soon after, the term *da braccio* disappeared.

and only the word *viola* remained; in German, *alto* and *viola* disappeared and only *braccio* remained, giving rise to *Bratsche*. In France, *alto di viola da braccio* dropped *viola* and *braccio*, so the instrument is known in French simply as *alto*.

The violas da gamba reached their distinctive shape during the fifteenth century, well before the violas da braccio. They were characterized by flat backs, broad necks, gut frets, six or seven thick strings, and a beautiful, though somewhat pale and flat, sound.

In Spain, one of the most remarkable musicians of the sixteenth century was Diego Ortiz, from Toledo. He was a famous viola player, and his *Tratado de glosas* (Rome, 1553) is one of the finest masterpieces in the art of variation and fantasy.

In England, the violas da gamba, called viols, were used in small instrumental groups called consorts, a word that has the same origin as *concert*. A viol consort generally included six viols of different sizes. They were also used in the consort songs, which were written for voice and viols and whose most famous composer was William Byrd.

In seventeenth-century Germany, the viola da gamba, still regularly used by J. S. Bach, was on the verge of extinction when the German school of gambists closed down. It disappeared in 1787 after the death of Carl Friedrich Abel, the instrument's last great virtuoso.⁸

In France the popularity of the gambas, called *violes* in French, lasted longer. From 1675 to 1775 the French school of the gamba was the most important in Europe, and its most celebrated exponent was Marin Marais (1656–1728), author of the well-known *Pièces de violes*.⁹

In less than two centuries, the violin family displaced the viola da gamba group and occupied the predominant place in music. Why such a radical transformation? Although this is a fascinating topic, this brief overview is not the occasion for an in-depth analysis. I need add only that art is always a reflection of historical evolution and that, therefore, both music and musical instruments undergo the transformations imposed on them by particular eras.

The Baroque period, which began in 1600, marked the beginning of a musical revolution. The lyrical madrigal of the sixteenth century gave way to musical drama. New generations searched for deeper emotional content and a more expressive musical style. Logically, the new style was launched with the most flexible of all instruments: the human voice. Italian singers sometimes expressed their emotions with such passion that, for example, at a performance of a Monteverdi opera at the court of Mantua in 1608, many of the spectators barely held back their tears during a scene in which Arianna, abandoned by Theseus, breaks into a heartrending lament.

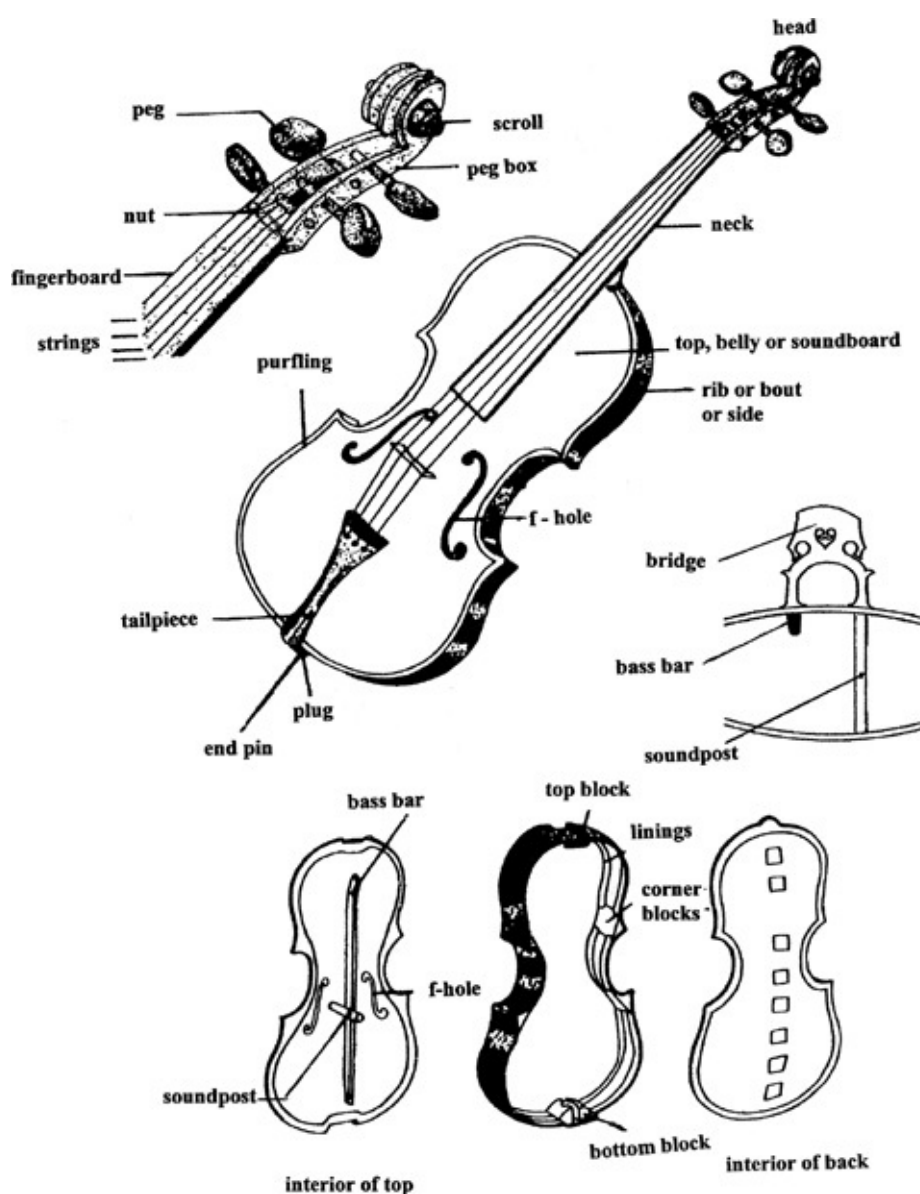
It is natural that violin makers and violinists would attempt to create an expressive quality in their instruments, one that came as close to the human voice as possible. The newborn violin had three fundamental advantages over the viola da gamba soprano or the pardessus de viole: a more powerful sound, greater expressive capacity, and the possibility for a greater display of virtuosity. We find the same advantages in the cello and the viola in relation to the bass and alto violas da gamba respectively.

However, this substitution did not take place without fierce opposition. The musical elite and the aristocracy were especially partial to the violas da gamba. The French composer Philibert Jambe de Fer (1515–1556), in his *Epitome musical* (1556), described the differences between both families and consigns the violin to the lowest musical level, regarding it as “suitable only for dances and processions”. Claude-François Ménétrier, author of the book *Des ballets anciens et modernes* (1682), described the violin as extremely noisy (“quelque peu tapageur”).¹⁰ In 1705 Jean Laurent Lecerf de Viéville, in his *Comparaison de la musique italienne et de la musique française*, wrote that “the violin is not a noble instrument; the whole world agrees.”¹¹

The attacks against the cello were similar but lasted much longer. In 1740, Hubert Le Blanc wrote a *Défense de la basse de viole contre les entreprises du violon et les prétentions du violoncel*, where he bemoans the fact that the cello, “a wretched, despised poor devil, who instead of starving to death as could well be expected, now even boasts of replacing the bass viola da gamba.”¹² He adds that since the screeching sounds of the violin and the cello cannot possibly rival the delicacy and elegance of the violas, they must resort to huge halls, totally unsuitable to the violas da gamba. This comment actually reveals the disadvantage of the violas da gamba: their weak sound made them almost inaudible in the great concert halls. Ironically, and everything being relative, those “huge halls” were in fact, the court salons, whose small size is now considered ideal for chamber music.

THE ANATOMY OF THE CELLO

The anatomy of stringed instruments is described in almost human terms. We refer to the instrument’s head, neck, body, ribs, waist, and even its “soul.” The cello, like the violin and the viola, comprises over seventy different parts. [Figure 1](#) displays the principal pieces of this instrument.



1. The anatomy of a cello.

First, let us examine the exterior.

The top (belly or soundboard) generally consists of two pieces of spruce or pine wood attached the entire length of the central line.

The back is generally made of two matching pieces of maple and, sometimes, poplar.

A very fine triple line called purfling runs parallel to the two edges of the top and back. There are two inlaid outer strips of black-tinted wood and an inner strip of black poplar. The purpose of the purfling is not merely aesthetic, since it also prevents cracks in the edges.

The ribs (or bouts), also maple, are attached to the top and the back. There are six altogether, three on each side. The first, or upper, bout runs from the neck to the beginning of the waist; the second, middle, bout is the waist itself (also called *C* because it is shaped like the letter); the third runs from the waist to the lower central part of the instrument. The interior is reinforced with narrow wood strips called linings, which reinforce the structure of the ribs.

The head, made of maple, ends in the scroll, which is often very beautiful. The function of the head is to house the pegbox: its four pegs, usually made of ebony, hold the upper end of each string and the tension of a string is adjusted by turning its peg.

The neck is the piece that joins the head to the body of the instrument. In the past, both the neck and the head were made of a single piece of maple. Since today longer necks are required, new ones have been inserted into the original heads of old instruments. The rest of the instrument consists of modern-day pieces that can be changed with relative ease.

Attached to the neck is the ebony fingerboard, along which the strings run lengthwise. The fingerboard provides the surface against which the fingers press the strings and determine the notes to be played.

The bridge, made of maple, transmits the vibrations of the strings to the top, or soundboard. Selecting a well-carved bridge made from the right kind of wood is indispensable for obtaining optimal sound from the instrument. The bridge, an exterior piece, is not attached to the top, but is held in place by the pressure of the strings.

The instrument's interior serves as a sounding board or sound amplifier: sound waves are emitted through two openings, called f-holes because of their shape, on both sides of the bridge.

The tailpiece is the section attached to the lower ends of the strings. It was formerly made of ebony, and sometimes of boxwood or rosewood, though today plastic is generally used. The tailpiece is fastened to the plug by a strap that was usually a cord of catgut, but today is either a steel wire or a synthetic filament.

The four strings of the cello are, in descending order, A, D, G, and C. Originally, the strings were made of catgut. Today they tend to be steel or a synthetic material wound with steel, aluminum, tungsten, or other metal.

The end pin is a cylindrical piece, generally made of steel, with a sharp point and an adjustable length; it allows the player to conveniently set the cello on the floor.

The mute (not illustrated), is a comb-shaped rider that, when placed on the bridge, reduces the vibrations of the bridge and produces a muffled sound.¹³

Let us now examine two vitally important pieces in the interior of the cello. The bass bar is a long narrow piece of pine attached to the interior of the top and running underneath the foot of the bridge next to the lowest string—hence the name *bass bar*. Its function is to make the top more resistant to the strong pressure exerted by the strings over the bridge.

Finally, there is a piece so sensitive and vital that it is called the “soul” in all Latin languages.¹⁴ In English, it is called the soundpost. It is a small cylindrical bar of spruce, perpendicular to the top and

the back, near the foot of the bridge, and opposite the bass bar. It is not attached; rather, it is held fixed to the back by the pressure of the bridge on the top. Its purpose is to transmit the vibrations from the top to the back and then to send them resounding throughout the entire interior of the instrument. Its precise placement is fundamental to producing a good sound, and the slightest change in its position will alter the quality and volume of the sound. The ideal placement depends not only on the instrument but also on the musician.

THE BOW: ITS ORIGINS

The importance of the bow is such that even the finest instrument cannot reach its tonal potential—in both volume and quality—if it is not played with a good bow.

The earliest literary and artistic references to the existence of a primitive bow date as far back as the ninth century in Central Asia—in Transoxiana Sogdiana, Khwarizm, and Khorasan—in what today would be approximately Uzbekistan and Turkmenistan. In the Arabic and Byzantine empires, the use of the bow was already common during the tenth century, as corroborated by certain Byzantine illustrations and Arabic documents.¹⁵

As in the case of stringed instruments, it was the Arabs who introduced the bow to Europe through the double route of Spain and Byzantium. A Spanish manuscript dated 920–930, a copy of a work by Beatus of Liébana, contains one of the most ancient Spanish representations of a bow. The manuscript, written in the time of Abd ar-Rahman iii, caliph of Córdoba, includes a beautiful colored illustration depicting seven angels and four musicians playing bowed instruments.¹⁶

THE MODERN BOW: FRANÇOIS TOURTE, THE STRADIVARI OF BOW MAKERS

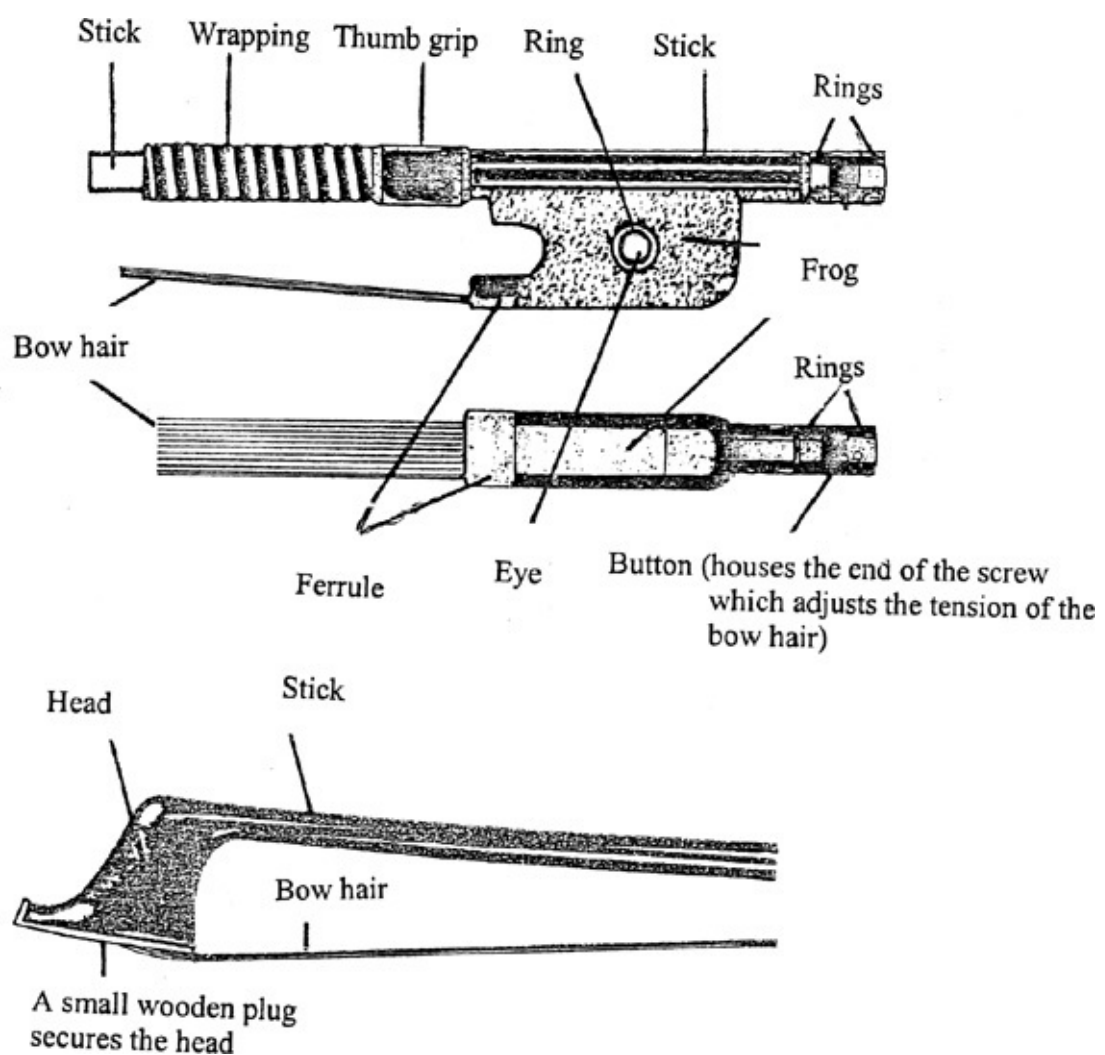
The great modern bow-making tradition began in the eighteenth century with François Tourte (1747–1835), the most brilliant bow maker in history—the Stradivari of bow makers. He was born ten years after the death of Stradivari and, like him, lived a long life, dying at the age of eighty-eight. His life was characterized by an unflagging dedication to his art, from which he retired at the age of eighty-five when his sight began to fail. He worked all day in his small workshop in Paris, located at 10 Quai de l'École, overlooking the Seine. His only pastime was fishing on the river at sunset after a long day's work.¹⁷

The bows that existed prior to Tourte, even those made by Arcangelo Corelli, did not succeed in extracting the instruments' full range of rich sounds. To familiarize himself with musicians' particular requirements, Tourte worked with the greatest virtuosos of the time, especially with the violinist Giovanni Viotti. Although Tourte did not invent the bow, he established the ideal model by standardizing the dimensions, weight, and balance, and, most particularly, by introducing and reintroducing pernambuco wood from Brazil, the only kind of wood that provides the optimum combination of flexibility, elasticity, resistance, and weight. Tourte paid meticulous attention to the horsehair for his bows, selecting each of the 200 hairs for its perfect roundness and uniform length; he was assisted by his daughter, who, it is believed, added the tiny label with the following text found on one of his bows: *Cet archet a été fait par Tourte en 1824, âgé de soixante-dix-sept ans*. (This bow was made by Tourte in 1824, at 77 years of age.)¹⁸ Tourte's bows were genuine masterpieces, not only because of their incomparable beauty and perfection, but also from the tone they produce in great instruments when played by an artist.

The French school of bow making prevailed in this art, just as violin making had been dominated by the Italians. Among Tourte's successors we should mention François Lupot (1774–1837), Nicola

Eury (1810–1835), Dominique Peccatte (1810–1874), who today is regarded almost on the same level as Tourte, François Nicolas Voirin (1833–1885), and others. There were also outstanding bow makers from other countries: John Dodd (1752–1839) and James Tubbs (1835–1919) from England, and Nicolas Kittel (1839–1870) from Russia.

Figure 2 shows the principal parts of the bow. The thickness of the stick is not uniform: its dimensions are determined by a precise mathematical formula. The stick's curved shape is obtained through an application of dry heat, requiring a highly developed sense of touch on the bow maker's part.



2. The anatomy of a bow. BOTTOM: The head of the bow. TOP: The frog of the bow (side and bottom view).



3. Cello bows by (LEFT) *Francois Tourte*, (CENTER) *Dominique Peccatte*, and (RIGHT) *William Salchow* (a modern bow). Photos by *Isaac Salchow*.

It is curious that few violinists and cellists ever stop to think about the extraordinary number of materials required to make a bow. As I have already mentioned, the stick is made of a wood called pernambuco, the finest grade of brazilwood. This wood, which comes from a tree called *pau-brasil* in Portuguese and *palo brasil* in Spanish or *brasilium* in Latin, had been known in Europe since the eleventh century, since it also grows in other places. This was the tree that gave its name to Brazil (and not the other way around) when the Portuguese discovered great forests of these reddish trees in the territory later known as Brazil.

The frog is made of ebony (a wood from the central regions of Africa), tortoiseshell, or ivory; use of the latter two is severely restricted today to prevent the extinction of turtles and elephants. Mother-of-pearl is used for the eye of the frog and for the ring that sometimes surrounds it. Silver or gold is generally used for the ferrule. Just above the frog, where the fingers touch the bow, there is a protective wrapping; once made of whalebone, it is now leather, silver wire, or gold wire. A steel screw adjusts the tension of the hair. Finally, bow hair comes from the tails of white horses, preferably

those from cold regions. Since the hairs tend to break with use, they must be replaced every two or three months; that is, the bow must be rehaired.

For years I have used an excellent bow made by François Tourte and a modern bow by William Salchow, a renowned New York bow maker whose cello bows are exceptionally good. Whenever possible, I always entrust Salchow with rehairing my bows, since the quality of the bow hair is fundamental. Salchow generally obtains hair from Russian or Mongolian horses: they are raised on the cold steppes, and their thick hair ensures optimal quality.

Figure 3 illustrates three cello bows: one by François Tourte, another by Dominique Peccatte—the model called *tête de cygne* (swan's head) because of its delicately shaped point—and the last by William Salchow.

ROSIN

If one places new hairs in a bow and then glides them across a string, no sound will be produced since the contact of the clean hairs with the string does not produce any vibrations. To produce sound, the hairs need to be coated with hundreds of diminutive solid particles, which, upon coming in contact with the strings, create a rapid succession of shocks and a continuous vibration, resulting in the emission of sound. This is the function of rosin, which must be frequently applied to the bow. The rosin for bows is obtained from the sap, or resin, of certain kinds of pine trees. When refined through various processes, the sap is used for medicinal, commercial, and artistic purposes. In ancient times the resin from Colophon in Greek Ionia (in Asia Minor) was regarded as the very finest, so rosin is called *colophane* in French, *colofonia* in Italian, and *kolophon* in German, whereas the Spanish name is *resina*. Good rosin is obtained only after a careful selection of the best raw material and a manufacturing process that adheres to the strictest quality-control standards. Certain kinds of rosin are more appropriate for violins or violas, and other, slightly different, types are more suitable for cellos and double basses.



Amati, Stradivari, Guarneri del Gesù, and the Great Italian Violin Makers

The city of Cremona in northern Italy plays a prominent role in the history of music. Indeed, for over two hundred years, beginning in the sixteenth century, Cremona was the violin-making center of excellence. Most of the instruments played by the most famous musicians in the world originated in its workshops. Two of its illustrious names were destined to elevate the art of violin making to its most sublime expression: Antonio Stradivari and Giuseppe Guarneri del Gesù.

Cremona, part of the duchy of Milan, was the town of second-greatest political and economic importance after the capital. Seventy-five kilometers southeast of Milan, it was also near Venice and the domains of the Gonzaga and the Farnese families (Mantua and Parma, respectively). In 1559, the duchy of Milan was incorporated into the Spanish crown territories, as were the kingdoms of Naples and Sardinia.

Its proximity to Venice was extremely important to Cremona. During the seventeenth century and into the eighteenth, Venice was virtually regarded as Europe's musical center. It was the only city where opera was presented as a profitable commercial enterprise, completely independent of the court or the whims of some nobleman. In 1637 Venice opened its first opera house. Naples, which during the eighteenth century would rival Venice as an operatic center, did not present a single opera until 1651, when a Venetian company performed an opera by Monteverdi.

Monteverdi, the first great opera composer and the most prominent musical figure of his time, was born in 1567 in Cremona, where he studied and lived until around 1590, when he departed for the court of Mantua. By 1613 he was living in Venice, and that same year he was appointed *maestro di cappella* (the person in charge of all music for a religious institution) of St. Mark's Cathedral.

Monteverdi, who availed himself of all the musical innovations of his time, was the first composer to specify the use of violins and cellos in his compositions.¹ For example, in his opera *Orfeo* (1607) the score stipulates the use of cellos (called *bassi di viola da braccio*) and violas da gamba. During the third act of the same piece, he demanded certain highly unusual effects from the violins, such as tremolos, and extreme dynamic expressions like *morendo* (dying away); such notations indicate that the art of violin playing began its development with this composer.

When *Orfeo* premiered in Mantua in 1607, the composition of the orchestra greatly depended on the musicians Monteverdi had managed to find. Shortly thereafter, when Venetians started performing operas profitably, it became necessary to systematize the integration of the orchestra by creating a nucleus consisting of a string quartet: two violins, a viola, and a cello. The ever-increasing passion for opera gave rise to a considerable demand for stringed instruments. Furthermore, the advent of great violinists like Arcangelo Corelli (1653–1715), the most eminent figure among the earliest composers of violinists, called for instruments having a more resonant quality. This and the abovementioned factors serve to explain the extraordinary development of violin making, not only in Cremona, but also in cities such as Brescia and Venice itself.

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