The violin bow in the 18th century

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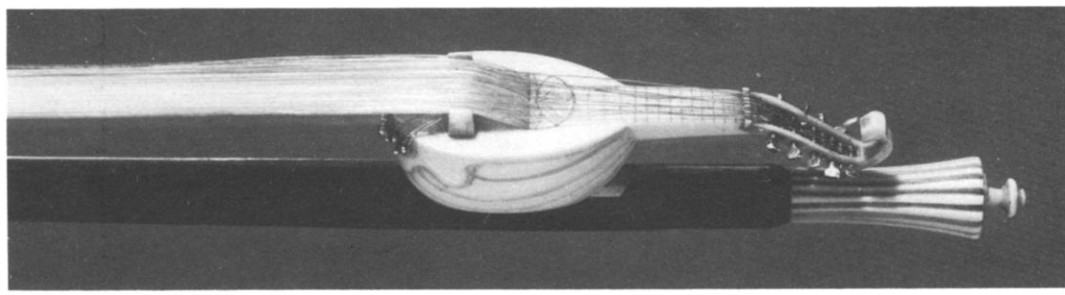


'One of the most remarkable bows in existence', possibly made by Stradivari (see also illus. 1-3)

This article is dedicated to the memory of the late Arthur Mendel—musician, scholar, friend.

It is clearly time to re-examine the evolution and history of the violin bow, especially the bow before François Tourte (1747-1835). Some 30 years ago I published an article entitled 'The Violin and its Technique in the 18th Century',[1] and later elaborated on this theme in a book reaching back in time to the origins of the violin in the early 16th century.[2] While the book dealt with the bow at some length, especially the development of the violin bow to *c*1750, more recent research and the practical experience of concert violinists with authentic instruments and bows call for a fresh look at the evolution of the violin bow in the 18th century as a whole. Of course, we really need a comprehensive account of the history and evolution of the bow from its origins to the present, keeping in mind that, although a bow of sorts dates from the 10th century, a 'bow for the violin' cannot properly be called a 'violin bow' before the birth of the violin in the early 16th century.[3]

Until recently and with a few notable exceptions like Henry Saint-George,[4] music historians and violinists regarded the 'old' bow—that is, any bow made prior to the advent of the 'modern' bow standardized by François Tourte *c*1785 [hereinafter the Tourte bow]—as a crude implement of very limited capabilities. Thus Fétis, in discussing its evolution, asserts that 'no serious attempt was made to improve the bow, until towards the middle of the eighteenth century';[5] and he offers eight crudely drawn bows dating from 1620 to 1790 as visual evidence (see my illus. 4, p. 202).

The fact is that makers had improved the bow as musical changes and conditions required, and the best of the resulting bows (as in illus. 1) were marvels of craftsmanship and musical efficiency. While Fétis' statement is an exaggeration, it is nevertheless understandable in the circumstances of his time. For one thing, few authentic old bows were extant, and they were completely unstandardized, varying greatly in design and quality from one to another; in addition, few historians of the bow had played with early bows of first-rate quality. And finally, they had relatively little access to the resources of iconography, from which one sees, particularly in painting, early bows of beautiful proportion and remarkable grace.

Still, numerous hints of the glories of the old bow are to be noted here and there. L'Abbé le Fils was voicing a common belief when he declared: 'One can call the bow the soul of the instrument it touches . . .'[6] Moreover, a little reflection should make one wonder how Stradivari, among other great makers, could have allowed his wonderful instruments to be handicapped by being played with such hopelessly crude bows as those shown by Fétis.

In sum, we need to find out what the bow was like in successive periods of its history, what it could do, and by what stages and for what reasons the Tourte bow came into being. I propose to discuss here the physical changes in the 18th-century bow from Corelli to Tourte and Viotti—that is, from about 1700 to 1800.

If violinists before 1750 were dissatisfied with the bows they were using, I have yet to find an account which speaks of this. On the other hand, we have rhapsodic tributes to the great violins made in Cremona and elsewhere; and bows of comparable quality are implied by praise of the musical potential of the violin and its tone which was said to rival the most perfect voice. Even in 1636, Mersenne[7] speaks of the violin as the 'king of instruments', of 'its ravishing and powerful tone' and the 'thousand different manners' of playing the string with the bow[8]—descriptions that are hardly compatible with a crude and unresponsive bow.

Reliable sources like Mersenne make clear that the bow was perfectly satisfactory for the music and players of that time. And today we know from surviving bows that they are superior in some respects to the modern bow when used for playing music of their own time. Two superb bows of the early 18th century are shown in illus. 1a and b, and two equally superb bows of the later 18th century in illus. 1c and d. Illus. 1c shows a genuine Tourte bow and 1d an English bow stamped FORSTER (possibly made by John Dodd, whom I discuss below), one of the types of so-called 'transitional' bows in vogue about 1775, some ten years before the invention of the Tourte. Depicted in illus. 1a is a most elegant and beautiful bow. It has a slightly convex stick, a graceful swan bill, and a fixed frog which is really a removable wedge. I call this a 'clip-in' bow because the wedge is clipped in to tighten the hair. The bow in illus. 1b is one of the most remarkable in existence, both in appearance and playing qualities. Possibly made by Stradivari, it has a movable ivory frog in the form of a pandurina; its bow stick is straight, and it has a 'pike's head'.

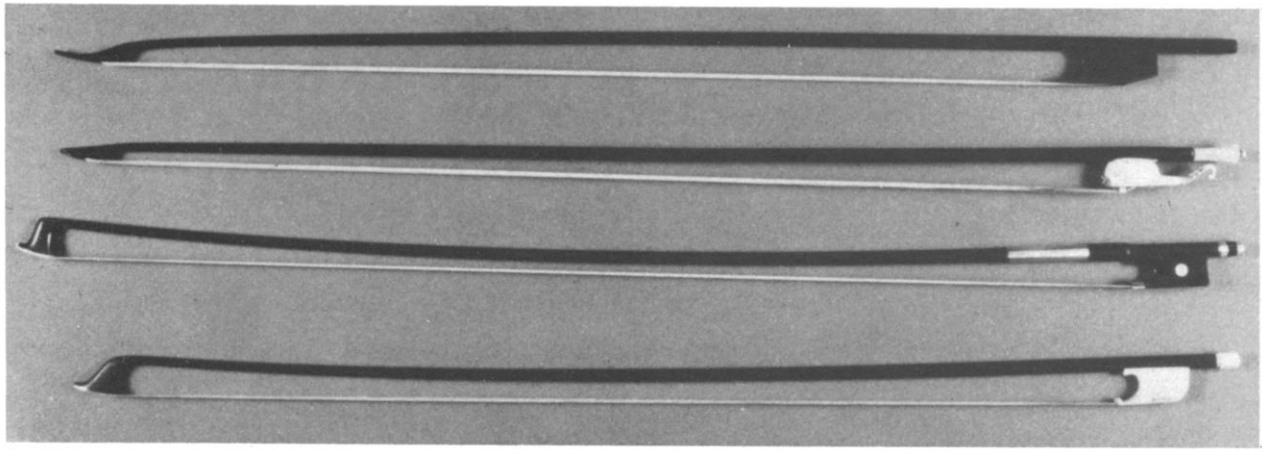
In illus. 3 we see a detail that shows the extraordinary beauty of the frogs of all four bows and illus. 2 shows the corresponding view of the heads.

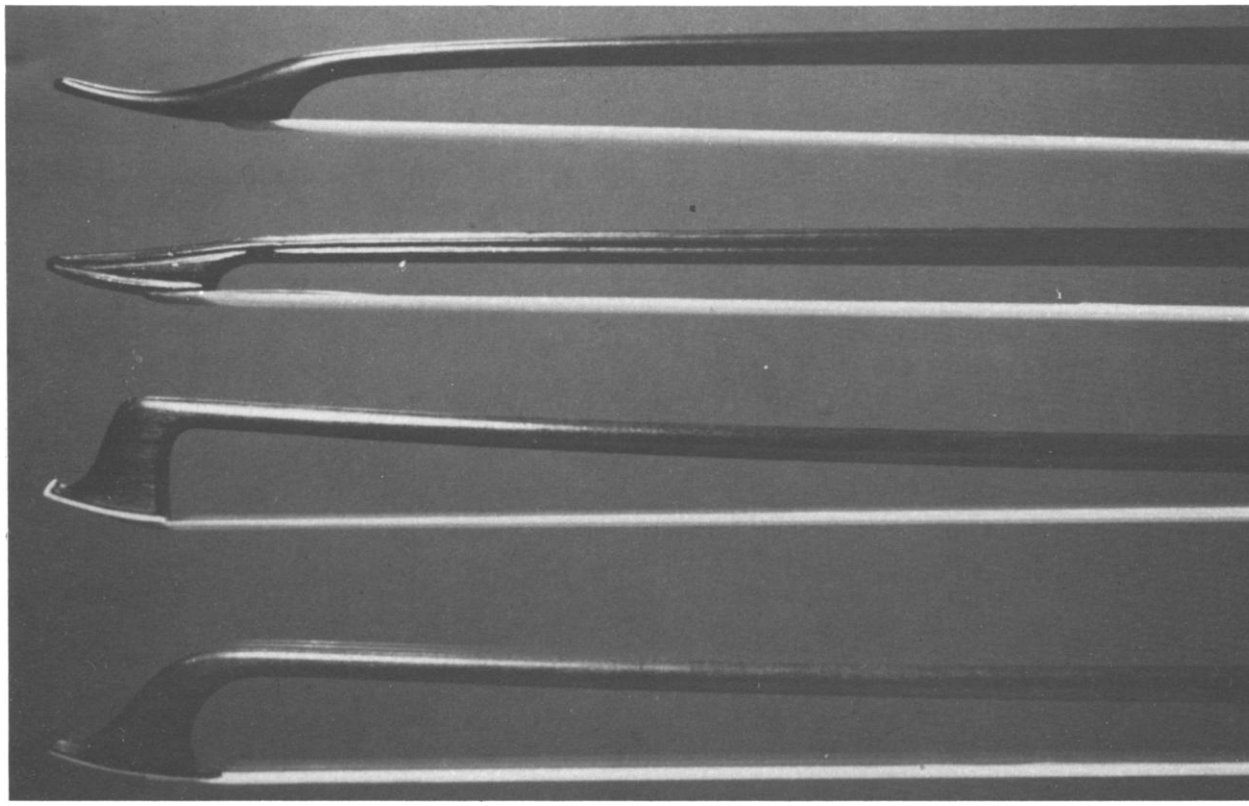
As a contrast to the impressive craftsmanship and beauty of these bows, illus. 4 is Fétis' representation of the evolution of the bow at that time. From the merest glance, one can see how these crudely drawn forms misrepresent the elegant reality of the best surviving 18th-century bows.

The old bows I have spoken about so far—associated with Corelli and his pupils Locatelli and Geminiani, to Veracini, Pugnani and Tartini—may be categorized roughly as the Corelli-Tartini model. One cannot define the terms 'Corelli' bow or 'Tartini' bow with any degree of consistency of precision; the terms themselves are not contemporary with Corelli and Tartini, apparently being used and illustrated for the first time by Woldemar (1800),[9] and later by Baillot (1834)[10] and Fétis. The commonly used term 'baroque' bow is not satisfactory either, being even less definitive. It is used loosely to designate any bow-type between 1600 and 1750, and does not suggest the differences in bows used for various types of music, such as sonatas and dances.

As a blanket term Corelli-Tartini model generally refers to the Italian 'sonata' bow of the first part of the 18th century. Such a bow would normally measure between 24″ and 28″ (approximately 61-71 cm) in overall length,[11] with a pike's head and a straight or slightly convex bow stick as in illus. 1a and b. Geminiani's bow (see illus. 5) appears to be a long, straight version of this model (Veracini's bow of 1744 even longer), while Corelli would presumably have used a somewhat convex bow, shorter than that of his pupil. The frogs of these bows were either fixed (as in illus. 1a) or, in the most advanced, adjusted by a screw mechanism (illus. 1b) much as in today's bow.

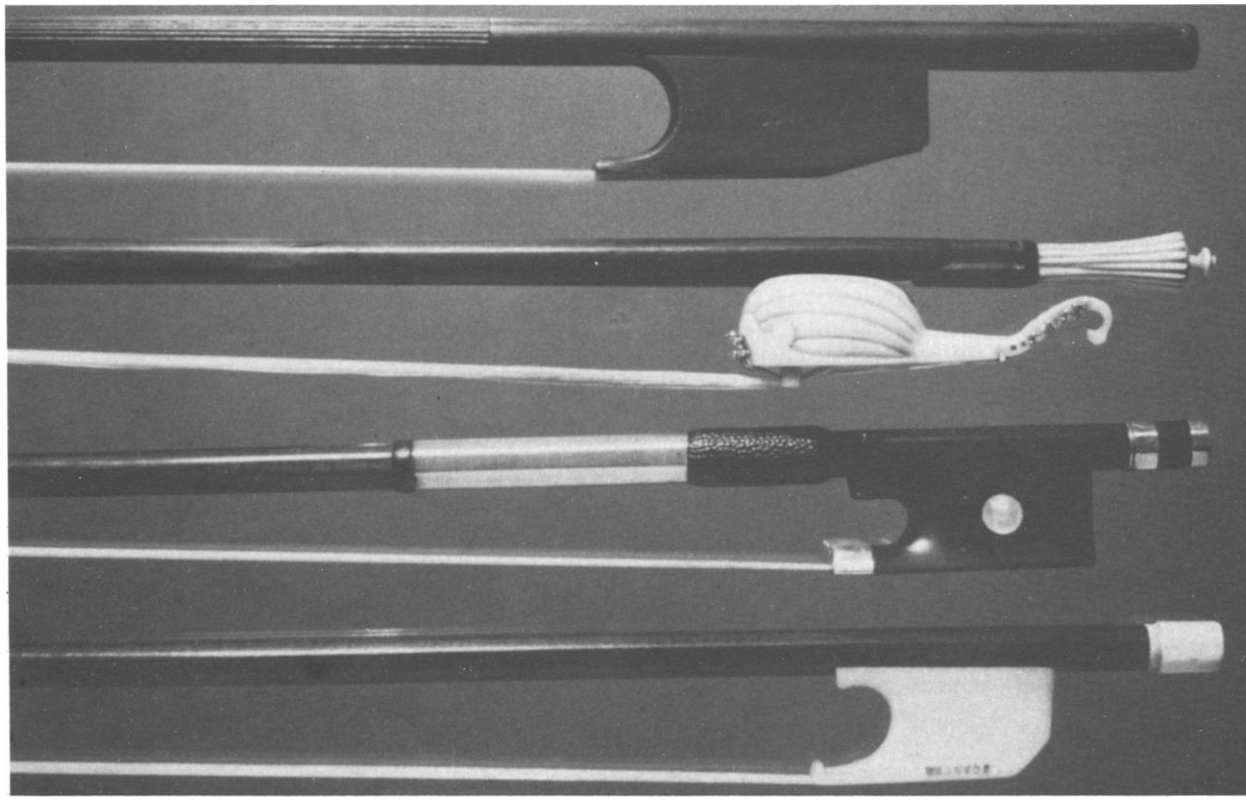
1. (a-d, numbering from the top) two early 18th-century bows; two bows of the later 18th-century

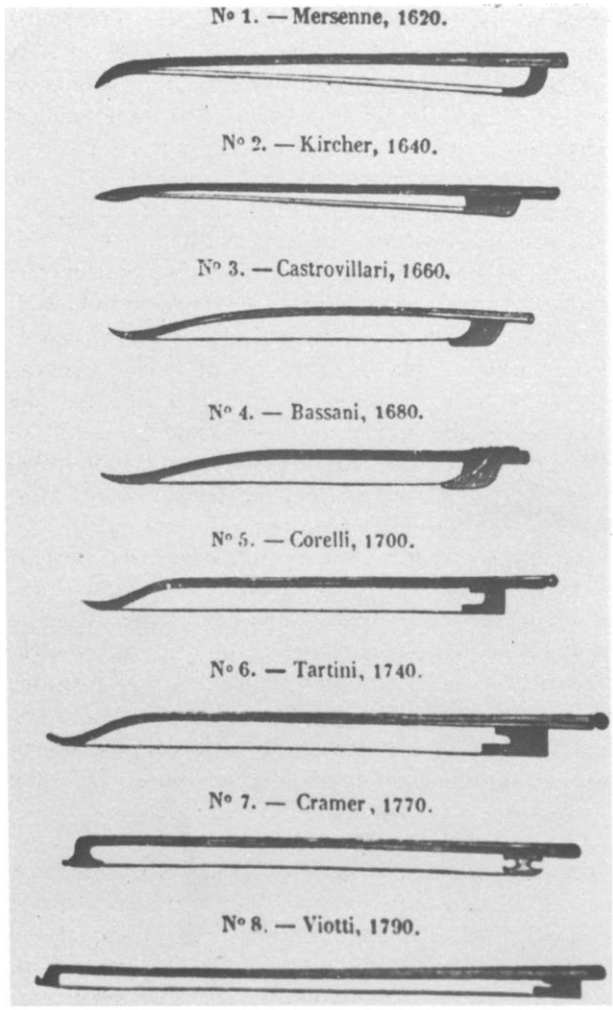




2. Details of the heads shown in illus. 1

3. Details of the corresponding frogs





(Left) 4. Eight bows from Fétis' *Antoine Stradivari* (Paris, 1856)
(Below) 5. The art of the violin. Frontispiece of Geminiani's treatise of 1752 (Paris edition)
(Right) 6. Giuseppe Tartini, with bow and violin. Engraving after a portrait by ? V. Rota (1761)

Ironically, although the Corelli bow is treated by the theorists as a touchstone of comparison, we have no extant portrait of Corelli playing, and the available descriptions and representations do not give a consistent picture of the Corelli bow. In Fétis (my illus. 4) following Woldemar (my illus. 9) this type of bow is represented as a shorter and smaller copy of the Tartini. But the portrait of Tartini (illus. 6) shows a bow, which if drawn to scale would measure about 24″ (61 cm) in length—very short for the time and shorter than the Corelli shown and described by Baillot (see footnote 11).

Fétis says that Tartini made some 'improvements' in the bow (presumably the Corelli) about 1730:[12] he made the bow 'less clumsy', used a lighter wood than previously, a straight bow stick instead of the 'bent' (i.e. convex) form, and grooved the stick longitudinally in the part held by the hand to prevent the stick turning between the fingers. These 'improvements' are not all obvious in his illustration, and some presumed improvements, like the increased length of Tartini's bow, are not mentioned in the text. It is curious also that the text assigns the date 'about 1730' to the 'improvements' but the illustration assigns the date of 1740 to the bow design. In the absence of more consistent information, one is tempted to surmise that the Tartini bow represents an extension of the Corelli's basic action (see below) not a fundamental change as in the Tourte. There is also the Pugnani, mentioned and illustrated by Baillot (my illus. 17, p. 211, second bow from the left). Like the Tartini, the Pugnani seems to represent an extension of the features and action of the Corelli bow.

In this connection, it should be said that Tartini, like other violinists, probably owned and used several types of bow at various times in his long life. Born in 1692, he lived until 1770 during a period of decisive change in bow design. In his early life Tartini prob-

ably used a Corelli bow; he doubtless modified this type, as Fétis relates, possibly as a result of his experience with the 'School of Nations' which he founded in Padua in 1729. Towards the end of his life, Tartini may well have used the Cramer bow (illus. 11 shows one of this type) or one made by Tourte *père* (as suggested and shown by Van der Straeten).[13] If the date of illus. 6 is correct, the straight stick of this bow is surprisingly short and the head somewhat primitive. The frog appears to be movable, being regulated by a screw mechanism—a progressive feature. Two bows of Tartini, still extant in the Conservatorio di Musica G. Tartini, Trieste, appear to date *c* 1750. All this information about Corelli and Tartini bows does not add up to a consistent picture.

The fact that bows are ascribed not to makers but to famous violinists (who were often composers as well) underlines the point that, with rare exceptions, bow makers remained anonymous before 1750. Quite probably the man who made the violin often made the bow or had it made in his shop: I have already indicated that Stradivari almost certainly made bows or had them made for him. After 1750, some makers began to identify themselves by stamping their names on bows—generally on the stick, sometimes on the frog, occasionally on both (as in some Dodd bows).

Tourte *père*, whom we now believe to be Louis Tourte, stamped a few bows *c* 1750 with the distinctive TOURTE·L but François Tourte (his more famous son), whose first standardized bows date from *c* 1785, rarely stamped his. Although François attained an enormous measure of fame in his own lifetime, the tradition of the anonymous bow maker was still so strong that theorists like Woldemar and Fétis called Tourte's new-model bow not the Tourte bow but the Viotti bow, after his contemporary the violinist.

To return to the 18th-century bow: what are its physical characteristics and playing properties, compared to the standardized Tourte? The Corelli-Tartini model generally has a straight or slightly convex stick, a more yielding bow hair, and a balance point lower down towards the player's hand. In addition, compared to the modern bow, the earlier bow is on an average slightly shorter and lighter (particularly the head), and the ribbon of hair is not as wide.

Moreover, the yielding hair of these early bows requires a small 'take-up' or 'give' before the tone emerges. This is what Leopold Mozart means when he speaks of a 'small softness at the beginning of the stroke; for it would otherwise be no tone but only an unpleasant and unintelligible noise. This same softness must be heard also at the end of each stroke.'[14]

By contrast, the tighter, less yielding hair of the stiffer modern bow produces the tone practically at once. With old bows the basic stroke is a kind of *non legato*, and the yielding hair and the light head of the bow work together to produce a brilliantly clear articulation of individual notes, especially where rapid passages are played in the upper half or third of the bow stick.

In my view the additional advantages of the early 18th-century bow are that it produces—rather more easily and naturally than its modern counterpart—clear, short, unaccented strokes in the middle of the bow and especially in the upper third; and it produces a light, clear, beautiful *non legato* in the middle. Further, the old bow brings out more clearly repeated notes, broken chords, and string crossings at speed. Finally, and again because of the yielding hair, it is easier for the old bow to produce double stops that minimize scratch and are clearer in sequence.

7. Violinist playing with a French dance bow. Lithograph after a painting by Gerard Dou (1665)

What I have said is not intended to undervalue the superb qualities of the Tourte bow or overlook the limitations of the old bow. The latter, for instance, will not produce a loud, evenly sustained sound as easily as the Tourte, nor can it produce effectively a hard, accented, *martelé* bow stroke. The modern *spiccato* (spring bow) in the middle and the strong, lifted stroke at the frog are less natural to the old bow. But an effect similar to the modern *spiccato* is produced by the *non legato* of the old bow, which, in playing rapid individual notes, produces a clear articulation resembling *spiccato*, without actually leaving the string.

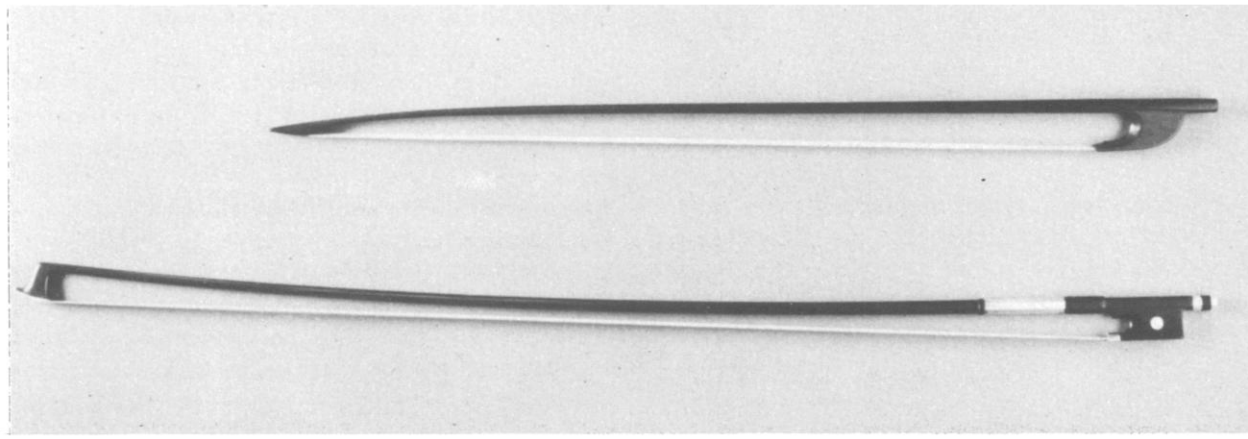
Although I have spoken of the 'old' and 'modern' bow, there are, I believe, some four or five distinct types in the 18th century, this variety being related to function and musical need.

1. Already discussed in detail, the Corelli-Tartini model is generally appropriate to the style of music in the first half of the 18th century, to composers like Corelli, Vivaldi, Geminiani, Tartini and others. This Italian bow was a constant in a field of variables.

2. Before 1725 or thereabouts there was a clear distinction between the 'sonata' Corelli-Tartini bow and the French dance bow used for dance music. The latter was a short bow, as shown in the Gerard Dou painting of 1665 (illus. 7), designed to produce short incisive bow strokes and well-suited to emphasizing the rhythms of dance music. Note the old thumb-under-hair grip which gives Dou's player a very secure hold on the bow, imperative for rhythmic accentuation. Illus. 8 shows a surviving example of a French dance bow, photographed with a genuine Tourte for comparison. This dance bow may be dated a little earlier than the Dou portrait, if only because it ends in a point with a scarcely discernible head. About 1725 the sonata style became increasingly popular in France through the advocacy of French violinists, like Leclair who was trained in Italy. Consequently the French dance bow and the French dance style began to pass out of fashion as the sonata style and bow were taken up by the French.

3. One may recognize also the German bow. This type is rather heavily constructed, generally using a convex bow stick and a somewhat undeveloped, even clumsy head, as illustrated by the bows in Leopold Mozart's

8. Two strikingly contrasted bows: a French dance bow (above) and a modern Tourte



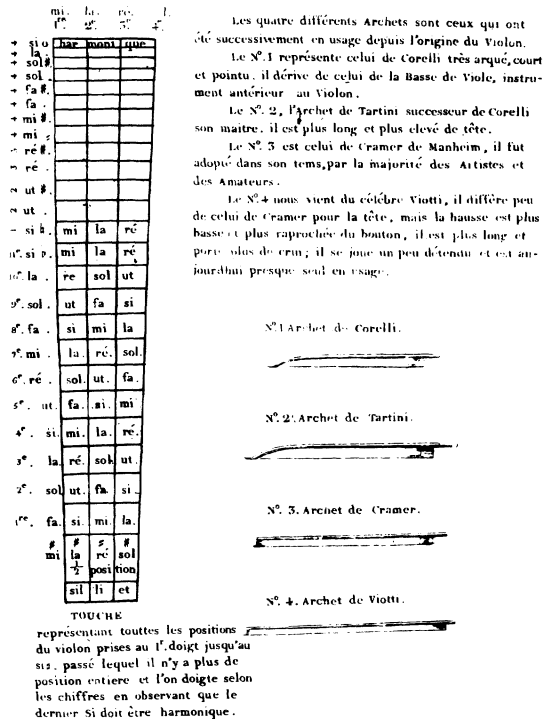
Violinschule, or by the massive bow of Franz Benda (1709-86) shown in Van der Straeten.[15] But the German bow yielded to the Italian, and more especially to a new French bow design, as exemplified by the Tourtes and others[16]—the main line of evolution after 1750. The modern bow and its development can be traced in a number of particulars to Paris and London especially (see below). Ironically, we do not know what kind of bow Bach had in mind for his sonatas and partitas for solo violin, except that it was not the so-called 'Bach' bow—an invention of the 20th century.

4. The fourth type may be called the Cramer bow, after the violinist Wilhelm Cramer (1745-99) who lived the early part of his life in Mannheim and, after 1772, in London. This bow and models comparable to it in Paris, generally prevailed between the gradual demise of the Corelli-Tartini model and the birth of the Tourte—that is, roughly 1750-85. In my view, the Cramer bow represents a decisive step towards the modern bow and I shall discuss it in detail below.

5. The fifth type is the Tourte ('modern' or 'Viotti') bow, perfected about 1785. It is the model of the bow still universally used today, and the most appropriate for music of the later 18th century: late Mozart and late Haydn, Viotti, and Beethoven. In the 19th and 20th centuries, the Tourte is used with a violin more strongly built and strung to produce a more intense and powerful tone.

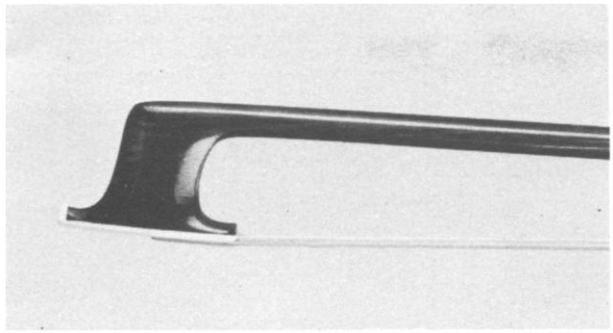
Since the Tourte bow is relatively familiar, it need not be described in further detail. On the other hand, it is essential to look more closely at the Cramer bow since so little has been written about it. This is a transitional bow, exhibiting early 18th-century features on the one hand and pointing towards the Tourte on the other. As a product of the period 1750-85 this bow is ideal to play music of the Mannheim School and the violin concertos of Mozart, among others.

We first learn of the Cramer bow from Woldemar, a Parisian violinist, the self-proclaimed pupil of the virtuoso Lolli. Woldemar wrote his *Grande Méthode* about 1800 and Fétis (my illus. 4) borrowed the four bows of Woldemar shown in my illus. 9. The Cramer was one of the prevailing models just before François Tourte, and this is very clearly implied by Woldemar who gives the series Corelli-Tartini-Cramer-Viotti. Woldemar writes: 'No. 3 is that of Cramer of Mannheim. *It was adopted in his time by the majority of artists and amateurs*' [emphasis added, translation mine]. By 'in his time' Woldemar probably meant 1772-92, the 20 years after Cramer's arrival in London when his reputation was at its height.

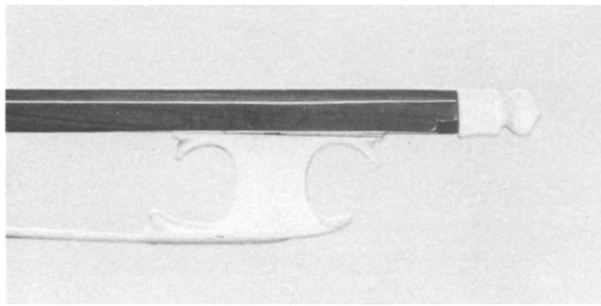


9. Four bows illustrated in Woldemar's *Grande méthode* (Paris, 1798)

Surely it is significant that Woldemar, himself a Parisian violinist, says that the most popular type of bow immediately before Tourte was that of Cramer of Mannheim, *not* that of another Parisian, such as François' father, for example. Of course, Cramer is doubtless associated with this bow as a player, and the actual maker was quite possibly a Parisian such as Tourte *père*. That this was indeed the case is suggested strongly by certain bows illustrated in colour in Vatelot's recently published book.[17] In illus. 10 a Cramer head and frog is used on a bow (*c* 1750) whose frog is stamped with large (and rather crude) letters: DUCHAINE (difficult to make out in the illustration). In addition, Vatelot shows a bow with Cramer head stamped TOURTE·L. In any case, in view of Woldemar's explicit statement, the Cramer bow must have been well known in Paris. In London, this type must also have circulated because a number of English makers produced bows with some of its features—especially the head, in original or variant forms. Can Cramer's bow originally have come from a German school of bow making? If so, it is distinctly lighter in construction than the German bow of the same time (see above, section 3); and none of the distinctive features of Cramer's bow appears on the few contemporaneous German bows known to me (e.g. Leopold Mozart's). In sum: it is likely that the Cramer head originated in France with such makers as Tourte *père*, La Fleur, and



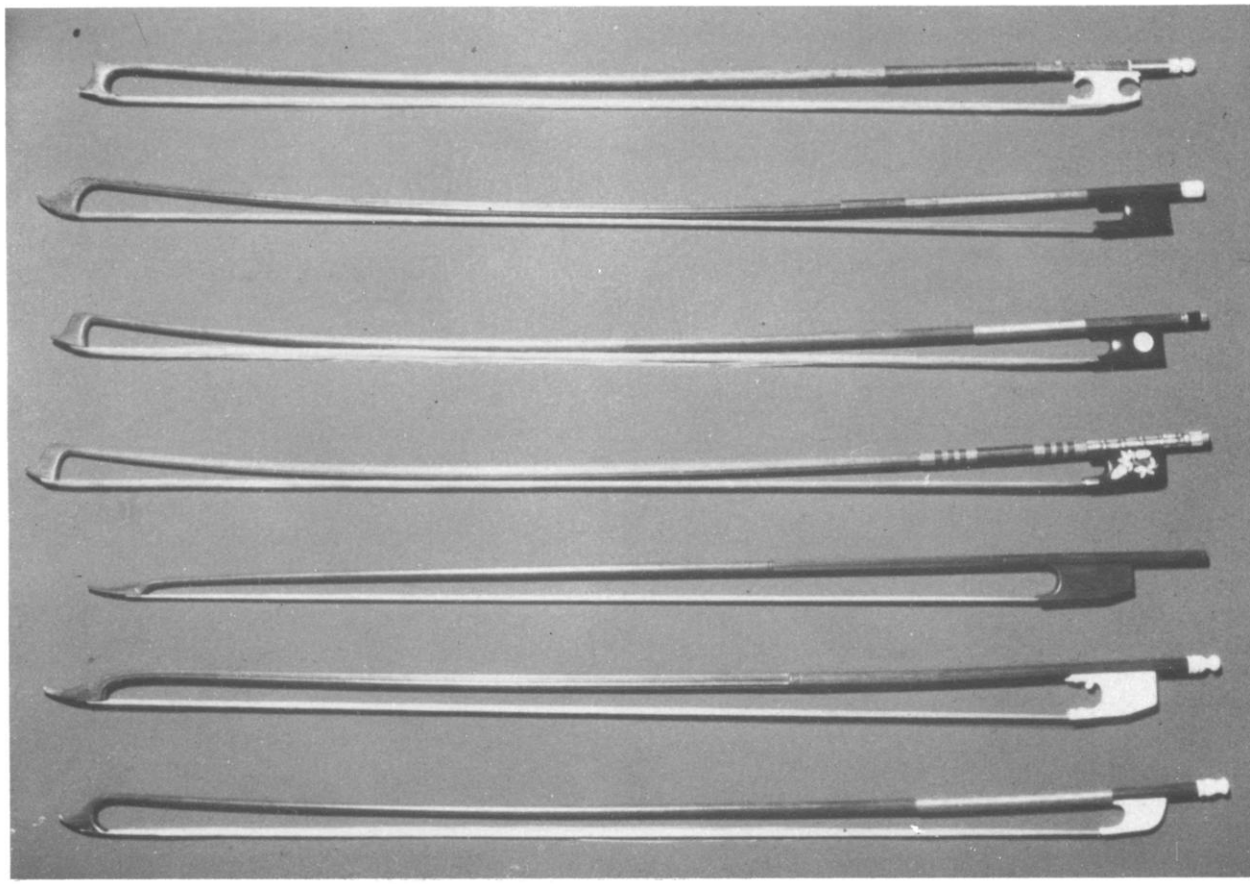
10. Cramer head and frog on a bow stick stamped DUCHAINE (*c* 1750)



Meauchand. This model was then taken up by Cramer whose career as a virtuoso player ensured that the bow enjoyed a vogue in England following his lead.

Illus. 11 shows (at the top) a Cramer model bow from the period under discussion (now in the Hill Collection at Oxford) by way of comparison with the Cramer bow shown in rather crude outline in Woldemar's illustration. In construction and playing qualities the Cramer is closer to the Tourte than to the earlier Corelli-Tartini model. More specifically, the Cramer still exhibits a natural softness of articulation (although not as great as the old bow), but being capable also of the precise attacks of the modern bow. There are three distinctive features: the form of the head, the form of the frog, and the concave curve of the bow stick. The bow head used by Cramer is a unique type with a peak in front matched by a peak in the back of the head proper. This species of head and its variant forms was widely adopted before being supplanted by the 'hatchet' head of the Tourte (illus. 1), which has the peak in front only. The Cramer type of head may be called a 'battle-axe' head; and we can see

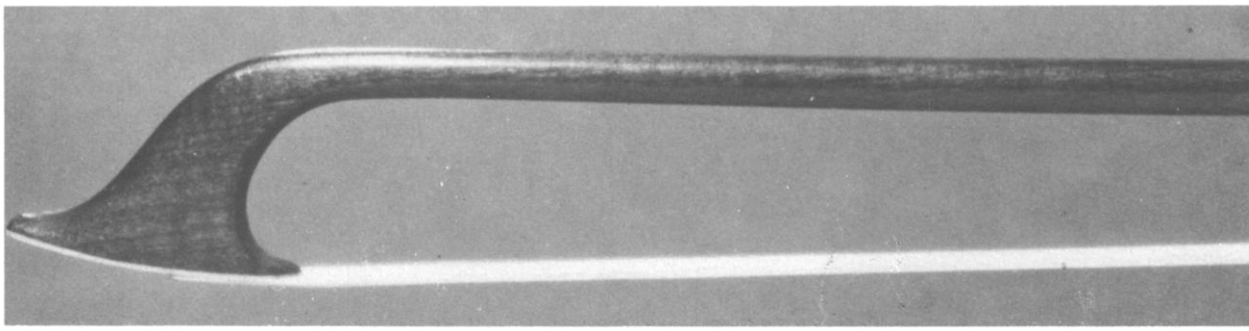
11. A number of bows from the Hill Collection at the Ashmolean Museum, Oxford, showing (at the top) one of the Cramer type



it in varying forms in extant bows such as the English one stamped FORSTER that we have already seen (illus. 1d). Illus. 12 shows the Forster bow head; although different in detail, I believe this head to be the same in principle as the battle-axe head of the Cramer bow in illus. 11.

Another distinctive feature of the Cramer bow shown in illus. 11 is a frog that is cut away in front and back. Evidently this type of frog was rather light in weight, and seems to have been used in relatively few of the extant Cramer bows.

12. Head of the FORSTER bow shown in illus. 1d



The third feature of the Cramer is the length of the bow stick, slightly longer than the average Corelli-Tartini model and somewhat shorter than the Tourte. But, more significantly, it is of concave curvature. As in the Tourte, this implies less 'give' to the hair when tightened and consequently a more immediate response in tone to the player's stroke. At first glance the Cramer stick in Woldemar appears to be straight, but a careful measurement will show a slightly concave curve; in an actual Cramer model (illus. 11) the concave curvature is appreciable.

As already mentioned, the concave curvature of the bow stick is a significant factor in the stroke. It is also significant in another way: eventually this curvature was to make the old pike's head obsolete as it required some species of raised bow head. This was so because the head of the bow had to be high enough to separate the hair from the concave bow stick in the middle of its length. The first heads that resulted were variable in design, but they all showed a departure from the low profile of the typical pike's head—either by raising and modifying the pike's head, or by using, in a number of different forms, the high square model of the battle-axe or hatchet head. Occasionally one finds a hatchet head combined with a straight stick, and this means that we cannot prove which came first—the concave bow stick or a form of the hatchet head.

Evidently the ideal towards which makers were working was a bow that combined strength, lightness and elasticity. The most satisfactory kinds of woods used in this connection were snakewood, ironwood, and especially pernambuco. Pernambuco had been used (though rarely) by some bow makers since the 17th century; François Tourte considered it ideal for bows, and, of course, all modern bows of any consequence are made of this wood.

Finally, the width of the hair ribbon of the Cramer-model bow (illus. 13a) may be slightly more than the $\frac{1}{4}''$ (about 6mm) typical of the Corelli-Tartini bow (illus. 13d) but considerably narrower than the typical $\frac{7}{16}''$ (approx. 11mm) of the Tourte (illus. 13b) or than the exceptional width of the 'Strad' (illus. 13c, see my *History*, p. 207). The frog of the Cramer bow is movable, using the modern screw mechanism, a tightening device found in the best bows from the end of the 17th century. There is still no ferrule nor slide on the Forster bow (as there is in the Tourte), possibly because the hair is not wide enough to need a ferrule to discipline it into a flat ribbon.

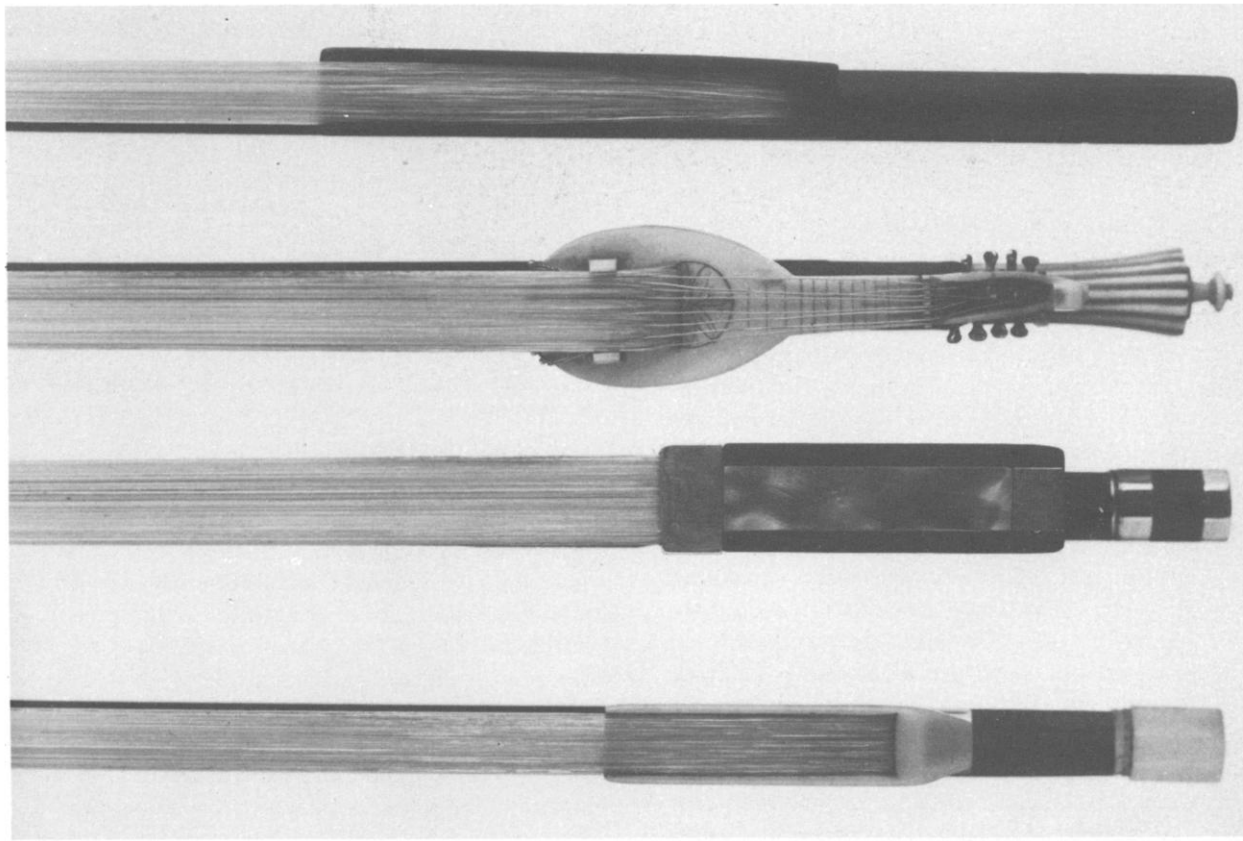
Woldemar singles out the Cramer bow as that 'adopted in his time by the majority of artists and amateurs',[18] and this information opens up a new vista on the story of the bow. Until now, the standard account of the bow's evolution went like this: the Corelli bow was improved by Tartini; then the Parisian bow makers, notably Tourte *père* (living there 1740-80), and his elder son (*fl* 1770-80) improved the bow still further; finally, based on their work, François, the younger son ('Tourte le Jeune'), perfected the model that became the standard modern bow.

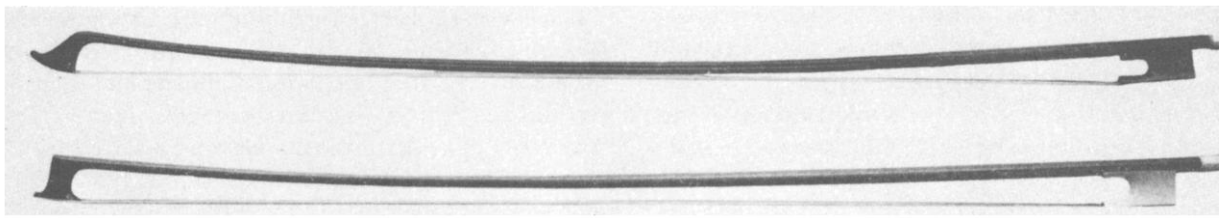
Evidently this is only part of the story. For 20 years after his arrival in London Cramer was considered the most eminent violinist in England. Cramer, although later overshadowed by Viotti, was clearly a violinist of very considerable ability, and doubtless influenced English bow makers, who had shown an impressive

talent for this craft from the early 18th century. They were among the first to stamp their names on their bows—Walmesley and his pupil Thomas Smith are examples. Various dealers like Norris & Barnes[19] or Forster employed individual bow makers such as Edward Dodd or Thomas Tubbs to make bows, and theirs were stamped with the dealer's name, not that of the individual maker. Similarly, in 18th-19th-century France, few if any of the bows stamped VUILLAUME were actually made by him personally. The Cramer-model bow stamped FORSTER and discussed above may well have been made by someone like John Dodd. The bow shown in illus. 14b is (according to Desmond Hill) by Edward Dodd to whom is also attributed the bow in illus. 15. Note the special kind of battle-axe head in the latter (illus. 14b = Hill no. 27).[20]

Where does all this new information leave Tourte *père* who is believed to have made the bow shown in

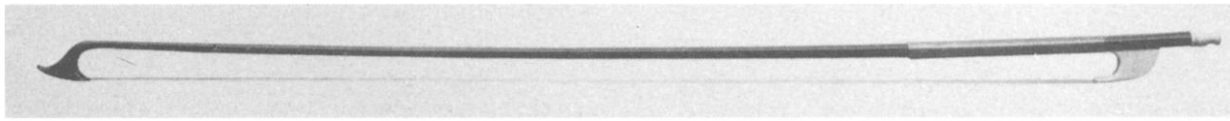
13. Details of the hair ribbons in the bows shown in illus. 1a-d





(Above) 14a, violin bow by Tourte *père* (Hill no. 26); (below) 14b, violin bow by Edward Dodd (Hill no. 27)

15. Bow with battle-axe head (variant form), by Edward Dodd



illus. 14a (Hill no. 26)? The inner peak of the battle-axe head is gone, leaving a hatchet head—in principle, the final model of the Tourte head. Therefore, the bow of Tourte *père* should be viewed as a development parallel with the Cramer bow, or perhaps in advance of it, as the immediate forerunner of the perfected and standardized model of his son, François. In this connection, there is some reason to doubt that there ever was an elder son Tourte as mentioned by Fétis.[21]

The Cramer bow and others like it were gradually rendered obsolete by the advent of François Tourte's standardized bow. Nevertheless, the battle-axe head appeared well into the 19th century, if we may judge by the lithograph of Paganini by Bégas (illus. 16) which could not have been done much before 1820 (1830 is more likely). Apart from the distinctive Cramer bow head, note also that Paganini is holding the bow short, presumably for better control.

The underlying reasons for the change from the old Corelli-Tartini model to the Cramer and, finally, to the Tourte were naturally related to musical demands on the part of composers and violinists. Undoubtedly the emphasis on *cantabile*, especially the long drawn out and evenly sustained phrase, required a generally longer bow and also a somewhat wider ribbon of hair. The type of *cantabile* achieved by the Tourte was fuller and more sustained than that achieved by the old bow. The concave bow stick also permitted a quicker response in the initial stroke, essential to produce the newly asked-for *sforzando* and *martelé* effects. In addition, contemporary documents speak of more varied bow strokes; and by this one assumes is meant special effects such as the flying staccato. It is a common assumption that the Tourte bow was created in response to a demand for a more powerful tone. This is a moot point. If anything, it is probable that the increased power of the violin after 1800 came principally from the new-model violin itself rather than from the Tourte bow alone.

What François Tourte did was to standardize all the transitional bow types, of which the Cramer was one. In this connection there is no doubt that the demise of these pre-Tourte bows constitutes a real loss in dynamic subtlety, articulation, and nuance that cannot be entirely duplicated with the Tourte, especially in chamber music. However, while the complete victory of the Tourte took years—probably into the 1830s—its triumph was, in retrospect, inevitable. In general terms, while it was not the best bow for every situation, the Tourte was doubtless best for the majority of

16. Paganini playing the violin with a bow of the battle-axe head type. Lithograph by Karl Bégas (1794-1854)

situations that confronted string players at that time.

In any case, Tourte fixed the overall length of the violin bow, including the screw button, at $29\frac{1}{8}$-$29\frac{1}{2}$″ (approximately 74-75cm), and the free playing length of hair at 25.6″ (approx. 65cm). The width of the hair ribbon was fixed at about $\frac{7}{16}$″ (11mm). Fétis says that, at the urging of Viotti, Tourte used a ferrule to make the wider ribbon of hair lie flat, and he used a slide to cover the lower part of the hair that runs along the frog (cf. illus. 13b).[22] But it is probable that others like Tourte *père* and Meauchand in Paris, not to mention John Dodd in London, anticipated Tourte with respect to the ferrule.

The advent of the Tourte bow in Paris about 1785 is generally the end of the story. But to stop there neglects the parallel development in England, and it overlooks a few connections between the two. If Tourte *père* is the immediate model for his famous son, the same might be said of Edward Dodd (1705-1810) relative to his famous son, John (1752-1839), often called with good reason the 'English Tourte'. John Dodd's bows rival those of François Tourte although they are less elegant and often shorter.

Whether the developed Dodd bow in England and the perfected Tourte bow in Paris were arrived at independently or through some knowledge of the work of the other, we do not know; nor do we know

which came first. But in view of the travels of foreign virtuosi, it would be strange if leading makers in London and Paris knew nothing of the work of each other, even through the period of strained political relationships between England and France at the end of the 18th century.

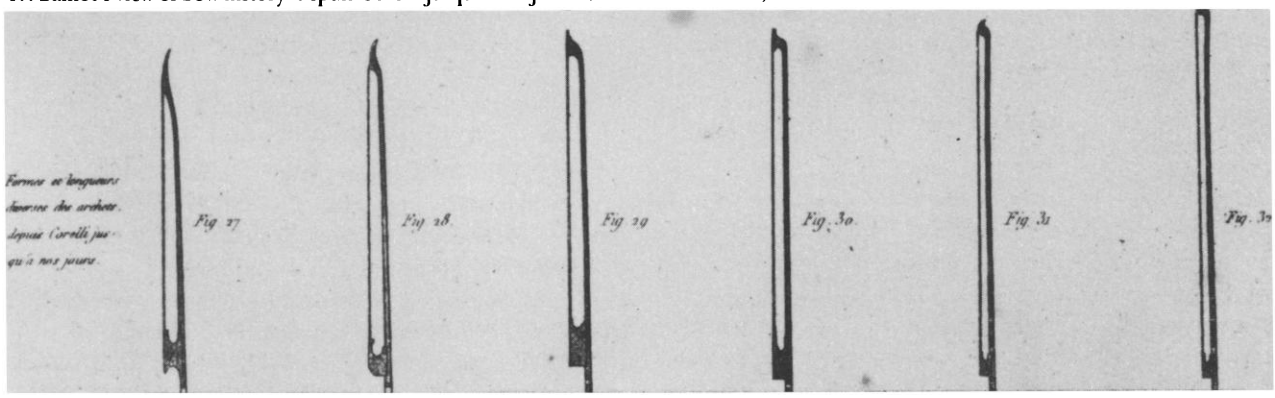
In the case of Viotti, at least, we have enough information to draw certain inferences, no matter how tentative. Viotti arrived in Paris in 1781 or early 1782 and he stayed there for ten years. During this time, according to Fétis,[23] he gave advice and guidance to François Tourte in his efforts to perfect the bow. The assumption is unavoidable that Viotti must have used a Tourte bow. Viotti was obliged to flee to England in 1792 because, in Revolutionary France, his connection with the Court had endangered his life. Surely, Viotti must have taken a Tourte bow with him to England; and if the English did not know a Tourte-model bow by 1792—which seems most unlikely—they must have known it after this date, especially since Viotti displaced Cramer from his position as the leading violinist in England.

It is possible that Viotti began to play with a bow by John Dodd as well. This notion is suggested by Baillot's *L'Art du violon*; illus. 17 is taken from that treatise, and it shows Baillot's representation of the evolution of the bow from Corelli to himself. Only the last two bows on the right need concern us here. Baillot says that the bow at the extreme right is that in standard use, which was certainly the Tourte bow. Its length, says Baillot, is 27½ *pouces* (that is about 29.3″, or 74.4cm), the typical length of a Tourte. These measurements also conform to those of Baillot's own Tourte bow, now in the Library of Congress, Washington D.C. The bow immediately to the left of Baillot's in illus. 17 is Viotti's, according to the author, and is appreciably shorter than a typical Tourte, measuring 28½″ (72.5cm), approximately the length of a bow by Tourte *père* or by John Dodd (no. 29 in the Hill Collection is 28¾″). Baillot, whose treatise is remarkable for its completeness and accuracy, was a close associate and colleague of Viotti and, consequently, we have every reason to trust what he says. Baillot also gives the width of the Tourte bow hair as 4 to 5 *lignes* (⅜-7/16″ or 9-11mm), a quite typical measurement.

Although discussion of the Cramer bow and the English school of bow making broadens and corrects the perspective of the history of the bow, the importance of Paris remains undiminished as the focus of intense activity in bow making at the end of the 18th century. Paris was also the centre of a newly-awakened interest in violin making and violin technique. For the first time in France, a great violin maker appeared in the person of Nicholas Lupot (1758-1824). More significant, perhaps, the development of violin technique in Paris advanced so rapidly that the French School became the violin teacher to the rest of Europe in the 19th century, especially after the appearance of Baillot's treatise in 1834. After the introduction of the sonata style to France around 1725, the technical advance in French violin playing was exceedingly swift. A monument to this was the treatise of Abbé le Fils (1761) which, among other things, described all the natural and artificial harmonics.[24]

Thus the leadership in violin technique and in making violins and bows passed from Italy to France in the late 18th century. Viotti, a pupil of Pugnani, gravitating to Paris and later to London, is a symbol of the changing times. In him, French and Italian traditions merge: the classical Italian style of *cantabile* and figuration on the one hand, the newly developing French technique on the other. This new amalgam is the style that French violinists like Baillot, Rode and Kreutzer, pupils and colleagues of Viotti,[25] spread throughout Europe, and the Tourte bow went with them.

17. Baillot's view of bow history 'depuis Corelli jusqu'a nos jours' (from *L'Art du violon*, 1834)



With the exception of Stradivari, no maker of violins or bows in history has received greater praise than François Tourte; and without wishing to detract in the slightest from his renown, I think it is now time for him to share some of the credit with others, for this design did not appear in the twinkling of an eye like Venus from a conch shell. The Tourte bow was produced by a process of evolution, not revolution, over a period of some 40 or 50 years, and it required the efforts of dozens of craftsmen, some of whom can be identified, such as John Dodd of London and Tourte's father in Paris. Others, including the designer of the Cramer bow, were men of more than ordinary talent, yet remain anonymous.

Tourte may not have invented anything new. Nevertheless, he was a superb craftsman who was able to coordinate and combine the best features of earlier bows into a type so successful that it has remained the standard bow for each succeeding generation, including today's. This fact should not blind us to the extraordinary properties of earlier bows, the cream of which were, in some respects better suited than the Tourte to playing music for which they were designed. The clip-in and Stradivari bows discussed above were supremely satisfactory in their own time; and they became obsolete only when the music for which they were intended became obsolete. In this article I have tried to demonstrate the beauty, physical properties, and playing capacity of the old bow, the Cramer bow and modern bow, among others, and also why the bow evolved in the way it did. These facts and the new information concerning the Cramer bow and the English school of bow making will, I hope, open new horizons in research and in the performance of violin music of the 18th century.

[1] David D. Boyden, 'The Violin and its Technique in the 18th Century', *Musical Quarterly*, 36/1 (January 1950), pp. 9-38.

[2] *The History of Violin Playing from its Origins to 1761* (London, 1965).

[3] For an excellent, short and up-to-date summary of the history and evolution of the bow in the 17th and 18th centuries see J. H. Van der Meer in *The Carel van Leeuwem Boomkamp Collection of Musical Instruments, Descriptive Catalogue* (Amsterdam, 1971), pp. 55-7.

[4] Henry Saint-George, *The Bow* (London, 1896, 3/1922).

[5] F. J. Fétis, *Antoine Stradivari* (Paris, 1856); trans. John Bishop, *Notice of Anthony Stradivari* (London, 1864), p. 112.

[6] 'On peut appeller l'Archet, *l'Ame de l'instrument* qu'il touche, puis qu'il sert a donner l'expression aux sons, a les filer, a les enfler, et a les diminuer.' L'Abbé le Fils, *Principes du violon* (Paris, 1761 *R* 1961), p. 1.

[7] Marin Mersenne, *Harmonie Universelle* (Paris, 1636 *R* 1963). Proposition 1, from the Fourth Book of Instruments, trans. Roger Chapman (The Hague, 1957).

[8] see Boyden, *History*, pp. 151 and 174.

[9] Michel Woldemar, *Grande Methode de Violon* (Paris, 1798).

[10] P. Baillot, *L'Art du violon* (Paris, 1834).

[11] Sir John Hawkins, *A general history of the science and practice of music* (London, 1776 *R* 1875) gives the overall length of a violin bow as 28″ in 1776 and that of a 'sonata' bow as 24″ in 1720. Baillot, op cit, says that the Corelli bow was 2 *pouces* (1 *pouce* = 1.066″) less than that used 'today' [in 1834]. By 1834, the bow had long since been standardized to its modern length of about 29½″. Consequently the Corelli bow in Baillot measures a little over 27″.

[12] Fétis, op cit, English translation p. 111.

[13] E. Van der Straeten, *The History of the Violin*, 2 vols (London, 1933) 1, opposite p. 33.

[14] Leopold Mozart, *Versuch einer grundlicher Violinschule* (Augsburg, 1756); trans. E. Knocker, *A Treatise on the Fundamental Principles of Violin Playing* (London, 2/1951), p. 97 §3. Robert Donington, *A Performer's Guide to Baroque Music* (London, 1973) takes issue with 'yielding hair' and 'small softness' as above. Yet this is implicit in the language of Leopold Mozart and Tartini, and the 'yielding hair' is remarked on by all concert violinists with whom I have worked. Thus Sergiu Luca, in the notes accompanying his recent complete recording of the Bach unaccompanied violin sonatas (Nonesuch HV 73030) speaks of 'a slight sagging sensation when the hair comes in contact with the string'.

[15] op cit, opposite p. 209.

[16] For a summary account of transitional bows and their action and articulation, see Pamela Goldsmith, 'Transitional Bows', *American String Teacher* (Summer 1974) and 'Bowing Articulation in the Transitional Period', *The Strad* (March 1979), p. 1039.

[17] E. Vatelot, *Les archets francaises* (Nancy, 1976), illus. 10, p. 229. DUCHAINE is stamped in large letters, the N being reversed.

[18] Woldemar, op cit, p. 1 (actually marked p. 3), reproduced as my illus. 9. The passage cited is ll. 8-10.

[19] For an account of a Norris & Barnes bow which 'behaves in a surprisingly "modern" manner', see Eric Halfpenny, 'An Unusual English 18th-century Violin Bow', *GSJ* (May 1976), pp. 128-9.

[20] see Boyden, *Catalogue of the Hill Collection* (London, 1969).

[21] Vatelot, op cit, 2, p. 888.

[22] Fétis, op cit, English translation p. 118.

[23] ibid, p. 118.

[24] L'Abbé le Fils, op cit, pp. 72-3.

[25] Baillot, Rode and Kreutzer were all associated with the newly-founded Paris Conservatoire, whose first violin method, *Méthode de violon . . . adoptée par le Conservatoire* [1803], they wrote collectively.