

HEINRICH STOELZEL AND EARLY VALVED HORN TECHNIQUE¹

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A complete examination of the early technique of the valved horn of necessity begins with the first valved horn player, the inventor of the valve, Heinrich Stöelzel (1777–1844). Born in Scheibenberg, Saxony, Stöelzel was the only son of town musician Christian Stöelzel. He was a member of the band of the Prince of Pless in the early 1800s and in 1817 began playing in the Royal Opera orchestra in Berlin, retiring with a pension from this position in 1829.² The 1840 edition of Schilling's *Encyclopedia* noted that "as a young man he was known to be an outstanding master of his instrument."³

The invention of the valve and its application to the horn in 1814 by Stöelzel⁴ led to great changes in the design and technique of all brass instruments. At that time the natural horn was probably the brass instrument with the most developed technique—certainly the largest solo repertoire—and this invention both solved some old problems and created new ones. With valves it was now possible to produce all the notes of the chromatic scale with an even tonal color; however, there was no established technique or notation for the new instrument, and most performers had a deep vested interest in the continued use of the natural horn. The valve was not necessarily a welcome invention.

The reasons for the mixed reception given to the valve are complex, but generally relate to aesthetics. One of the clearest discussions to be found on this issue was written by Louis-François Dauprat (1787–1868), who was professor of horn at the Paris Conservatory from 1816 until 1842. His monumental three-volume *Méthode de Cor alto et Cor basse*, published in 1824, contains a brief chapter entitled "On the changes and improvements that some would like to see applied to the horn." While his comments are not direct reactions to the valve, they are nevertheless enlightening.

Some have wished that by means of holes and keys the considerable series of factitious sounds on the horn might be eliminated, while at the same time and in the same way those that are totally lacking in the low register would become possible. But this method, already applied to the trumpet, has changed the timbre of the instrument to the point of giving it a quite peculiar character, creating an instrument that is neither a trumpet nor any other known instrument. . . .

The horn would probably fare likewise were it made to undergo similar alterations: it would lose its character and the true quality of its natural and factitious tones. Most of these latter have a charm that is particularly theirs, and which serve, so to speak, for shadings and nuances in contrast with the natural sounds. It must then be presumed that, far from gaining by their complete removal, the horn would lose a great deal. And what is said here

about the various sounds of the complete range of the instrument must obviously extend to the different crooks. Each of these, taken by itself, has its own color, its timbre, and its special character; but if they were all combined in a single assembly, becoming but one and the same instrument, this instrument would certainly have, if you will, the same range of low, high, and middle sounds. However, the more the new inventions produce equality among all the sounds, the more the characters, colors, and timbres of the individual crooks would be distorted and confused.⁵

While Dauprat in this article primarily argues against the keyed brasses, one also senses that he feels that valves are a bad idea. He refers to two important underlying aesthetics of natural horn playing. The first is that the differences of tonal color resulting from the use of different crooks are artistically desirable. The second and more critical point is that the shades of tonal color resulting from performing melodies using hand-horn technique are considered especially expressive nuances that should not be suppressed. They are a part of what makes a horn sound like a horn and gives the instrument its special tonal color.

Nevertheless, a number of Dauprat's contemporaries were conducting experiments toward making the horn completely chromatic. One of the most interesting experiments is documented in an 1812 article in the *Allgemeine musikalische Zeitung*, "Wichtige Verbesserung des Horns" (Important Improvement to the Horn), by the composer and theorist Gottfried Weber (1779–1839).⁶

Weber reports that Christian Dikhuth, a hornist in the court orchestra in Mannheim,⁷ had applied a short trombone slide with a return spring to the horn, a feat which he had accomplished by 1811.⁸ The invention operated on the same general principal as the English slide trumpet, which dates from the end of the eighteenth century.⁹ The slide could be used to lower the pitch of the instrument by a half-step and was pulled into an extended position by means of a clock-spring mechanism unless held in—its normal position—by the performer. No example of this design is known to have survived, but based on the published description,¹⁰ the instrument could be illustrated as below:¹¹

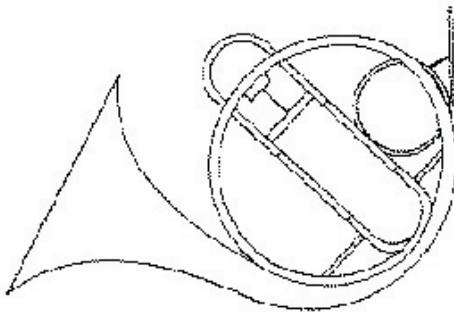


Figure 1
Slide horn.

Weber's review showed how this mechanism could be used not only to correct intonation, but also to produce a number of new pitches without stopping the bell with the hand. Other notes, previously available only by heavily stopping the bell, could now be produced by using the hands in conjunction, the left thumb operating the mechanism by means of a cord attached to the slide and the right hand lightly stopping the bell. While this invention did not make the horn fully chromatic, it was now possible to use much less coverage with the right hand and thus obtain a much more even tonal color.¹²

After reviewing the technical advantages of the new instrument, Weber went on to show how the invention could be put to good use in the orchestra:

The writer might also say that he was recently very surprised by the effect of the horn passage in the finale of Beethoven's *Eroica* symphony,



which can scarcely be heard, but on *this* instrument has an astounding far-reaching effect.¹³

With this comment Weber pointed out what he perceived to be a major problem of the natural horn in the orchestra; the muffled sound and poor projection of heavily stopped notes. This defect was easily corrected by the use of Dikhuth's invention, as a complete chromatic scale above written *b* could be performed in open and lightly stopped notes. He closed the review by stating, "The manipulation of the slide is so simple that every proficient player might adapt himself to it,"¹⁴ and concluded by noting his surprise that this invention had received so little public acknowledgement.

Several contemporary artists also tried to apply keys to the horn. Following his success with the keyed trumpet, the Viennese trumpeter Anton Weidinger (1767–1852) designed a keyed horn for his twelve-year-old son Joseph, who performed on the new instrument on a concert with his father on 28 February 1813.¹⁵

A report in the *Allgemeine musikalische Zeitung* in 1815 also states that Schugt, a hornist from Cologne, had successfully demonstrated a keyed horn in the fall of 1813.¹⁶ Details of the construction of the instruments of Weidinger and Schugt are not known, but at least one nineteenth-century keyed horn survives: it has three large keys in the region of

the bell throat and bell tail.¹⁷ These could be used to raise an instrument pitched in F to F-sharp, G, and A-flat, but would not allow the placement of the hand in the bell of the horn and would significantly alter the tonal color as well.

The idea of placing keys on the horn seems to have received as little notice as did the slide horn. These inventions are however quite significant historically from the standpoint of demonstrating a desire in some quarters to improve on the natural instruments then in use by increasing their chromatic capabilities.

Of the names associated with Heinrich Stoelzel and the invention of the valve, certainly one of the most well-known today is that of Friedrich Blühmel (fl. 1808–before 1845), a miner who played trumpet and horn in a band in Waldenburg.¹⁸ Blühmel designed a valve independently from Stoelzel, his experiments with what were apparently rotary valves dating back to 1811/12.¹⁹ While Stoelzel and Blühmel eventually agreed to apply for a common patent on the box valve, a design which Blühmel had developed in 1817/18,²⁰ an important document from Blühmel survives in the form of a separate patent application, dated 18 February 1818, in which he states why he wanted to add valves to brass instruments. Blühmel begins by relating that the imperfections of the horn and trumpet, on which he had performed since 1808, had led him to experiment. He continues,

The numerous uses of the mechanical forces, which I had an opportunity of seeing during my presence in Upper Silesia, particularly the various air pipes used in the blast apparatus of the high and low furnaces, which always led me back to the basic idea of executing an improvement on these instruments, I believed I could use to reach my goal and therefore sought the company of the keepers of the machines and other experts in order to comprehend the closing and opening of the wind pipes, whilst I started out with the idea of which way the air must pass through the tubes of the instrument, to lengthen or shorten according to certain dimensions, in order to make up the missing notes of the compass....

Collecting all the keys together soon made it clear, that the addition of a semitone- and a whole-tone-loop, which could be opened and closed whilst remaining in close contact with the instrument and which lowered the note played by a semitone, whole tone. or 1 1/2 tones, could be effected.

In Waldenburg I experimented with my idea and learned to solder in order to reduce costs.... In 1816 I finally got results, whereby all the whole tones and semitones could be played on the trumpet by means of two valves and now there was nothing left for me to do but to simplify the mechanism even more and to confine it within a narrow space.²¹

Blühmel clearly wished to fill in “the missing notes of the compass” of the brass instruments—to make them chromatic. Why then did Stoelzel invent his valve? It has been stated that Stoelzel simply wanted to facilitate quick crook changes on brass instruments. An article by F. J. Fétis, “Cors á Pistons,” from *Revue Musicale* 2 (1828), appears to be the original source of this idea, with Fétis obtaining his information from Dauprat and

Meifred.²² Fétis repeated the same basic information in an 1833 article in *Revue Musicale*, where he stated the following:

In 1815 or 1816 a German musician named Stöelzel, hitherto unknown, conceived the idea of eliminating the obligation of carrying around all the additional tubing, with which he changed the key of the horn, when he went into the villages to accompany country dances, and of making a horn which he could play in all keys. After some very unfruitful research, chance suggested to him the idea of placing on the tuning slide of the instrument two boxes each of which contained a piece of brass pierced by holes and placed on a spiral spring. When the spring was expanded it pushed up the piece of brass, the holes of which did not meet at that time those of the additional tubes which were intended to lower the instrument a half tone, a tone or a tone and a half. But when the fingers were applied on the pistons the holes met, the air circulated and the effect was produced.²³

This basic account of Stöelzel's invention has been repeated and expanded upon numerous times, justifying the idea that the valve was invented solely to make fast changes of crook.²⁴ However, this account is perhaps too fanciful to be taken at face value. Beyond the rather suspect details of Stöelzel's professional life, it is notable that Fétis describes not Stöelzel valves but box valves, and that these valves were placed on the tuning slide.²⁵ The box valve, as already noted, had been developed by Friederich Blühmel. Fétis' description sounds suspiciously like the instrument partially depicted in Figure 2 (marked "fig. 1" within Figure 2), one of two horns illustrated in the 1828 article. This early valved horn was sent by Gaspard Spontini (1774–1851, Generalmusikdirektor of the Berlin Opera)²⁶ to Dauprat in 1827, and had been manufactured by Schuster of Carlsruhe.²⁷

The other illustration of a horn in the 1828 article is of a horn with two Stöelzel valves (marked "fig. 2" within Figure 2). This particular design had been created in 1826 by the pioneer French performer of the valved horn, Joseph Meifred (1791–1867). Meifred commissioned Labbaye to construct a horn on this design, with tuning slides on the valves—an innovation of Meifred's. The instrument won a silver medal at the Exhibition of Products and National Industry in Paris in 1827.²⁸ Notably, in his 1829 publication *De l'Entendue de l'Emploi et des ressources du Cor en général et de ses Corps de rechange en Particulier* ["The range, use, and resources of the horn in general and its crooks in particular"], Meifred both refers to the 1828 article by Fétis and emphasizes the possibility of making crook changes with the valves.²⁹ His emphasis is hardly surprising, however, as this publication was written with the purpose of demonstrating for composers the proper use of crooks on the natural horn. Why do French sources repeatedly mention the use of the valved horn to make crook changes? Apart from aesthetics, the underlying reason may be the invention in France of the omnitonic horn. It has been suggested that valved and omnitonic horns were developed for the same reasons.³⁰ Their simultaneous invention, however, could very well have been the simple result of the application of the same basic technology to solve different problems.

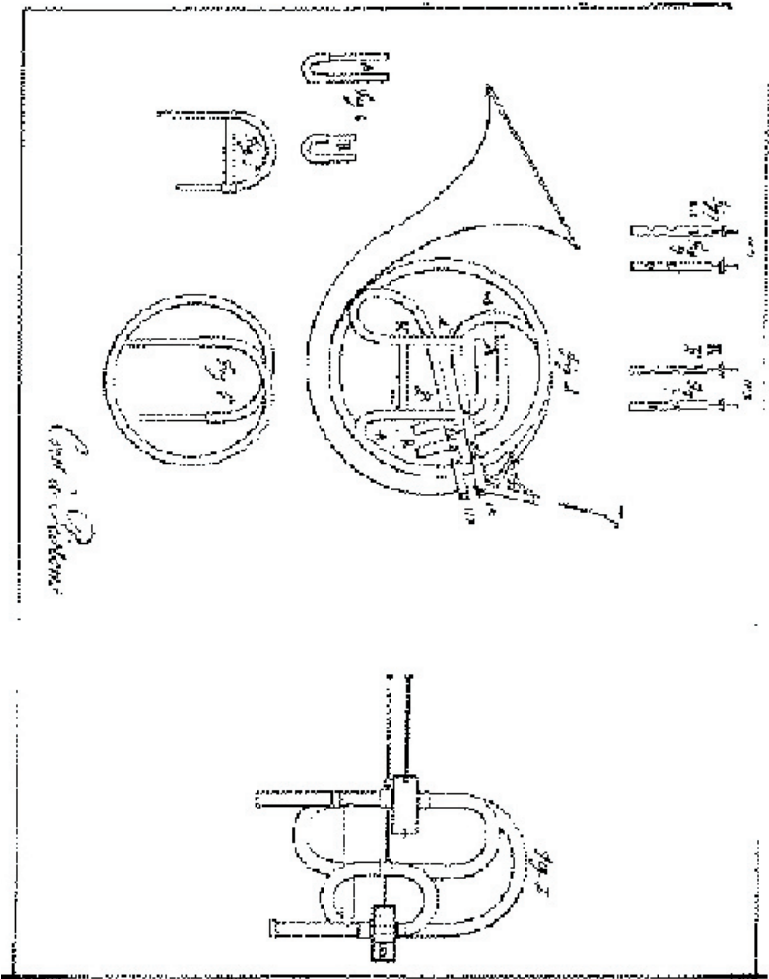


Figure 2

Illustration from F.-J. Fétis, "Corns à pistons," *Revue musicale* 2 (1828), plate between pp. 158 and 159.

The first omnitonic horn was constructed ca. 1815 by J.-B. Dupont of Paris.³¹ His invention allowed the horn to be tuned in any key without the use of separate crooks by means of a long graduated valve; it saw several improvements in design during the early nineteenth century.

While the mechanism of the omnitonic horn outwardly had the same function as the valve, that of changing the length of the horn, the ultimate purpose of the mechanism was different. The omnitonic horn was not a fully chromatic instrument, and could not be played as such. The key-changing mechanism was not designed to be operated instantaneously while playing and the instrument could not perform music more complicated than that of the natural horn, as it relied on the usage of the right hand in the bell to perform diatonic and chromatic passages. The valved horn, on the other hand, could easily perform fully chromatic music and could be used to perform any pitch as an open tone without resorting to hand-horn technique. The statements found in French sources that Stoelzel also wanted primarily to only add a simple key-changing mechanism to the horn are likely influenced by the parallel invention and use of the omnitonic horn.

Indeed, as I have been unable to locate any contemporary German source that states the theory that valves were originally developed as substitutes for crook changes, nor any early compositions to support it,³² the question of Stoelzel's intent in inventing the valve should be reexamined. Fortunately, one important document from Heinrich Stoelzel himself has survived. The following letter, dated 6 December 1814, was sent by Stoelzel to Friedrich Wilhelm III, King of Prussia:

Most illustrious, most mighty King
Most gracious Lord and Majesty!

The horn, to which I have chiefly dedicated myself, is most defective as regards the inequality of its notes and the impossibility of producing them with the same purity and strength. This fact often made me very impatient and led me to make experiments which might alleviate the problem, which at the beginning were all failures, but which finally led me to an invention, which rewarded me for all my trouble and satisfied my demands on the instrument. My horn can play all the notes from the lowest to the highest with the same purity and strength without having to stop the hand into the bell. The mechanism of my invention is most simple, can be employed easily and quickly and everyone who plays the instrument can make himself thoroughly familiar with its application in a few days. This device renders the many crooks superfluous and makes it possible for the artist to play all the notes without losing any of the instrument's tone. This mechanism can also be applied to the far more imperfect trumpet and even to the bugles. Because the trumpet, whose compass hitherto consisted of 13 notes and through my invention has received 24 additional notes, which sound just as beautiful and pure as those 13 and for which now composers may write in not so limited fashion, but in any major or minor key as they wish, I believe

that I do not exaggerate in promising your Majesty that by means of these instruments music may be made which will astound the world. I submit myself to every examination and am of the assumption that your Majesty may assist me further in this matter which is so important to the world of music and I am in the happy anticipation and yearn for nothing more than to be able to lay my instruments at your Majesty's feet which would then give me the hope of your Majesty entrusting me with the introduction of this new music to the regiments and of rewarding me according to the value of my invention.

I remain your most humble servant,
Pless, on the 6th Dec. 1814
H. Staelzel³³

Using the valves to make crook changes was always available as an option, but from the above passage it is very clear that Staelzel's original intention in inventing the valve was to make brass instruments fully chromatic.

This letter offers several important insights into the actual techniques Staelzel employed in performing on the valved horn. First we learn that the "device renders the many crooks superfluous." From this it would appear that he saw no need to employ crooks of any sort on his horn, the implication being that horn parts in other keys would be transposed. We do not know the key in which his horn was pitched, although F is certainly possible, as it became a standard used in Germany. The other major insight comes from the statement, "My horn can play all the notes from the lowest to the highest with the same purity and strength without having to stop the hand into the bell." From this it can be deduced that he did not see any reason to continue stopping the bell with the right hand.

The first published notice of the invention of the valved horn was a short article published in the *Allgemeine musikalische Zeitung* on 3 May 1815, written by the composer Gottlob Benedikt Bierey (1772–1840), music director of the theater in Breslau. Bierey gave the invention a very favorable report.

Heinrich Stölzel, the chamber musician from Pless in Upper Silesia, in order to perfect the Waldhorn, has succeeded in attaching a simple mechanism to the instrument, thanks to which he has obtained all the notes of the chromatic scale in a range of almost three octaves, with a good, strong and pure tone. All the artificial notes—which, as is well known, were previously produced by stopping the bell with the right hand, and can now be produced merely with two levers, controlled by two fingers of the right hand—are identical in sound to the natural notes and thus preserve the character of the Waldhorn. Any Waldhorn-player will, with practice, be able to play on it....

I have become convinced of this mechanism and its usability and declare, as a matter of both my insight and the truth, that its use imparts to

the Waldhorn a perfection not hitherto attained, and produces an effect in full-voiced music not previously known.

...What a new realm of beautiful effects this has opened up to composers!³⁴

It is interesting, even curious, that Bierey mentions that the elimination of the stopped notes would “preserve the character of the Waldhorn.” As the valves were fingered with the right hand, which Bierey notes was normally used to stop the bell, one wonders if he considered placing the hand in the bell essentially a compromise for the sake of chromaticism—rather like the use of the hand in the bell in stopped trumpet playing, a technique employed from ca. 1775–ca. 1850.³⁵

The Leipzig music director, organist, and composer Friedrich Schneider (1786–1853) also reported on Stözel’s horn in the *Allgemeine musikalische Zeitung* in 1817. He too gave the invention a very positive review, vividly explaining its benefits.

Because of its full and strong, yet soft and attractive tone, the Waldhorn is an extremely beautiful instrument; but, as is well known, it has until now been far behind almost all other wind instruments in its development, being very restricted to its natural notes....

Herr Stözel of Breslau has now completely removed these shortcomings... He has simply provided his horn with two airtight valves, which are depressed with little effort by two fingers of the right hand, like the keys of the pianoforte, and restored to their previous position by the same two fingers with the help of attached springs; with these it is not only possible but also easy to produce a pure and completely chromatic scale from the lowest to the highest notes with a perfectly even tone. On this horn, therefore, there is no need to change from one key to another, and the same passage can be repeated immediately in a different key; even passages which previously were absolutely impossible to play on the normal horn can now be performed without difficulty.

How solo horn-playing will benefit from this invention is easy to imagine: one only has to think of the eternal monotony of passages played on the horn in concert music up to the present.

Now it is particularly striking and effective to hear low notes with the full, even strength of the horn’s tone.³⁶

While offering few more specific details on the invention than Bierey, Schneider clearly states how useful he feels the invention will prove to be. Most notably he states that “there is no need to change from one key to another” on the valved horn, indicating that Stözel likely did not use more than one crook on the new instrument.

From these reports of Bierey and Schneider we learn further that Stözel’s first instrument was equipped with two valves controlled by the fingers of the right hand, and that it could play a chromatic scale of almost three octaves. Horns fingered with the right hand are rare. A late nineteenth-century example of a rotary-valved instrument fingered with

the right hand is illustrated in Figure 3, and similar early nineteenth-century instruments are known to have been manufactured.³⁷ A horn built on this pattern would be held with the bell to the right, as is normal, and fingered by the right hand on the side of the horn near the bell, entirely precluding the use of a hand in the bell.

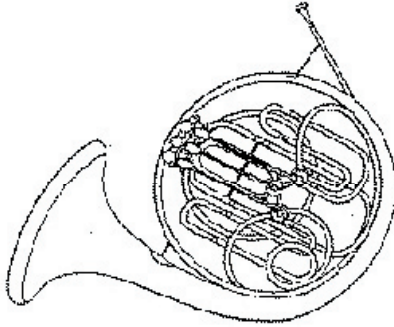


Figure 3

Illustration from L. Uhlmann advertising literature, ca. 1890, reprinted by permission from Hans Pizka, *Hornisten Lexikon* (Kirchheim, 1986), p. I-57.

While it is possible that Staelzel constructed his horn “backwards” from standard practice, with the left hand in the bell (some natural horns were built on this pattern), it seems more likely from Bierer’s commentary, quoted above, that he followed the normal pattern with the bell to the right, with valves operated in a manner similar to that shown in Figure 3.³⁸

Right-hand technique on the natural horn had been developed to a high degree in this period, and certainly every early artist on the valved horn had been thoroughly trained in the technique. One wonders, however, if some of the earliest players of the valved horn discontinued the practice. One important later nineteenth-century source indicates that at least some early valved horn performers did not place the right hand in the bell. Henri Kling (1842–1918) in his *Horn-Schule* (pub. 1865)³⁹ cited the following quotation from an earlier, unnamed method: “In the case of the Ventil Horn, the right hand performs another function; the three middle fingers being employed in manipulating the valves, while the hand is only placed in the bell of the instrument when a tone requires to be stopped.”⁴⁰ Especially notable is the use of the right hand to finger the valves, as would appear to have been preferred by Staelzel. Other artists on the valved horn did, however, quickly realize the importance of placing the right hand in the bell to maintain the overall tonal color of the natural horn. This use of the right hand was a very critical issue in a period when many felt that the valved horn had an inferior tonal color.

A report from 1835 in the *Neue Zeitschrift für Musik*, entitled “Ueber die Verbreitung des chromatischen oder Ventilhorns” [“On the Spread of Chromatic or Valved Horns”], offers a German perspective on this issue. The reviewer, identified only as “C. Rdt,” presents a decidedly mixed appraisal of the valved horn.

The report opens by noting the increasing number of horn players and the importance of the stopped tones in forming a characteristic sound. The author remarks that the sound of the valved horn was rather trombone- or bassoon-like, and so composers must combat monotony when writing for valved horns.⁴¹ Heinrich Gugel⁴² had shown how to avoid the dull tones of the natural horn in his etudes, and, according to “Rdt,” “every famous hornist” was opposed to the valved horn as the mechanism harmed the production of smooth slurs when valve changes were required.⁴³

“Rdt” notes, however, that in spite of his reservations the valved horn is a very suitable fourth horn in quartets, although he further states that he does not understand in general why a first hornist would use a valved horn. For military music he recommends two natural and one or two valved horns to complete the brass section, and he also recommends that the valved horn be incorporated into operatic music, using two natural and two valved horns. The report concludes,

I strongly recommend to composers the study of the conventional natural horn, as until now its effect remains unknown and unobserved; in the opera, for example, strongly played, *brassy* stopped notes can lend a shocking, hair-raising effect to coarse subjects, and an accompaniment or solo for four differently pitched horns, selected so that mostly stopped notes are required, would certainly create a beautiful effect.⁴⁴

On the positive side, “Rdt” hints at what was seen as the first great advantage of the valved horn: a full low range. But he also points out several perceived faults of the new instrument; these would have to be addressed by performers.

While Staelzel used the right hand to finger the valved horn, other performers certainly were fingering the valved horn with the left hand very early on, as is confirmed below. The advantage of this practice is that it maintained the normal playing position of the natural horn.

Another publication of Friedrich Schneider, his *Elementarbuch der Harmonie und Tonsetzkunst* (“Elementary book of Harmony and Musical Composition,” 1820)⁴⁵ is of interest for its information on the early valved horn, coming just three years after his article introducing the valved horn in *AmZ*. Schneider opens the section on the horn with an explanation of the harmonic series and the proper notations for natural horns in all the standard crooks from low to high B \flat .⁴⁶ The full range of the horn is then given, including all possible stopped tones, along with the remark that Staelzel’s recently invented valve had solved the problem of unevenness of tone in the stopped notes. Schneider notes that the valves were easily operated by the fingers of the *left* hand (instead of the right hand, as he reported in 1817—a design change likely influenced by other makers or performers),

and that valves make possible a completely uniform tonal color. He further states that the valve has now been improved by Sattler and also applied to the trumpet and the trombone. That he still considers the natural instrument to be the standard, however, is clear from his closing paragraph.

The natural limitation of this instrument makes it necessary to use the horn more sparingly than the trumpet and trombone. However, because of the desirable effect which the horn can have when used wisely and sparingly, it would be a shame for a composer to neglect any opportunity to use the horn wherever its tones fit the harmony. In orchestral music, the horn may be used partly to fill out the harmony and partly to strengthen the melody and the bass. Also, solos suited to the character of the horn are especially effective in the right places. For example, who does not know the splendid effect of the horns in the trio of the Scherzando of Beethoven's *Eroica* Symphony; in the aria of Fiordiligi in E from *Così fan tutti*; in the aria of Leonore in Beethoven's *Fidelio*; etc.⁴⁷

Two works written for the valved horn are known to have been performed in Berlin before 1820, and thus we can deduce that Staelzel must have influenced other horn players there to experiment with the valved horn. The first of these works, a Concertino for three natural horns and chromatic horn⁴⁸ by the hornist, composer, and conductor Georg Abraham Schneider (1770–1839), was premiered on 14 December 1818; Pfaffe performed on the valved horn.⁴⁹ The second of these works, a Concerto for three horns by a hornist named Lenss, was premiered on November 26, 1819; Andreas Schunke performed the chromatic horn part.⁵⁰ Both of these important early works were unfortunately unavailable to the present author for study, and are very likely not extant today.⁵¹

In spite of Bierey's and Schneider's favorable reviews and these early compositions, the valved horn was accepted very slowly. Staelzel made this point convincingly in the application for reinstatement of his patent in August, 1827.

Most brass players were used to playing on the old instruments and did not want to submit themselves to the drill necessary to learn to handle the new device that makes the instruments chromatic. Also it must be remembered that the pieces of music were not written for the perfected instruments and that first the composers had to get acquainted with the great advantages and possibilities of them, so as to be able to use them adequately.

Consequently many years went by until the benefit and the effect of my invention for music in general was being recognized. During these years the patent was of little use to me, so that now I find myself in needy circumstances, in spite of the greatest austerity exercised by me.

...The valves have only now met with general approval and are being used more here and there.⁵²

Count von Brühl, intendant of the Royal Opera in Berlin, noted Staelzel's "notorious poverty" in a supporting letter to this application.⁵³ Staelzel was never to find wealth from his invention. The patent he held expired in 1827, his request for an extension was refused, and other makers had already copied his ideas in other regions even before its expiration.⁵⁴ According to the Berlin band leader and instrument designer Wilhelm Wieprecht (1802–1872), Staelzel left behind "nothing but an indigent widow and poor orphans" at his death in 1844.⁵⁵

Staelzel clearly was not the only valved hornist active in Berlin in the 1820s. Schunke and Pfaffe have already been noted. Another name that has come down from a listing of hornists in Berlin in 1824 is a valved hornist named Grasemann. This may be the same hornist as the Glazermann who performed upon the chromatic horn at a concert in January of 1823.⁵⁶

The technical ideas of Heinrich Staelzel would certainly have influenced the earliest performances on the new instrument, and thus must have also influenced to some degree valved horn technique as it was later taught in Berlin. Perhaps the clearest information on slightly later valved horn technique in Berlin was recorded in a letter dated 3 June 1840, from French composer Adolphe Adam (1803–1856) to Joseph Meifred, reproduced in the preface to Meifred's *Méthode pour le Cor Chromatique ou à Pistons* (1840), the first important method for the valved horn. Adam, who had recently returned from a trip to Russia, Prussia, and Germany, wrote,



My dear Meifred,

I believe it useful to give to you some information on what I observed in Berlin, related to wind instruments and particularly to the chromatic horn which owes to you its improvements and its introduction in France, and the use of which will be, as I hope, quite widespread, thanks to students who have left and who will leave the class that you direct at the Conservatory. The Germans generally occupy themselves much more than us with the building and use of wind instruments; also their military music is of a superiority we would have difficulty imagining.⁵⁷

After a brief discussion of the cornet, trumpet, ophicleide, and tuba, Adam continued,

The Institute, before reporting on your method for the chromatic horn, must ask Mr. Spontini,⁵⁸ one of its members *in partibus*, for some details of the state of these instruments in Germany. Spontini, who [apparently] knows only the name of the instrument that you teach, asked me on my tour to explain this instrument to him; and all that I could tell him, ignoring entirely the nature of the mechanism of your horn, is that, as a result, there is no difference in timbre or in the quality of sound from the natural horn and there exists the advantage of playing all the chromatic pitches, from the low C in the bass to the highest notes. It makes sense to me that all the horns used in German orchestras offer the same resources; and I was

convinced of that when I placed in the introduction of the overture of my opera *Hamadriades*⁵⁹ a quartet of horns for the daughter of the Danube,⁶⁰ that I composed for you in Paris, and that you have performed many times in the opera orchestra. But from the first report, the Berlin hornists told me that this piece was impossible, because it necessitated the use of low notes impossible on their instrument, which can

render half-steps from C  to G  but do not possess the

notes in the middle of the lower octave.

I went to see Spontini who told me that these notes are found only on the three-valved horn which is not used in the orchestra; and I believe that they are not found in the wind band any more, where these notes are played only on the *corno basso*, an instrument that is completely unknown to us, and which has a powerful effect. In spite of my conviction of Spontini's error and that of the Berlin hornists, I was obliged to have the part of the fourth horn performed on the tuba....

I believe it to be necessary, my dear friend, for you to expedite the publication of your method, in order to popularize the chromatic horn, which has become indispensable to us. The frequent use of this instrument in the grand operas of Auber, Mayerbeer [*sic*], and Halevy, renders the execution of these works imperfect in the provinces and abroad, where all appear to ignore the way of using it. Even if the Germans invented it, it is necessary that you teach them the art of using it, because it has been proven to me that they misunderstand the most important resources; I [especially] want to speak to the preservation of the character and the countenance of the horn, especially on low notes, which are excellent on your instrument, whereas they sound pock-marked [hollow, uneven] on the bassoon and too hard on the trombone.⁶¹

Adam makes a number of interesting points. Most significantly, he reports that in Berlin horns with three valves were not used in the orchestra and that the two-valved horn was not considered to be chromatic to the bottom of its range.

The first report by Bierey of Staelzel's invention, cited above, states that his horn had a chromatic range of "almost three octaves." Yet Adam's letter, cited above, indicates that a generation later Berlin hornists claimed there were notes they could not produce on a two-valved horn—notes that must have fallen within the range of "almost three octaves" noted by Bierey. Meifred and his colleagues in Paris treated the two-valved horn as chromatic to the lowest tones through the use of right-hand technique.⁶² But the Berlin hornists used two-valved horns with no extra right-hand technique. Without the use of the right hand the following pitches (in horn notation—new notation, bass clef) could not be produced:



Figure 4

“Missing” notes on the two-valved horn
 (ab' can be fingered with the first valve on this instrument).

Thus in Paris it was more or less understood that the performer would find a way to bridge these gaps in the low range of the two-valved horn, while in Berlin the pitches located in the gaps were treated as simply unavailable.⁶³

Returning to Heinrich Staelzel, we might ask, “Why did he invent the valve?” We know clearly from his own writings that he wanted to make the horn into a fully chromatic instrument, one that did not need crooks, and one that had an even tonal color. He did not simply wish to make the instrument more portable by eliminating the crooks—this was basically a French concept, influenced by natural horn aesthetics, that reached its ultimate form in the omnitonic horn. Staelzel was also not alone in trying to make the horn completely chromatic, as others were also attempting to do so through the use of slides and keys. With respect to the technique of Heinrich Staelzel on the valved horn, we can say that, at least in the early stages, he almost certainly did not place the right hand in the bell; it was instead used to manipulate the valves. The resulting tonal color of the valved horn must have been strikingly different from that of the natural horn. Finally, we know that he performed on the two-valved horn, as did performers in Berlin at a slightly later date. The use of the two-valved horn must have resulted in gaps in the lower range of the horn, as German players, unlike their French counterparts, did not use the right hand to fill this gap.

How Staelzel himself fingered, constructed, and performed on his valved horn must unfortunately remain a matter of speculation in many respects. But, as he predicted in 1814, the music which was created through his invention would indeed “astound the world.”

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NOTES

¹This article is based on the author's D.M. dissertation, *The Development of Valved Horn Technique in Early Nineteenth-Century Germany: A Survey of Performers and Works Before 1850 With Respect to*

the Use of Crooks, Right-Hand Technique, Transposition, and Valves (Indiana University, 1995). An even more direct discussion by the author of why Stölzel invented the valve may be found in “Why Was the Valve Invented?,” *The Horn Call* 28, no. 3 (May, 1998), pp. 35-40.

² *The New Grove Dictionary of Musical Instruments*, s.v. “Stölzel [Stoelzel], Heinrich,” by Philip Bate. The inventor’s name is also seen given as Stölzel.

³ Trans. in Herbert Heyde, “Zur Frühgeschichte der Ventile und Ventilinstrumente in Deutschland (1814–1833),” pt. 4, *Brass Bulletin* 27 (1979): 54–55.

⁴ Heyde, “Frühgeschichte,” pt. 1, *Brass Bulletin* 24 (1978): 11–12, quoting a letter from Heinrich Stoelzel to Friedrich Wilhelm III, King of Prussia (see below).

⁵ Louis-François Dauprat, *Method for Cor Alto and Cor Basse*, trans. and ed. by Viola Roth (Bloomington, 1994), pt. 1, p. 5 [13].

⁶ Gottfried Weber, “Wichtige Verbesserung des Horns,” *Allgemeine musikalische Zeitung* 14, no. 47 (18 November 1812), cols. 759-764. A partial translation of this article appears in Hans Pizka, *Hornisten Lexikon* (Kirchheim, 1986), pp. 97-99.

⁷ Pizka, *Hornisten Lexikon*, p. 97.

⁸ F.-J. Fétis, *Biographie universelle des musiciens*, 2nd ed. (Paris, 1874; reprint, Brussels, 1963), 3: 16, gives the date of 1811 for this invention and the inventor’s name as Chrétien Dickhut.

⁹ *New Grove Dictionary of Musical Instruments*, s.v. “Slide Trumpet,” by Edward Tarr.

¹⁰ Weber, “Verbesserung,” cols. 761–763.

¹¹ An illustration in Pizka, *Lexikon*, p. 97, interprets this description somewhat differently.

¹² A rough idea of how the mechanism would have been used can be obtained by using the second valve of a standard valved horn in conjunction with the right hand in the bell to imitate the slide/hand technique.

¹³ Weber, “Verbesserung,” col. 763, emphasis original. It should be noted, however, that even the use of valved horns did not solve the “problem” of projection in this passage, as conductors today often request this section to be performed by all three horns instead of only by the first horn.

¹⁴ *Ibid.*, cols. 763–64.

¹⁵ Reine Dahlqvist, *The Keyed Trumpet and its Greatest Virtuoso, Anton Weidinger* (Nashville, 1975), p. 17, citing *Allgemeine musikalische Zeitung* (1813), col. 844. Dahlqvist also notes performances by Joseph Weidinger on this instrument in 1817 and 1819.

¹⁶ E. [author identified by initial only], “Verbesserung des Waldhorns,” *Allgemeine musikalische Zeitung* 17, no. 38 (20 September 1815), col. 638–639. A partial translation of this article appears in Pizka, *Hornisten Lexikon*, pp. 99-100.

¹⁷ This instrument is pictured on p. 197 of Bernhard Brüchle and Kurt Janetzky, *Kulturgeschichte des Horns* (Tutzing, 1976). In a posting of 3 January 96 on the Internet horn discussion group (affiliated with the International Horn Society), Hans Pizka also reported two undated keyed horns formerly in the Bernoulli collection and now in Basel, Historisches Museum, Musical Instrument Collection.

¹⁸ Heyde, “Frühgeschichte,” pt. 1, p. 20. The older literature often erroneously describes Blümel as an oboe player.

¹⁹ *Ibid.*, pp. 22, 29.

²⁰ *Ibid.*, p. 22. Stölzel agreed to pay Blümel “a sum of 400 thalers in full settlement of all claims to Blümel for the sole use of the patent” (*ibid.*, p. 30).

²¹ Transl. in *ibid.*, pp. 21-22.

²² R. Morley-Pegge, *The French Horn*, 2nd ed. (London, 1973), p. 31, citing F.-J. Fétis, “Cors à pistons,” *Revue musicale* 2 (1828): 153-62.

²³ F.-J. Fétis, “Nouvelles de Paris. Concerts du Conservatoire. Sixième concert,” *Revue Musicale* (1833), p. 28; trans. in Birchard Coar, *A Critical Study of the Nineteenth Century Horn Virtuosi in*

France (Dekalb, IL, 1952), p. 110. This section of the 1833 article is a simple recasting of the material found on p. 156 of the 1828 article, as is confirmed in Jeffrey L. Snedeker's recently published article, "Fétis and the 'Meifred' Horn," *Journal of the American Musical Instrument Society* 23 (1997): 126-27. Snedeker provides a full translation of Fétis' article of 1828 (on pp. 124-131).

²⁴ Fétis' report has been repeated by many writers, becoming particularly well-known in the U.S. through the efforts of Louis Stout in his presentations and video on the history of the horn. Morley-Pegge is the primary modern source for this viewpoint, his writings very likely influenced by W.F.H. Blandford, to whose memory he dedicated his book *The French Horn*. Blandford wrote that "When Blühmel and Stölzel brought out their system of pistons in 1816 [sic], they had at first no idea of endowing instruments with the power of playing rapid diatonic and chromatic passages in any key. Their more modest aim was to provide a means of instantly altering the pitch, as a substitute for the system of detachable crooks; and only after the pistons had come into practical use were the increased possibilities which they opened up realised" (Blandford, "Studies on the Horn. II: Wagner and the Horn Parts of *Lohengrin*," pt. 1, *The Musical Times* 63 [1 September 1922]: 624).

²⁵ It is also questionable that anyone in France would be in a position to know exactly what had inspired Stölzel.

²⁶ Spontini sent a number of early valved brass instruments to Paris between the years 1823 and 1831 (Georges Kastner, *Manuel général de musique militaire* [Paris, 1848; reprint, Geneva, 1973], p. 192). See also Snedeker, "Fétis," pp. 121-22.

²⁷ Morley-Pegge, *French Horn*, 2nd ed., pp. 33-34. See Snedeker, "Fétis," pp. 128-132 for further details on the horns illustrated in Figure 2.

²⁸ Joseph Meifred, *Méthode pour le Cor Chromatique ou à Pistons* (Paris, 1840), preface, by Raoul Rochette.

²⁹ Joseph Meifred, *De l'Entendue de l'Emploi et des ressources du Cor en général et de ses Corps de rechange en Particulier* (Paris, n.d. [1829]), p. 30.

³⁰ Morley-Pegge, *French Horn*, 2nd ed., p. 55.

³¹ *Ibid.*, p. 57.

³² Perhaps further research will uncover early works requiring this technique, but the only such works known to the author appear to date from after 1840. These are Wagner's opera *Lohengrin* (1848) and two publications of J.R. Lewy—three of his *Douze Etudes Pour le Cor chromatique et le Cor simple* and the *Divertissement*, op. 13, on themes of Franz Schubert. These works by Lewy were listed in volume 4 of Adolph Hofmeister's *Handbuch der musikalischen Literatur* (Leipzig, 1852), p. 58, indicating a publication date between 1844 and 1851; they are usually dated to ca. 1850 (see Ericson, *Valved-Horn Technique*, pp. 165, 171).

³³ Trans. in Heyde, "Frühgeschichte," pt. 1, pp. 11-13. This letter is quoted in full in *idem*, *Das Ventilblasinstrument: Seine Entwicklung in deutschsprachigen Raum von den Anfängen bis zur Gegenwart* (Leipzig: VEB Deutscher Verlag für Musik, 1987), p. 14. I wish to thank Dr. Heyde for his generosity in allowing me to reproduce passages from documents cited in his article in *Brass Bulletin* and in *Das Ventilblasinstrument*. An English translation of Heyde's book is to be published soon as part of Bucina: The Historic Brass Society Series (Stuyvesant, NY: Pendragon Press).

³⁴ G. B. Bierey, "Notizen: Neue Erfindung," *Allgemeine musikalische Zeitung* 17 (3 May 1815), cols. 309-310; trans. in Kurt P. Janetzky and Bernhard Brüchle, *The Horn*, trans. James Chater (Portland, 1988), p. 73.

³⁵ Edward H. Tarr, "The Romantic Trumpet," pt. 1, *Historic Brass Society Journal* 5 (1993): 218.

³⁶ Friedrich Schneider, "Wichtige Verbesserung des Waldhorns," *Allgemeine musikalische Zeitung* 19 (26 November, 1817), col. 814-816; transl. in Janetzky and Brüchle, *Horn*, pp. 74-75.

³⁷ An early unmarked Berlin valve instrument with three pistons fingered with the right hand is

pictured on page 262 of Brüchle and Janetzky, *Kulturgeschichte*.

³⁸ Although Dauprat, in a footnote on p. 14 [22] of pt. I of his *Méthode*, noted that “most German virtuosi whom we have heard and seen in Paris” hold the horn with the right hand, placing the left hand in the bell (transl. ed. Roth, p. 22).

³⁹ This date of publication is given in [Gustav Saenger], “Death of Professor Henri Kling,” *The Metronome* 34, no. 7 (July, 1918): 41. This date is also given in Morley Pegge, *French Horn*, 2nd. ed., p. 112. The work was not, however, listed in Hofmeister’s *Handbuch* until the 1874–79 edition (vol. 8 [Leipzig, 1881]), indicating a possibly slightly later date of original publication.

⁴⁰ Henri Kling, *Horn-Schule*, 3rd revised and augmented ed. with German, English, and French texts (Leipzig, 1900; reprint, Rochester, 1973), p. 76. Kling goes on to state that “it may be asserted, with some confidence, that the author of this ‘Method’ [!] has in all probability never held a horn in his hand, or been within measurable distance of playing it,” but the already noted existence of a few right-handed horns in the period does point to the validity of this method of performance for at least a few performers.

⁴¹ C. Rdt, “Ueber die Verbreitung des chromatischen oder Ventilhorns,” *Neue Zeitschrift für Musik* 44 (2 June 1835): 177.

⁴² Heinrich Gugel (1780–after 1837), German hornist, well known as a duettist with his brother Joseph Gugel (1770–?) and as a soloist. Heinrich Gugel was noted for performing works in every key on the natural horn crooked in F (see Kristen Thelander, “The Gugel Family of Hornists,” *The Horn Call* 25, no. 3 [May 1995], p. 32).

⁴³ Rdt, p. 178. [“Alle berühmten Waldhornisten”].

⁴⁴ *Ibid.*, p. 178; trans., in William Rogan, “Stopped Notes on the Horn: Some Aesthetic Considerations,” *Historic Brass Society Journal* 8 (1996): 57.

⁴⁵ Friedrich Schneider, *Elementarbuch der Harmonie und Tonsetzkunst* (Leipzig, 1820), reproduced and partially translated in Brüchle and Janetzky, *Kulturgeschichte*, pp. 194–95.

⁴⁶ *Ibid.*, p. 195.

⁴⁷ *Ibid.*, p. 194.

⁴⁸ The original text of the 1819 notice about this work, cited below, states that this Concertino is for “drey gewöhnliche und ein vom Kammermusicus Stölzel erfundenes chromatisches.”

⁴⁹ John Dressler, *The Orchestral Horn Quartet in German Romantic Opera* (D.M. diss., Indiana University, 1987), p. 66, citing *Allgemeine musikalische Zeitung* 22 (19 April 1820), col. 261. Dressler’s source, however, instead points to a performance of the Lenss Concerto for two horns which occurred on 22 March 1820; the correct citation for the premiere of the Schneider Concertino is to be found in *Allgemeine musikalische Zeitung* 21 (27 January 1819), col. 63. This Concertino was performed again in March of 1819, as noted in Tarr, “Romantic,” pt. 2, *Historic Brass Society Journal* 6 (1994), p. 200, citing Christian Ahrens, *Eine Erfindung und ihre Folgen: Blechblasinstrumente mit Ventilen* (Kassel et al., 1986), p. 26, who in turn cites *Allgemeine musikalische Zeitung* 21 (18 April 1819). A third performance, which occurred on 15 December 1819, was recorded in *Allgemeine musikalische Zeitung* 22 (19 January 1820), col. 51.

⁵⁰ Dressler, *Horn Quartet*, citing *Allgemeine musikalische Zeitung* 21 (22 December 1819), col. 874. Dressler comments that the text of this notice is unclear as to whether Schunke performed the part on the chromatic horn or the natural horn. Dressler also notes that all of the hornists mentioned in this paragraph were members of the orchestra of the theater in Berlin in 1821, citing information supplied by the Staatsarchiv, Potsdam. Interestingly, Pfaffe is also listed in the *Adress-Kalender für die Königliche Haupt- und Residenzstadt Berlin und Potsdam* of 1818 and 1819 as a keyed bugle player (cited in Ralph T. Dudgeon, *The Keyed Bugle* [Metuchen, N.J., 1993], p. 34).

⁵¹ Two solo works by composers associated with Stölzel were available to the author for study. The

first of these works is the *Variations sur la Polonaise d'Oginsky* for piano (or harp) with horn (or violin) obbligato by J.G. Bierey. Although the listing of the work in C. F. Whistling, *Handbuch der musikalischen Literatur* (vols. 1–3 combined, Adolph Hofmeister, ed. [Leipzig, 1844], p. 66), would indicate a date of publication after 1817, the listing of Bierey's works in Fétis' *Biographie universelle* 1: 411, would tend to indicate an earlier date of composition (to the author's knowledge, no catalogue of Bierey's works is available). In any event, other than a single measure marked "echo" there is nothing to suggest that this work might be intended for performance on the valved horn, as every pitch is easily playable on the natural horn.

The second work is a Concerto for four horns and orchestra by Georg Abraham Schneider. While this work dates from 1817, it is clearly intended for performance by four natural horns (special thanks to Louise Schepel for pointing out the existence of this work, and to Daniel Lienhard for sharing a portion of the score).

⁵² Transl. in Heyde, "Frühgeschichte," pt. 3, *Brass Bulletin* 26 (1979): 82.

⁵³ Heyde, "Frühgeschichte," pt. 4, p. 54.

⁵⁴ Tarr, in "The Romantic Trumpet," pt. 1, p. 230, points to a note in Philip Bate, *The Trumpet and Trombone*, 2nd ed. (London, 1978), p. 194, which is significant with regards to early patents and valves: "The International Patents Convention, by which a number of nations agreed to respect each other's patents, was not signed until 1883. Prior to that date there was nothing to prevent an invention, fully protected in the country of its origin, being freely copied once it had crossed the frontier. Before 1870 also, the various independent German-speaking states granted their own patents or privileges, but would not necessarily recognize one another's unless specific trade agreements were in force."

⁵⁵ Heyde, "Frühgeschichte," pt. 4, p. 54, citing A. Kalkbrenner, *Wilhelm Wieprecht, sein Leben und Wirken* (Berlin, 1882), p. 89.

⁵⁶ Morley-Pegge, *French Horn*, 2nd ed., p. 105, citing *Quarterly Musical Magazine & Review* 5: 408. It is to be hoped that the literature that these and other pioneer valved hornists featured in their performances in Berlin may be located to gain further knowledge of the early technique of the valved horn.

⁵⁷ Meifred, *Méthode*, p. ii, transl. in Jeffrey L. Snedeker, *Joseph Meifred's Méthode pour le cor chromatique ou à pistons and Early Valved Horn Performance in Nineteenth-Century France* (D.M.A. diss, University of Wisconsin-Madison, 1991), p. 145. Meifred was also very much interested in the improvement of military music and served the third legion of the Paris National Guard as director of the band for nearly thirty years (*ibid.*, p. 38).

⁵⁸ Gaspare Spontini was Generalmusikdirektor of the Berlin Opera from 1820–1842, and in the years before 1820 was a major figure in French serious opera.

⁵⁹ Adam's opera-ballet *Die Hamadryaden* was first performed by the Berlin Court Opera on 28 April 1840 (*New Grove*, s.v. "Adam, Adolphe," by Elizabeth Forbes).

⁶⁰ Adam's ballet *La fille du Danube* was first performed at the Paris Opera on September 21, 1836 (*ibid.*). The original passage is somewhat obscure; in a telephone conversation of 28 February 1994 with translator Snedeker, it was suggested that another possible interpretation of this sentence could be "a quartet of horns from *The Daughter of the Danube*." An examination of the scores of both works would likely clear up the question of possible musical borrowings between the two.

⁶¹ Meifred, *Méthode*, p. iii, transl. in Snedeker, *Meifred*, pp. 146–47.

⁶² See, for example, Meifred, *Méthode*, pp. 11–14.

⁶³ An article by composer and theorist Gottfried Weber (1770–1839) sheds a bit more light on the use of the two-valved horn in Germany in this period. Entitled "Ueber Ventilhorn und Ventiltrompete mit drei Ventilen" ["Valved Horn and Valved Trumpet with Three Valves"], the article, which appeared in *Caecilia* 17 (1835) 73–105, offers a very complete and technical study of the valved horn.

It contains twenty-three sections (divided into seven chapters) and includes fingering charts for both two- and three-valved instruments. These charts present every fingering that is theoretically possible, covering a range of more than four octaves. The fingering chart for the two-valved horn covers pitches from written *A* (new notation) to *c*^{'''} (with three gaps in the low range—the lowest pitches given are only theoretically possible on the horn). It is significant that he does not refer to the use of the hand in the bell to fill in the missing low-range notes on the two-valved horn, thereby indicating that he did not see this as a desirable practice; the notes are simply treated as missing on this instrument and available on the three-valved horn. (For more on this subject see Ericson, *Valved-Horn Technique*, pp. 53–58; special thanks to Jeffrey Snedeker for sharing a copy of the article).