

Bass Horn and Upright Serpent in Germany

Part 2: Bass horn (continued), English Bass horn, and Fagott-Serpent¹

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The proliferation of the continental bass horn

The years after December 1805, when the Berlin Conservatorium der Blasinstrumente (Conservatory of Wind Instruments) decided to include the bass horn in its teaching program, lie pretty much in the dark. Nothing is known about the disposition of the four bass horns that Prince Günther Friedrich Carl I delivered to the conservatory and the Prussian royal family of Friedrich Wilhelm III of Hohenzollern. The months after February 1806, when the correspondence of the prince with Count Maltzan and Franz Tausch stopped, were replete with turmoil relating to the preparations for war with France. Virtually in a single blow, Napoleon defeated Austria at the Battle of Austerlitz in December 1805. French troops subsequently entered south German territories, and on 12 October 1806 Napoleon inflicted a crushing defeat on Prussia in the Battle of Jena and Auerstedt. Napoleon occupied Prussia, Tausch's Conservatorium der Blasinstrumente closed, as did the *Berlinische Musikalische Zeitung*. After the Battle at Jena, Prussian King Friedrich Wilhelm fled northwest from the battlefield and stopped at Sondershausen, where Prince Günther Friedrich Carl gave him his best horses to help him escape from the French pursuers, who soon afterwards entered the city. From that time "a relationship of true friendship took hold" between the two monarchs, as the local historian Friedrich Apfelstedt wrote.² From this desperate event on we can be sure the king felt personally committed to the prince. This relationship undoubtedly helped to make the king more favorably inclined toward the prince's bass horn.

We know little about the proliferation of the bass horn in the first few years after 1806, but there is evidence from 1814–16 that it was already being used in military music in Prussia, Austria, Lombardy, and Russia. Though no hard evidence can be cited, it is likely that Friedrich Wilhelm III used diplomatic channels to introduce the bass horn into those countries. The summary below indicates the areas to which the bass horn spread shortly after its invention:

- *Central Germany.* The first bass horn was played in the *Harmoniemusikcorps* at Sondershausen from 1805 until its dissolution in 1835. The corps played at the music festivals in the neighboring cities of Frankenhausen (1810, 1815) and Erfurt (1811, 1812), and thus made the bass horn known there. After Louis Spohr visited Sondershausen in 1809 to hear the *Harmoniemusikcorps*, he included the bass horn in his *Notturmo*, op. 34, dedicating the piece to Prince Günther Friedrich Carl I in 1815.³



Figure 8: Bass horn players from a poster, *Königlich Preussische Militair Musik*, marked “Augsburg bei J. Ringler Nr. 42,” reprint shortly after 1851 of a lithography of 1815–18. Photos courtesy of Musikinstrumenten Museum der Universität Leipzig. Image © Wieland Hecht. Reprinted by permission.

- Prussia.* Bandmaster Theodor Rode wrote in 1858 that the Prussian infantry music adopted the bass horn in 1815 (Figure 8). He erroneously called it *Englisches Basshorn*, but described it correctly: “the body of the instrument is of wood and the bell of copper or brass is pointed upward.”⁴ It was introduced at the same time as the angular basset horn, and Rode wrote that both instruments proved to be very weak in sound and therefore not practical for infantry music.⁵ After researching the *Königlich-Preussische Armeemarsch-Sammlung* (Royal Prussian Collection of Army Marches), which was initiated in 1817, Bernhard Habla concluded that the bass horn was used from 1817 “almost always, [but] from 1828 ... only rarely.”⁶ This decline was accelerated by the unveiling in 1828 of two new instruments by Griesling & Schlott: the valve bass horn for the cavalry (more about this instrument below) and the so-called *Ophicleide ou basse d’harmonie*, which was in reality an English bass horn with a wide bore rather than an ophicleide.⁷ The appearance of the four-valve bombardon in Prussia in 1832 further expedited the decline of the bass horn.⁸



Figure 9: Austrian military musician with bass horn. Watercolor, artist unknown, ca. 1815.

Photo courtesy of Staatliches Institut für Musikforschung Preußischer Kulturbesitz, Musikinstrumenten Museum.

Image © Bildarchiv Preußischer Kulturbesitz. Reprinted by permission.

- Austria.* In 1813 an article in the *Wiener Allgemeine Musikalische Zeitung* described the bass horn as “an instrument combining the serpent and bassoon,” which “His Serene Highness the Prince of Sondershausen regarded as worthy of notice and improved it with diligence and good luck.”⁹ The image in Figure 9 dates from only slightly later. An imperial decree of 1822 recommended two bassoons, one contrabassoon, and one bass horn for the foundation of a military band of twenty-six to twenty-seven pieces.¹⁰ When in 1823 the regimental bands were expanded to thirty-four musicians, the bass section was formed by *Basshorn, Serpentin und Contrafagott*.¹¹ According to a regulation of 1828, the *bandas* of the Austrian hunter battalions carried twenty-five to thirty musicians, the bass parts taken by a euphonium and two or three bass horns.¹² Though the bass horn with keys gradually fell out of use in the 1830s, Leopold Uhlmann still offered in his pricelist of ca. 1845–48¹³ an eight-key *Basshorn in C / Corno basso in Do*. The Kunsthistorische Museum in Vienna owns a very similar instrument from around 1845, signed “I: Ziegler/ Wien” (no. 353).

- Lombardy and the Veneto.* The Vienna Treaty of 1815 ended Napoleon's occupation of Lombardy and recognized Austrian claims on the Lombard Duchy of Milan and the Duchy of Mantua, which it had ruled since 1718. The two duchies were part of a constituent state of the Austrian Empire as the Kingdom of Lombardy-Venetia as late as 1859, when they were annexed by the Kingdom of Italy. Shortly after 1815 the Austrian military and its military music returned to northern Italy,¹⁴ and with them the bassoon-shaped bass horn. The first evidence for this can be found in Louis Spohr's 1816 travel report from Milan. When he attended a performance of *La statua di bronzo* by Carlo Soliva at the Teatro alla Scala in Milan, he saw and heard a bass horn.¹⁵ In Lombardy the bass horn became known as *cimbasso* or *corno basso*. Renato Meucci has explained the name *cimbasso* as a contraction of *corno in basso* by abbreviating *corno* to *c* and binding this letter to *in basso*.¹⁶ He provides a considerable amount of evidence for the use of the *cimbasso* in northern Italy, starting around 1815. In 1825 the publisher Ricordi printed fingering charts for *cimbasso*, and in the same year Bonifazio Asioli included in his method book illustrated fingering charts for *cimbasso*, upright serpent (also called *cimbasso*), bombardon, and ophicleide.¹⁷ In Italy—and apparently almost nowhere else—the bass horn entered the opera orchestra, appearing in the scores of Rossini, Pacini, Mercadante, Paganini, and others.¹⁸ Also in Italy the term *cimbasso* or *corno basso* was erroneously applied to the upright serpent and the *corno inglese basso*, made of metal.¹⁹ Though often imported from Austria, the *corno basso* was also built in Milan (by P. Piana, U. Luvoni, and F. Gaviguanini), Cremona (by C. Ceruti), Chiaravalle (Papalini), and Bologna (by Magazzari), and surely in other Italian cities and by other makers as well.



Figure 10a: Horn and bass horn player of the Pavlovsky Regiment of the Imperial Life Guard, St. Petersburg. Watercolor by Alexander Ivanovich Sauerweid, St. Petersburg, shortly after 1814. The State Hermitage Museum, St. Petersburg, ERR 7631. Photo permission of and © The State Hermitage Museum, St. Petersburg.

In Italy as in countries north of the Alps, the bass horn began to fall out of fashion in the 1830s, replaced by the bombardon and ophicleide. Although Verdi called for the *cimbasso* in *Ernani* (1844) and *Rigoletto* (1851), the valve bombardon was used in early performances of these works.²⁰ This finding is consistent with a source that states that even as late as 1851 the *bombardone* and ophicleide with valves were still called *corno basso*.²¹ Meucci has made the convincing case that as early as 1839 the *cimbasso* in Verdi's *Oberto* was actually meant to be a valve bass.²²



Figure 10b: Detail of Figure 10a.

- *Bavaria.* When the Confederation of the Rhine collapsed in October 1813, Bavaria was the first German state to break away. Shortly thereafter the bass horn came into use alongside the fagott-serpent. A poster entitled *Musik der Bürger-Garde der Haupt- u. Residenz-Stadt München*, printed by J. C. Hochwind in Munich ca. 1815, shows a bassoon-shaped bass horn similar to that in Figure 8.²³
- *Russia.* The earliest evidence for the continental bass horn in Russia is a watercolor by Alexander Ivanonich Sauerweid, completed shortly after 1814 (Figure 10). In that year Czar Alexander I commissioned Sauerweid in St. Petersburg to paint Russian troops, including the Pavlovsky regiment, which was part of the Imperial Guard. There is another image that shows the bass horn player of the Pavlovsky regiment at a parade on the Field of Mars in St. Petersburg, painted by Adolf Ignatjewitsch Ladurner sometime in the 1830s. It survives today in two forms, as a painting on cardboard in the Hermitage in St. Petersburg (ERSCH 2580) and on a porcelain tablet dated 1841 in the Großherzoglich-Hessische Porzellansammlung in Darmstadt. Unfortunately, Ladurner offered only a partial view of the instrument.

The introduction of the bass horn into Russian military music may have occurred prior to the foundation of the Sixth Coalition (1812), which was a result of friendship and family ties between King Friedrich Wilhelm III of Prussia and Czar Alexander I.²⁴

- *Great Britain.* Although Britain was a member of the Fourth through Seventh Coalitions against Napoleon, the continental bass horn was obviously not introduced into British military music, because it had its own bass horn. The fagott-serpent, a variant of the continental bass horn, was also built in England, as a surviving instrument by F. Pretty demonstrates.²⁵
- *France, the Netherlands.* The bassoon-shaped bass horn apparently gained footing in France and the Netherlands only after the downfall of Napoleon (1815), and it was only between 1825 and 1840 that, according to Thierry Maniguet, the production of the bass horn and fagott-serpent (*serpent droit, basson russe*) was fully established in France.²⁶ The earliest known documentary evidence, pointing possibly to importation from Germany, is an advertisement for a *serpent-basson* by the dealer and maker Jeantet of Lyon, published in the *Journal de Paris* in 1816–17.²⁷ The *Méthode du serpent-basson dit serpent droit* by A. Héral (Lyon, 1820) portrays the serpent-basson as a bassoon-shaped bass horn with dragon bell, and in 1823 Forveille began production of the *ophybaryton*, a bass horn with dragon head.

The Netherlands began to break away from Napoleon in 1813. Sometime later bass horns began to be made in Ghent, Malines, and Brussels by Tuerlincks, Van Bolle, and C. J. Sax, respectively.

Mainz and the name “Russian bassoon”

In 1798 Napoleon conquered Mainz and incorporated it into France, but after his ouster in 1815 it was awarded to the Grand Duchy of Hesse. During its time under French control, Mainz, on the German border at the Rhine River, had become a fortress city with a garrison of 10,000 to 16,000 French soldiers. Moreover, Napoleon had built up the city as a “grand boulevard de la France.” After Mainz became German again, the local publisher B. Schott’s Söhne initiated an export trade in wind instruments to France, the Netherlands, and Alsace-Lorraine, which by this time had become French. Their sales apparently flourished for many years but came to an end around 1832.²⁸

The surviving fingering charts (Figures 11, 13, 17, 18)—printed in French or in French and German—and Schott’s ads in the advertising supplement (*Intelligenzblatt*) of *Caecilia* (1824–39) provide some information about Schott’s business practices. Among the advertisements are the earliest examples for the names *basson russe* and *cor basso russe*, suggesting that these names were coined in Mainz:

- “Metall-Serpent oder basson Russe, mit 3 Klappen,” *Caecilia*, vol. 1, 1824, *Intelligenzblatt* 3)
- “Drachen-Bass mit 6 Klappen” (dragon bass with 6 keys), *ibid.*
- “Serpents in Fagottform, von Holz, mit 6 Klappen, mit einem Schallstück aus Messing, oder mit einem Drachenkopf.” (serpent in bassoon-shape, of wood, 6 keys, bell of brass or with a dragon head), *Caecilia*, vol. 2 (1825), *Intelligenzblatt* 7²⁹
- “Cor basso russe à 3 clefs et tête de lion ou dragon” (Russian bass horn with 3 keys and lion or dragon head), and “Serpent en forme de basson avec tête de dragon.” (serpent in form of a bassoon with dragon head), *Caecilia*, vol. 6 (1827), *Intelligenzblatt* 22 and 24
- Fischer, [no first name], “Cavallerie-Marsch für 2 Klappenflügelhorn [*sic*] in C, 2 Tromp[eten] in F, Principal in C, 1 Tromp[ete] in hoch C [G], 1 Klappentrompete in C, 3 Posaunen, Serpent russe oder Basshorn und Pauken,” *Caecilia*, vol. 7 (1828), *Intelligenzblatt* 28
- Joseph Küffner, arrangements of the overtures to *Fra Diavolo* (Auber) and *Guillaume Tell* (Rossini) for military band; with bass line for “3 trombones, cor basso russe, serpent,” *Caecilia*, vol. 13 (1831), *Intelligenzblatt* 51
- Joseph Küffner, *Grande Walse*, for military band with bass part for “3 Trombones, Serpent, basson russe ou ophicléide,” *Caecilia*, vol. 14 (1832), *Intelligenzblatt* 56

The advertisement cited first in the list refers to the English bass horn with alternative dragon bell as displayed in the fingering chart Figure 11. The subsequent citations refer instead to the bassoon-shaped bass horn or upright serpent with alternative dragon bell like that shown in Figure 16. The dragon bell was not only a decorative crowning but also a symbol of power, authority, and ferocity. In connection with the

buccin trombones, it had a pro-Napoleonic connotation, but for the bass horns and upright serpents, an anti-Napoleonic meaning. Though no source directly describes this opposing symbolism, the contextual evidence speaks for it.

The dragon-head bell first came to be used in the *buccin* trombone around 1810–12, when the French army was dubbed *Grande Armée*. This name was inspired by a string of spectacular victories through which the army attained a reputation of invincibility and became the horror of those parts of Europe that Napoleon had not yet conquered. The dragon heads' dominant colors—red, gold and green—indicate that the buccins were first played in the dragoon regiments that wore uniforms with these colors. The crushing defeat of the *Grande Armée* in the Russian campaign of 1812 and the following Wars of Liberation, 1813 to 1815, invoked the contrary meaning of the dragon head: the power and threat of Napoleon's adversaries. This meaning was to be associated with bass horns and upright serpents on the side of the armies of the Fourth through Sixth Coalitions. When anti-Napoleonic sentiments became widespread also in France, B. Schott's Söhne took advantage of this situation and used the dragon head as an anti-Napoleonic symbol and as a symbol of liberation. Russia—in conjunction with Prussia, Austria, Britain, and a number of smaller nations—was the foremost power in the defeat and eventual exile of Napoleon. Little wonder that the dragon head also crowned English bass horns. The name *basson russe* stood for driving out Napoleon. In France this symbolism fell on fertile ground among all those who triumphed over the dictator. Also in Austria, where the outrage at the execution of Marie Antoinette (1793) caused long-lasting anti-Napoleonic sentiments, the bass horns with dragon bells came into occasional use.³⁰ Writing in 1894, John Kappey, the historian of military music, recalled from his childhood watching an "Austrian band...; it had about 5 or 6 brass serpents in the front rank, the bell of each being shaped like the open mouth of a huge serpent, painted blood-red inside, with huge white teeth, and wagging tongue which moved up and down at every step!"³¹

The restoration of the Bourbon monarchy in 1814–15 did not bring stability to France as promised and as wished by the people, but rather political strife. The officer corps and what remained of the army endeavored to restore the glory of the *Grande Armée* and paraded with bands sporting buccin-tombones with colorful dragon heads. This became a custom that continued as late as the foundation of the Second Republic (1848). Berlioz, though politically ambivalent, nevertheless sympathized with Napoleon and used the buccin-trombone in his *Messe Solennelle* (1825).³² When the French army helped Spain reestablish its monarchy in 1823, the buccin became popular also in Spain as a monarchist symbol and was built in Madrid as late as the 1840s by José Ramis. Considering all the evidence, one can conclude that the French buccins were ideologically on the side of the army and Napoleon, the upright serpents and bass horns with dragon heads on the anti-Napoleonic side. It seems that this symbolism began to die out around 1830, by which time the dragon heads were seen largely as decorative features; they were abandoned altogether sometime later.

That Schott had chosen the adjective *russe* was probably also incited by the tragic events in Mainz at the end of the Napoleonic period. In 1813 the retreating French army of some 27,000 soldiers encamped in Mainz. The efforts of the Sixth Coalition to expel the French led at the beginning of 1814 to the siege of the city by 30,000 Russian and 9,000 German troops, an event that was capped by a typhus epidemic that claimed 20,000 lives, including ten percent of the town's citizens. This catastrophe was not soon forgotten in Mainz. Another event that also may have sparked the idea of the term *basson russe* was the appearance of English and continental bass horns and fagott-serpents at the victory parade in Paris on 31 March 1814. On that day, 100,000 allied forces—among them, 63,000 Russians—entered Paris with a grand display of Russian, Prussian, British, and Austrian band music.³³ Now the Parisians could see and hear the various bass horns, previously unknown to them because of the continental trade embargo. Weary of the bloodshed since 1803, Parisians enthusiastically welcomed the Russians and their allies as liberators.³⁴

In France and Belgium, the name *basson russe* caught on to some extent, but only for the continental bass horn and upright serpent. Thierry Maniguet has traced the name *basson russe* in France and Belgium as early as 1834.³⁵ The main sources are F.-J. Fétis's *Biographie Universelle* (1833–44) and Berlioz's *Grand traité d'instrumentation* (1843). From there the name entered Mahillon's *Catalogue descriptif* (1893–1922) and finally the organological literature.³⁶

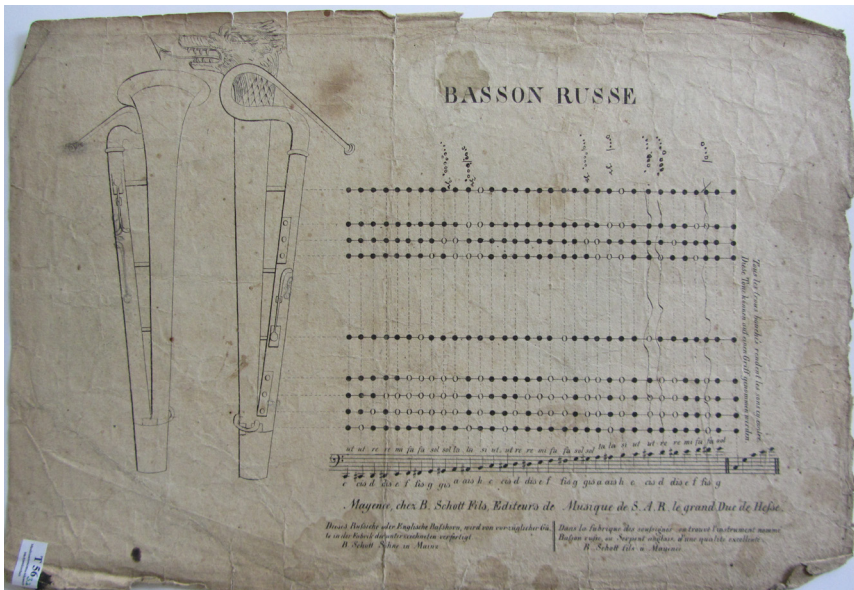


Figure 11: Fingering chart for *Basson russe*, B. Schott's Söhne, Mainz about 1820 (no print number). Musikinstrumenten Museum Markneukirchen, Nachlaß Wilhelm Petzold, 3.3. Photo courtesy of Musikinstrumenten Museum Markneukirchen. Image © Enrico Weller.

Chromatic bass horn and valve bass horn

The tonal weakness of the bass horn was recognized virtually from the instrument's inception; it was blamed on the small tone holes and their acoustically incorrect placement. As early as 1816 Gottfried Weber proposed therefore to equip the bass horn with larger tone holes and keys:

The instrument ought to have all eleven tone holes, which would need to be shifted closer to the places which are inherently appropriate for them; and those [tone holes] that the fingers of the player cannot comfortably reach and cover should be closed ... by keys.³⁷

Weber's idea had already been realized in the keyed bugle (1810) and was soon applied to the ophicleide (1817), chromatic bass horn (1820), and bombardon (1823). Though Gottfried Streitwolf in Göttingen did much to publicize his *Chromatische Basshorn*, its practical success was limited.³⁸ In terms of the bore, the U-bend chromatic bass horn followed the bassoon-shaped bass horn, having two finger holes and ten keys. Various alternative models were developed in the 1840s, including the *contrahorn* in F by J. and A. Lampferhof of Essen (1844).³⁹

Though rather infrequently employed, the chromatic bass horn had aficionados in a few places that helped to keep it alive for a long time. Perhaps the most tenacious holdout was an instrument that served in the 38th Prussian Infantry Regiment in Schweidnitz (Silesia), about which an account of 1887 reports: "This instrument is said to have a wonderful effect in the horn quartet (where it may also substitute for the fourth horn) and, in all, produces a beautiful sound."⁴⁰

1828–29 proved to be a watershed in the history of the bass horn, for this is when its long downward trend began. Its earliest significant rival was the valve bass horn by Griesling & Schlott, introduced in 1828 and called *Chromatisches Baßhorn oder Baßtrompete in F oder Es*. Its higher-pitched versions were known as *Tenorbaß*.⁴¹ August Sundelin preferred the term *corno basso chromatico*, applying it to an instrument in low F. Built as a bell-front model, the valve bass horn was somewhat heavy for playing on horseback. This fact seems to have pointed the way for Wenzl Riedl in Vienna to equip the keyed bombardon with valves, which he realized in 1829. The narrower variants were distributed under the name *Chromatisches Basshorn* or—as in Uhlmann's pricelist of 1845–48—*Basshorn mit Maschin in f, u, e, es, dann d Bögen*. In his catalog of 1898, V. F. Červený in Königgrätz still lists the valve bass horn, equipped with three or four valves and built in tuba, oval, or helicon form. He described it as *schwaches Baryton-Instrument*, that is, a narrow-bore baritone.

The English bass horn

The English bass horn, developed by Louis Alexandre Frichot in 1799, remained largely unknown in Germany until the end of the Napoleonic period because the Continental Blockade (1806–14) prohibited the import of British products to the continent. After the fall of Napoleon, curiosity arose among musicians, who wondered if the English bass horn might be better than the continental bass horn. And so a few makers started manufacturing it: Griesling & Schlott in Berlin, C. F. Sattler in Leipzig, and a few Markneukirchen makers. But the English newcomer turned out to be no better and was soon ignored. As was mentioned previously, the name “English bass horn” was repeatedly confused with that for the bassoon-shaped bass horn.

The *Harmoniemusikcorps* of the Grand Duke of Mecklenburg-Schwerin, among other ensembles, acquired an English bass horn, which the fifteen-year-old Felix Mendelssohn-Bartholdy heard in the spa town of Doberan in the summer of 1824. From his letter of 24 July, in which Felix included a tiny sketch of the instrument, we know that he really meant the English V-shaped bass horn of metal. It had a “beautiful, deep tone” (“einen schönen, tiefen Ton”), as he wrote a few days earlier to his sister Fanny, that inspired him to use it several times.⁴²

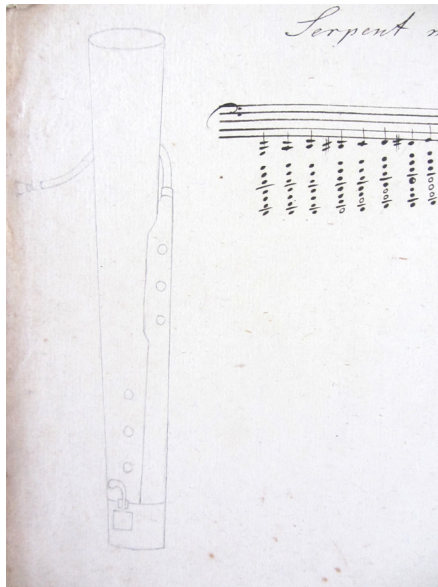


Figure 12: Fingering chart for an upright serpent in D, marked *Serpent mit 1 Klappe*.

Pencil and ink. Draft without gridlines, probably Markneukirchen, ca. 1805.

Range $B\sharp$, C, D, $D\sharp$ to g^1 . Musikinstrumenten Museum Markneukirchen, Nachlaß Wilhelm Petzold, 3.3. Photo courtesy of Musikinstrumenten Museum Markneukirchen.

Image © Enrico Weller. Reprinted by permission.

GAMME POUR LE SERPENT.

Bei dem Zeichen ϕ werden die L cher nur halloffen.
 Die tiefen 3 T ne werden mit dem Athem getrieben.
 Le Signe ϕ signifie que les trous ne sont bouch s.
 Les 3 Tons bas sont forc s par l'halcine.
 Die Klappe macht Dis.
 La Clef fait Re \sharp .

Figure 13: Fingering chart for an upright serpent in D, *Gamme pour le Serpent*, B. Schott's S hne, Mainz 1816 (print number 800). Brussels, Musical Instruments Museum. Photo courtesy of Brussels Musical Instruments Museum.   G ry Dumoulin.



Figure 14: Upright serpent, probably Markneukirchen, ca. 1810–15. Wood (two carved-out halves) with leather cover, brass. One key. Original inscription in bell: “No. 4 Bass Zink.” Bocal not original. The original bocal was probably wound as in Figure 1, no. 6 (Part 1, *HBSJ* 15 [2015], 22).

Germanisches Nationalmuseum N rnberg, MIR 49.

Photo courtesy of Germanisches Nationalmuseum N rnberg.  

Germanisches Nationalmuseum, Photo: G nther K hnel.

Reprinted by permission.

The upright serpent

The upright serpents, in both their German and French variants, feature a perpendicular shape and, compared to the serpentine original and the bass horns, some specific bore characteristics. Their common progenitor is the *serpent droit*, invented in 1789 by J. J. Regibo, a musician at the cathedral in Lille. In that year the *Calendrier musical universel* published the following notice, which is so far the only source of our knowledge about the instrument: “J. J. Regibo ... invented a new serpent that is made like a bassoon; it is composed of three parts, and is stronger [in sound] than the ordinary serpent; easier to play, it has the same mouthpiece [as the serpent], the same tonal range, and the same fingering.”⁴³ None of Regibo’s instruments have survived, and as early as 1803, when Gerber researched his article about the serpent, he was unable to find a specimen and thus concluded that Regibo’s invention existed only on paper.⁴⁴ However, I found in the Musikinstrumenten-Museum in Markneukirchen an illustrated fingering chart that shows an instrument that matches the description (Figure 12).⁴⁵ This chart suggests that Regibo’s upright serpent was built in the early nineteenth century in Saxony, apparently in Markneukirchen and/or Dresden.⁴⁶ Two improved versions were developed.

The first enhanced version, apparently developed in Markneukirchen, is shown in Figures 13 and 14. The instrument in Figure 14 was built using serpent technology—that is, it is made of two carved-out wooden halves and covered with leather. The new model received a small bell as the end piece. The model shown in Figure 13 was still being offered in 1830–33 in the trade catalog of the Markneukirchen dealer Kämpffens Söhne (see Part 1, Figure 1, no. 6). By 1810 Heinrich Greiser in Dresden developed a second improved version, which is even more similar to Regibo’s original than the first. In contrast to the original, it is built like a bass horn with drilled-out tubes (Figure 15 left). Drilling technology was more efficient and was to prevail in the future. Introduced into Saxon infantry music in 1810–11, Greiser’s model went by the name *Fagott-Serpent* and was also built elsewhere, as surviving instruments from Bavaria and the Netherlands show.⁴⁷

In addition to the upright serpent built with serpent technology and Greiser’s fagott-serpent, a third type with large brass bell came into use under the same name. It was probably invented by Johann Benjamin Eisenbrant in Göttingen (Westphalia). Chronologically, its source, an advertisement in the *Hamburgischer Correspondent* of 1809 in which Eisenbrant offered a “Serpent in Form der Fagotte” (“serpent in the shape of a bassoon”), alongside various other woodwind instruments,⁴⁸ is closest to Greiser’s innovation (Figures 15 right and 16).

The reasons for the development of the fagott-serpent were primarily political. When Prussia forged a military alliance with Austria and Russia in the aftermath of its defeat in 1806 and the bass horn was introduced into its allied states, Napoleon founded a counter-alliance in 1806–07, the Confederation of the Rhine. It comprised thirty-seven German states, including Westphalia, Bavaria, Saxony, and Hannover. The ensuing military reforms in these states included equipment, uniforms, music,

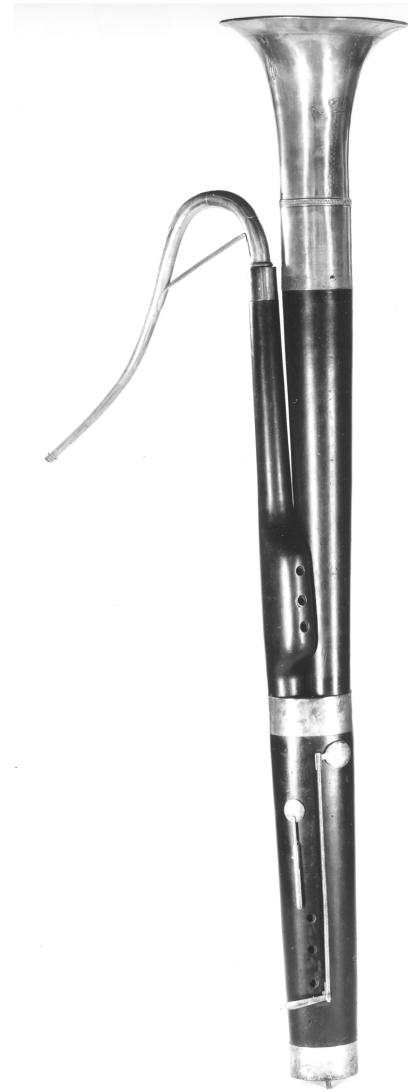


Figure 15: Left: Fagott-Serpent, signed “H. Grenser/ Dresden” (1810–13).

Maple, brass, three keys. Inner bell diameter at the end 102 mm.

Zürich, Museum für Gestaltung, no. 151.

Photo permission and © Zurich, Museum für Gestaltung:

Right: fagott-serpent, signed “Adler / Bamberg” (Karl Friedrich Adler, active 1820–72 in Bamberg), ca. 1825–30. Maple, brass, three keys. Musikinstrumenten Museum der Universität Leipzig, no. 1596. Photo courtesy of the Museum. Photo: Karin Kranich.



Figure 16: Fingering chart for an upright serpent with six keys, *Gamme pour le Serpent, a six clefs*. B. Schott's Söhne, Mainz, ca. 1821 (no print number). Brussels, Musical Instruments Museum. Photo courtesy of the Museum. © Géry Dumoulin.

and musical instruments. As the traditional S-shaped serpent was considered too impractical and the bass horn was used by the enemy, bandmasters envisaged a different but technologically similar model that would also have a stronger bass character than the bass horn. These endeavors finally resulted in the construction of the “Serpent in Fagottform” or “Fagott-Serpent” in Saxon and Westphalian cities that belonged to the Confederation of the Rhine. While the bass horn is really more of a baritone instrument, the sound of the fagott-serpent leans toward the bass side.

As for the fagott-serpent, there are additional sources relating to Grenser’s activities. The inventory of his estate, made upon his death in 1813, records thirty models of instruments made by this master, among them *1 Serpentmodell in Fagottform* (“one serpent model in the shape of a bassoon”).⁴⁹ The inventory does not list the models for the S-shaped serpent that Grenser had built earlier, but it does record “14 *Serpenträumer*” (“serpent reamers,” i.e., spoon bits). Grenser’s estate records also include invoices that show that he commissioned Friedrich Backhaus, an off-site carpenter, to prepare the wooden tube sections for the fagott-serpent, and the firm of Liebel’s Widow to sup-

ply serpent bells of brass.⁵⁰ Gotthelf Finke, a former assistant to Grenser who opened his own workshop in 1813 in Dresden, also built the version of this instrument with brass bell, which soon after 1813 came to be preferred to the model without a bell (see Leipzig, Musikinstrumenten Museum, no.1590).

In 1810 the Saxon military reform, carried out on Napoleon's command, decreed an enlargement of the kingdom's nine infantry bands to the size of twenty musicians. It specified that the bass section of each band was to consist of two bassoons, one serpent, one English bass horn, and one bass trombone.⁵¹ Given Grenser's estate inventory and the fact that he held the title of Royal Saxon Court Instrument Maker, he surely supplied at least some of the serpents, which were undoubtedly fagott-serpents. As for the English bass horn, it is another case of confusion with the bassoon-shaped bass horn. The Continental Blockade would not have permitted the import of English instruments to a state allied with Napoleon. As early as 1809 the Saxon hunter regiments were also equipped with new instruments, including two *waldhorns*, one serpent, and three *Halbmonde* (half-moon-shaped fluegelhorns) that soon were replaced by invention horns.⁵²

Musicians called the fagott-serpent by various names, including simply "serpent," like its progenitor, but also *Zinkenbass*, *Bass-Zink*, and *Stockserpent* ("cane serpent"). For example, in 1820 the Bavarian Third Jäger ("hunter") Battalion, stationed in Eichstätt, acquired an upright serpent, which was recorded in the inventory by its generic term, "Serpent."⁵³ Another example: The Stadtmusik in Lienz in Tyrol (Austria) bought two upright serpents shortly after 1824, which were sold after the dissolution of the band in 1835. The sales records cite them as "2 Serpent," one having a dragon bell, the other a regular bell.⁵⁴ Additionally, the Innsbruck dealer Paul Fatka included in his pricelist of about 1840 "1 Serpent mit messing Becher 22 [Florin]" ("one serpent with brass bell, 22 [Florin]")⁵⁵ Finally, in 1855 Heinrich Welcker von Gontershausen described the serpent as an instrument "the external appearance of which is, leaving the bell aside, similar to that of the bassoon."⁵⁶

As for the name *Zinkenbass* or *Bass Zink*, which Gerber also cited in 1803,⁵⁷ the upright serpent in Figure 14 still has the original inventory name inside the bell: *Nº 4. Baß Zinken*. An 1826 inventory of the Royal Bavarian First Jäger Battalion at Burghausen lists a *Zinkenbaß*, which was purchased in 1824 from Michael Sauerle in Munich.⁵⁸ A pricelist of 1828 by J. W. Weisse in Berlin mentions "Ein Zinkenbaß oder Serpent in Fagottgestalt, Beschläge, 2 Es, Mundstück und Klappen aus Messing—30 Rth." ("a bass cornetto or serpent in the shape of a bassoon, with mounts, 2 bocals, mouthpiece, and keys of brass—30 Reichsthaler").⁵⁹ Lastly, Joseph Felix Riedl in Vienna offered in a pricelist (early 1830s) a "Serpen [*sic*] in Fagott Form" and, for a slightly higher price, a *Zinkenbass*.⁶⁰ The name *Stockserpent* also had some currency in Hesse and Thuringia.⁶¹

In the 1830s, the use of the upright serpent began to taper off not much later than that of the bass horn. As late as 1843, Schlotthauer mentions the serpent as a contrabass instrument in the Bavarian military music.⁶² The following years saw the evolution of modified and improved versions, including the *Serpent Bombardon*

of 1842 by V. F. Červený in Königgrätz (further information in Part 3 in the next issue of this *Journal*) and the “Serpent” in the form of a figure-of-eight-shaped bass fluegelhorn (in A with crooks for G, F, and E) by J. F. Riedl in Vienna.⁶³ Finally, the large-bore bass euphonium, developed by H. J. Haseneier in Koblenz around 1850, should be mentioned. It featured a bore similar to that of the fagott-serpent without bell, and with a key mechanism similar to that of the chromatic bass horn (Leipzig, Musikinstrumenten Museum, no. 601). The upright serpent could still be found around 1850. As late as 1853 Wilhelm Wieprecht called for the serpent in an arrangement of Meyerbeer’s *Fackeltanz Nr. 3*,⁶⁴ and even in 1855 Heinrich Welcker reported that the upright serpent could be found in some areas in military music, but F. L. Schubert wrote in 1862 that the serpent seemed to have disappeared entirely.⁶⁵

The introduction of the bass horn and fagott-serpent into European military bands during the Napoleonic era led to a sudden abandonment of the S-shaped serpent soon after 1810. It seems to have disappeared by 1820–25, as no German S-shaped serpents made after 1820 are to be found.⁶⁶ Those made in Markneukirchen as late as in the 1830s were obviously built only for export.⁶⁷ Berlioz’s statement of having seen serpents in Dresden in 1843 (assuming that he meant the serpentine species) is apparently one of the errors in his *Memoirs*.⁶⁸

Though the fagott-serpent was considered a bass instrument, in structure and dimensions it is not very different from the bass horn, which is typically regarded as an instrument of baritone range. The fagott-serpent differs from the bass horn as follows: (1) its bocal is shorter and measures about twenty percent of the overall length, as compared to thirty-three percent in bass horns (Figure 17);⁶⁹ (2) its wooden joints are correspondingly longer; (3) its bore is the same up to the end of the butt joint—that is, to about seventy percent of the overall length—but in models without a separate bell the bass joint is wider and closer to that of the S-shaped serpent. Models with a widely flaring bell usually have a bore close to that of the bass horn. Fagott-serpents were frequently built in B-flat and C, exceptionally in F.

The history of the serpent evolved differently in France, where the instrument was much more deeply rooted in civil culture with its long-standing use in churches, its role in the *Garde nationale parisienne*,⁷⁰ and in the *fêtes nationales* from as early as 1791.⁷¹ Moreover, the method of constructing the instrument hardly changed there. Serpent technology continued to be employed in the novel models of the *serpent militaire* (Piffault, 1805–06), the *serpent Forveille* (1823), and the *ophimonocleide* (1828). Also in France, Regibo’s *serpent droit* was not entirely forgotten but metamorphosed into a couple of variant types, most notably the type shown in Part 1 of this article, Figure 1, no. 7. Manufactured with the same technology as the serpent, several specimens have survived, most of them built by Jean-Baptist Tabard in Lyon; the earliest dates from 1810. The prevalence of the serpent in France and its wide dissemination not only paved the way for the ophicleide but also influenced the French sound ideal and the tonal judgment of the musicians. This is manifested in

the embrace of a somewhat colorful sound, the long tradition of hand-stopping of the horn, and a long resistance to valve instruments.

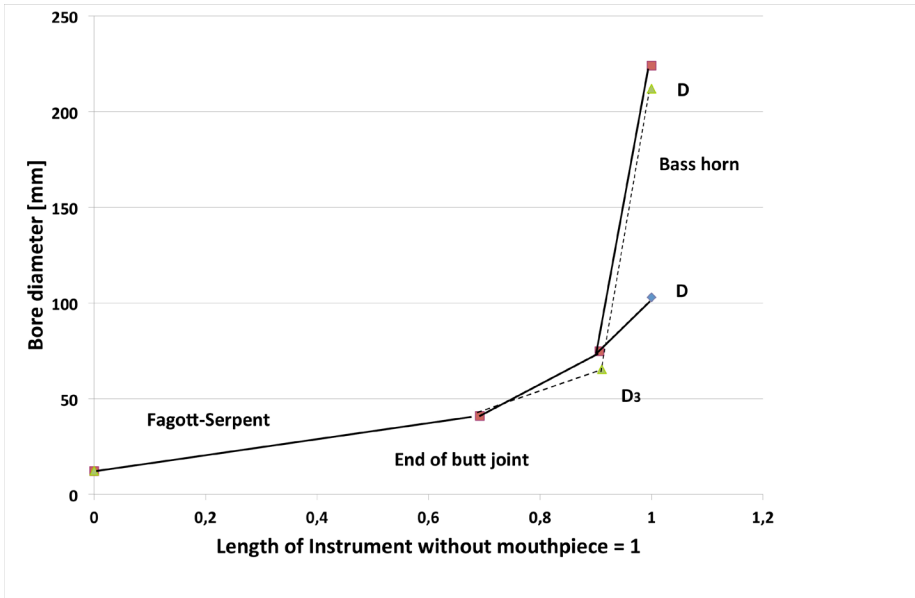


Figure 17: Bore diameters for the fagott-serpent (average of nine instruments) and continental bass horn (average of nine instruments).

The bore of both types coincides up to the end of the butt joint; the lengths of the joints differ.

The fagott-serpent version without brass bell equals instrument by Grenser (Figure 15, left), while the fagott-serpent with bell equals the instrument by Adler (Figure 15 right).

To be continued in the next volume of this journal.

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Notes

- ¹ Part 1 appeared in *HBSJ* 27 (2015): 21–39. Part 3, the final installment, which is scheduled to be published in *HBSJ* 29 (2017), deals with the German ophicleide and bombardon, and the musical use of the bass horn and serpent.
- ² Heinrich Friedrich Theodor Apfelstedt, *Heimathskunde für die Bewohner des Fürstenthums Schwarzburg-Sondershausen*, Heft 3 (Sondershausen: F. A. Eupel, 1856), 106.
- ³ Ernst Ludwig Gerber, “Sondershausen,” *Allgemeine Musikalische Zeitung* 11, no. 26 (29 March, 1809): 413–14.
- ⁴ Theodor Rode, *Zur Geschichte der Preussischen Infanterie und Jägermusik* (Leipzig: C. F. Kahnt, 1858), 11–12: “Nach Abschluß des Friedens hatte man die Bassets ... und ... die englischen Baßhörner (der Instrumentenkörper von Holz und die nach oben gerichtete Stürze von Kupfer und Messing).”
- ⁵ *Ibid.*, 12.
- ⁶ Bernhard Habla, *Besetzung und Instrumentation des Bläsorchesters seit der Erfindung der Ventile für Blechblasinstrumente bis zum Zweiten Weltkrieg in Deutschland* (Tutzing: Schneider, 1990), 1: 280: “das Baßhorn [ist] ab 1817 fast immer, ab 1828 nur noch selten ... besetzt.”
- ⁷ Article with illustration: C. F. J. Girschner, “Über die auf der diesjährigen Berliner Gewerbeausstellung dargestellten Instrumente,” *Berliner Allgemeine Musikalische Zeitung* 4 (1827), 404–07; vol. 5 (1828), 432–35. Description by Ernst Ludwig Schubarth, ed.: *Verhandlungen des Vereins zur Förderung des Gewerbestreißes in Preußen* (Berlin: Duncker, 1822–30), vol. 7 (1828), 71: “aus Kupfer gefertigtes Baßhorn, welches von den, in der großen Militair-Harmoniemusik gebräuchlichen, von Holz mit messingenen Schallstücke darin Vorzüge hat, daß es einen vollern, stärkern und durchdringenderen Ton angiebt, ohne schmetternd zu sein.”
- ⁸ The year 1832 for the introduction of the valve bombardon in the Prussian Garde-Jäger-Bataillon in Potsdam is mentioned by Theodor Rode, *Zur Geschichte*, 13. Habla (*Besetzung*, 1:105, and 2:471, 480) lists a few more early examples for the use of the valve bombardon in the Prussian military music.
- ⁹ “Versuch einer Beantwortung der Frage: Was hat das Orchester seit 1712 bis 1812 gewonnen?,” unsigned article in *Wiener Allgemeine Musikalische Zeitung* 3 (16 January 1813): 33–43 and 4 (23 January 1813): 63–64. Quotation, from no. 3, pp. 35–36: “Das Baßhorn, ein aus dem Serpent und Fagott zusammengesetztes Instrument ... Sr. Durchlaucht der Fürst von Sondershausen hat es der Aufmerksamkeit werth befunden, und es mit so viel Fleiß als Glück verbessert.”
- ¹⁰ Emil Rameis, *Die österreichische Militärmusik von ihren Anfängen bis zum Jahre 1918* (Tutzing: Schneider, 1976), 36–37.
- ¹¹ Eugen Brixel, Gunther Martin and Gottfried Pils, *Das ist Österreichs Militärmusik. Von der “Türkischen Musik” zu den Philharmonikern in Uniform* (Graz / Wien: Styria, 1982), 88–89.
- ¹² *Ibid.*, 130.
- ¹³ Salzburg, Salzburg Museum.
- ¹⁴ Renato Meucci, “Brass Bands and Brass Instrument Industry in 19th Century Milan,” *Wissenschaftliches Jahrbuch der Tiroler Landesmuseen 2010* (Innsbruck: Studien-Verlag, 2010), 101–13, esp. 103.
- ¹⁵ Louis Spohr, *Lebenserinnerungen: Erstmals ungekürzt nach den autographen Aufzeichnungen herausgegeben von Folker Göthel* (Tutzing: Schneider, 1968), 1:245.
- ¹⁶ Renato Meucci, “The Cimbasso and Related Instruments in 19th Century Italy,” *Galpin Society Journal* 49 (1996): 143–79, here 145. *Idem*, “Der Cimbasso: Nicht länger ein Rätsel der

Besetzung im italienischen Orchester,” in *Romantic Brass: Ein Blick zurück ins 19. Jahrhundert*, Kongreßbericht, ed. Claudio Bacciagaluppi und Martin Skamletz (Schliengen: Argus, 2015), 188–98.

¹⁷ Bonifazio Asioli, *Trasunto dei principj elementari di musica... metodo per ophicleide e cimbasso* (Milan: Bertuzzi, 1825); fingering charts reprinted in Meucci, “The Cimbasso,” 167, 168, 172.

¹⁸ Renato Meucci, “Le serpent en Italie à l’époque de Rossini,” *Musique-Images-Instruments* 14 (2013): 285–95; fingering chart, 291.

¹⁹ For example, Asioli (*Trasunto*) published a “Scala cromatica del cimbasso,” but the engraving shows an upright serpent. Fingering chart reproduced in Meucci, “The Cimbasso,” 168.

²⁰ Meucci, “The Cimbasso,” 153–54.

²¹ *Ibid.*

²² *Ibid.*, 150.

²³ Edward Ryan, *Paper Soldiers: The Illustrated History of Printed Paper Armies of the 18th, 19th & 20th Centuries* (London: Golden Age Editions, 1995), 202.

²⁴ Alexander and his father, Czar Paul I, had German wives, and in 1817 his brother and successor Nicholas I married Charlotte, a daughter of the Prussian king. The king and the czar established a warm friendship at a meeting in June 1802 in Memel in East Prussia. Alexander ordered the collection of 140 military marches and in 1815 gave a copy to Friedrich Wilhelm III, who in 1817 decreed its introduction in Prussia under the name Königlich Preußische Armeemarsch-Sammlung.

²⁵ Edinburgh, Musical Instrument Museum, EUCHMI 3307.

²⁶ Thierry Maniguet, “Les forms dérivées du serpent dans la première moitié du XIX^e siècle,” *Musique-Images-Instruments* 14 (2012): 93–112, here 93.

²⁷ *Ibid.*, 102–03.

²⁸ In an email of 21 July 2015, Susanne Gilles kindly informed me that no records regarding trade and production of musical instruments have survived in the archive of the publishing house B. Schott’s Söhne. Gottfried Weber provides some sketchy information about the business from 1824 in his article “Ehren-Auszeichnungen. Die Instrumentenmanufaktur der Herren B. Schott’s Söhne,” *Caecilia* 20 (1839): 262–63. According to other evidence, exports to France and the Netherlands began about 1815. According to Weber, Schott added in 1824 a pianoforte factory and a factory for wind instruments, the latter of which was probably run as a kind of cottage industry. The instruments were probably manufactured in workshops in Mainz, Markneukirchen, and Adorf. A few makers left Adorf (near Markneukirchen) and opened shop in Mainz: C. A. Müller in 1824, J. Jehring shortly thereafter, and J. A. Heckel in 1829. Initially they worked for Schott, later on their own.

²⁹ For an image of this type, see Georges Kastner, *Manuel général de musique militaire à l’usage des armées françaises* (Paris: Didot 1848), plate XIII, no. 7. The undated original fingering chart by B. Schott’s Söhne is in the collection of the Music Instruments Museum in Brussels.

³⁰ See the section “The upright serpent” in this article.

³¹ John Adam Kappey, *Military Music: A History of Wind-Instrumental Bands* (London / New York: Boosey & Co., 1894), 45.

³² On Berlioz’s political attitude, see Julian Rushton, *The Berlioz Website. Berlioz French or German: Nationalist of Internationalist?* (2003). <http://www.hberlioz.com/Special/jrushton.htm>.

³³ Nikolai Kovalskii, “Iz zapisok pokoinago general maiora N. P. Kovalskago,” *Russkii vestnik* 91 (1871). As Nikolai Kovalskii of the Elite Life Guard Regiment recorded, the Guard received orders at dawn of that day to prepare for a ceremonial entry into Paris, accompanied by music. Communication from Alexander Mikaberidze, July 2015. See also Alexander Mikhailovsky-

Danilevsky, *History of the Campaign in France, In the Year 1814* (London: Smith, Elder, 1839), 383–402.

³⁴ *Ibid.*, 386–402.

³⁵ For a collocation of further sources, see Maniguet, “Les forms dérivées du serpent,” 109–10.

³⁶ Earlier organological literature is sometimes in error. For example, Curt Sachs wrote, “In 1800, from this Ophibarytone or so-called Russian bassoon emerged the bass horn, an instrument of metal or wood.” Curt Sachs, *Handbuch der Musikinstrumentenkunde*, 2nd ed. (Leipzig: Breitkopf & Härtel, 1930), 164.

³⁷ Gottfried Weber, “Einige Vorschläge zu Vervollkommung und Bereicherung der Bass-Instrumente,” *Allgemeine Musikalische Zeitung* 18 (1816): 729, paragraph 18: “Serpent und Basshorn.... Das Instrument [referring to both instruments] müsste seine vollen elf Tonlöcher erhalten, diese näher an die ihnen eigentlich gebührenden Stellen verlegt, und diejenigen, welche dann der blossen Finger des Spielers nicht mehr bequem erreichen und decken könnte, durch, theils offene, theils geschlossene Klappen gedeckt, die Klappen aber, so viel thunlich, mit doppelten Klappenstielen versehen werden.”

³⁸ Heinrich, “Beschreibung und Empfehlung eines von G. Streitwolf in Göttingen verfertigen chromatischen Basshorn,” *Allgemeine Musikalische Zeitung* 22 (1820): 688–89. According to Günter Hart (“Musikinstrumentenmacher in Göttingen bis zur Mitte des 19. Jahrhunderts,” unpublished manuscript, 1960–62, Stadtarchiv Göttingen, no. B 498, 96), chromatic bass horns were used in the infantry regiment at Hildesheim and the civil militia at Hamburg. About five instruments have survived. They were also manufactured by J. A. Heckel in Biebrich in the 1830s (*Preis-Courant* in Munich, Staatsbibliothek, Schafhüteliana 3.3.7.)

³⁹ Cologne, Stadtmuseum, no.294. A similar instrument in G by Jeremias Siering in Magdeburg, ca. 1858, is preserved in the Musikinstrumenten Museum Leipzig, no. 1600. Another variant by Carl Gottlob Finke, Dresden 1846, survives in *idem*, no. 3933.

⁴⁰ Hermann Eichborn, “Ein Trompeter des neunzehnten Jahrhunderts,” *Zeitschrift für Instrumentenbau* 6 (1885–86): 493, 506; 7 (1885–86): 1, 14, 38. Quotation from vol. 7, p. 1: “Dieses Instrument soll im Waldhorn-Quartett, wo es unter Umständen die Stelle des vierten Horns vertritt, eine wundervolle Wirkung geben und überhaupt ein schönes Klangmaterial gewähren.”

⁴¹ Stölzel’s *Preis-Courant* can be found in August Sundelin, *Die Instrumentirung für sämtliche Militär=Musik=Chöre oder Nachweisungen über alle bei denselben gebräuchliche Instrumente* (Berlin: Wagenführsche Buchhandlung, 1828). For illustrations of Stölzel’s bass horn, see Herbert Heyde, *Das Ventilblasinstrument. Seine Entwicklung im deutschsprachigen Raum von den Anfängen bis zur Gegenwart* (Leipzig: Deutscher Verlag für Musik, 1987), fig. 8a. p. 261.

⁴² *Felix Mendelssohn Bartholdy: Sämtliche Briefe*, ed. Helmut Loos and Wilhelm Seidel, vol. 1, 1816–1830, ed. Juliette Appold and Regina Back (Kassel etc.: Bärenreiter, 2008), 130, 132. For additional information about Mendelssohn’s use of the English bass horn, see Part 3 of this series, in the following volume of this *Journal*.

⁴³ Nicolas Etienne Framery, ed., *Calendrier musical universel 1789* (Paris: Le Duc, 1789; rpt., Geneva: Minkoff, 1972), 2573. “J. J. Regibo, Musicien à la Collégiale de Saint-Pierre à Lille, vient d’inventer un Serpent nouveau qui est fait de même qu’un Basson; il se démonte en trois parties, et est plus fort que le Serpent ordinaire, et plus aisé à jouer; il a la même embouchure, est au même diapason et même gamme.”

⁴⁴ Ernst Ludwig Gerber, “Versuch einer näheren Beleuchtung des Serpents,” *Allgemeine Musikalische Zeitung* 6, no. 2 (12 October 1803): 17–25, here 24.

⁴⁵ Markneukirchen, Musikinstrumenten Museum, Nachlaß Wilhelm Petzold, group 3.3. Petzold (1812–82) settled in Markneukirchen as drawing and music teacher. He drew fingering

charts for the local makers and dealers. After his death, his papers were given to the museum. About Petzold, see Enrico Weller, *Der Blasinstrumentenbau im Vogtland: Untersuchungen und Dokumentationen zur Geschichte eines Gewerbebezuges der Musikinstrumentenindustrie*, ed. Verein der Freunde und Förderer des Musikinstrumenten-Museums (Orb [Neckar]: Geiger, 2004), 105.

⁴⁶ The fingering chart is apparently unfinished as the instrument is drawn only in pencil and the fingering grid, in ink, lacks gridlines. It is either a copy by Petzold, or entered his papers at the earliest in 1834 from an unknown source. It is highly implausible that Regibo's instrument was still being built after 1834. The fingering chart as it survives is unsuitable as a package insert and instruction leaflet for an instrument that was to be shipped to a customer or dealer. I am grateful to Enrico Weller, Markneukirchen, for discussing the function of the fingering charts as package inserts.

⁴⁷ A copy of the Grenser type, built in the 1810s by Max Stiegler in Munich, is in the collection of Marlowe A. Sigal in Newton, MA, and another in the Brussels Musical Instruments Museum (no. 2731), which is attributed to Tuerlincks in Malines (Southern Netherlands).

⁴⁸ *Hamburgischer Correspondent* no. 122 (1 August 1809).

⁴⁹ Herbert Heyde, "Die Werkstatt von Augustin Grenser d. Ä. und Heinrich Grenser in Dresden," *Tibia* 18 (1993): 593–610, here 599.

⁵⁰ *Ibid.*, 598–99. Invoice of 22 December 1813, by carpenter Friedrich Backhaus: "Vier Stöcke zu Serwang abgehobelt / 6 Stöcke zu Serwang abgehobelt" ("four stocks for serpents planed off / 6 stocks for serpents planed off"). On 11 August 1813 the firm Erdmuthé Juliane verw[itwete] Liebel charged Grenser's widow 4 *Thaler* for "1 *Serpentstürze*" and on 12 September 1813, the same amount for another brass bell for a serpent. It is not clear, however, if the term *Serpentstürze* refers to a bell for a bass horn or if Grenser also built a version of the fagott-serpent with bell. After the death of the trumpet maker Christian Wilhelm Liebel in 1810–11 his widow continued the workshop under the name *Liebels Witwe* ("Liebel's Widow") until 1815, when Carl Gottlob Eschenbach took it over.

⁵¹ Konrad Neefe, "Die historische Entwicklung der Königlich Sächsischen Infanterie- und Jägermusik im 19. Jahrhundert," *Neue Zeitschrift für Musik* 63, no. 31 (1896): 357. Neefe obviously misinterpreted the serpents mentioned 1840 in Dresden as S-shaped instruments.

⁵² *Ibid.*, no. 31, p. 358.

⁵³ Erich Tremmel, "Blasinstrumentenbau im 19. Jahrhundert in Südbayern" (Inaugural-Dissertation, Philosophische Fakultät Universität Augsburg, 1987), 218–19. The instrument has not survived, but the precise measurements of the carrying box have been recorded. They allow the conclusion that the instrument was an upright serpent with a narrow bell.

⁵⁴ Erich Egg and Wolfgang Pfaundler, *Das große Tiroler Blasmusikbuch* (Wien: Fritz Molden, 1979), 79.

⁵⁵ Innsbruck, Tiroler Landesmuseum Ferdinandeum. Photo in *ibid.*, 98–99.

⁵⁶ Heinrich Welcker von Gontershausen, *Neu eröffnetes Magazin musikalischer Tonwerkzeuge* (Frankfurt / Main: the author, 1855), 133: "dessen äußeres Aussehen, mit Weglassen der Schallstürze, dem Fagott ähnlich ist."

⁵⁷ Gerber, "Versuch," 20.

⁵⁸ Tremmel, *Blasinstrumentenbau*, 214.

⁵⁹ Heyde, *Musikinstrumentenbau in Preussen*, 310.

⁶⁰ Pricelist in Bergamo, Istituto Musicale Donizetti at Bergamo; photo in Meucci, "Brass Bands," 104.

- ⁶¹ Johann Adam Heckel, *Preis-Courant*, ca. 1840, lists: “17 Ein chromatisches Basshorn ... 66 Florin / 18 Ein Stockserpent ... 40 Florin,” in “Schafhüteliana,” Nachlaß Emil von Schafhütel, Bayrische Staatsbibliothek München, 3.3.7.
- ⁶² Ferdinand Schlotthauer, *Kurze Andeutungen die Instrumente des Orchesters und der Militärmusik mit Effekt zu verwenden* (Passau: Ambrosius Ambrosi, 1843), 8.
- ⁶³ Illustrated pricelist by Joseph Felix Riedl in Bergamo, Istituto Musicale Donizetti. Photo in Meucci, “Brass Bands,” 101–13, esp. 104.
- ⁶⁴ Habla, *Besetzung*, 1:280.
- ⁶⁵ Welcker von Gonterhsausen, *Neu eröffnetes Magazin*, 133; F. L. Schubert, *Instrumentationslehre nach den Bedürfnissen der Gegenwart* (Leipzig: C. Merseburger 1862), 41.
- ⁶⁶ The S-shaped serpent by J. W. Weisse in Museum Viadrina in Frankfurt / Oder is apparently one of the last to be used in the Prussian military. On older serpents, see Sabine Klaus, “Serpent Precursors in Italy and elsewhere, the Serpents in the Netherlands and Germany,” *Musique—Images—Instruments* 14 (2012): 143–64, in particular 157–63.
- ⁶⁷ A surviving ledger of the Markneukirchen dealer F. T. Merz documents the shipment between 1835 and 1840 of ten serpents of brass with three to five keys to the United States. See Weller, *Der Blasinstrumentenbau*, 90–91. S-shaped serpents were also advertised by I. Kämpffens Söhne in Markneukirchen in 1833.
- ⁶⁸ Berlioz, *The Memoirs of Hector Berlioz*, transl. David Cairns (New York: Norton, 1969), 306.
- ⁶⁹ The diagram was developed from a database of measurements that the author took in various museums: The Metropolitan Museum of Art in New York, The Museum of Fine Arts in Boston, the Casadesus Collection at Symphony Hall in Boston, the Musical Instruments Museum in Brussels, the Musical Instruments Museum in Edinburgh, the Musikinstrumentenmuseum der Universität in Leipzig, the Germanisches Nationalmuseum Nuremberg, the Stadtmuseum and Deutsches Museum in Munich, the Marlowe Sigal collection in Newton, MA, the Oberösterreichische Landesmuseum in Linz, and the Kunsthistorische Museum in Vienna. The author would like to thank the curators and directors of the aforementioned museums and collections for permission to examine and measure the instruments.
- ⁷⁰ Thierry Maniguet, “L’usage du serpent à l’époque révolutionnaire,” *Musique—Images—Instruments* 14 (2012): 90. The Garde nationale carried two serpents and the two corps of the Conservatoire (founded 1795), two each.
- ⁷¹ *Ibid.*, 88–89.

