

# Inventions: Need or Greed?

## Part 2: "The right method of chanting and singing"

by Clifford Bevan

Following eleven years spent contesting legal cases, Adolphe Sax, bankrupted three times, died aged eighty in 1894. One of the Parisian instrument makers who had taken Sax to court was Jean-Hilaire Asté, known as Halary, inventor of the ophicleide. This was the subject of French Patent 1849 of 24 March 1821, which also included, along with the ophicleide, the quinticlave (alto ophicleide), an alto keyed bugle, and a metal clarinet. Halary appears to group the four instruments together as they were all made of metal and all intended for military bands. His

alto keyed bugle (the clavitube) is keyed and totally chromatic. The quinticlave, in bassoon shape, is pitched in F, with eight keys. The ophicleide, which he describes as the double bass of the wind band ('contre-basse d'harmonie'), is the same shape as the quinticlave but bigger. It replaces the serpent "which was very unrewarding and of recognised inadequacy, with very vague intonation and not having in all its compass more than two clear and sonorous notes." He points out that these instruments are intended for military purposes but that they could be used advantageously in every type of music. The metal clarinet is like an ordinary clarinet but, being made in metal, is more suitable for military use.

The keyed bugle, which had been invented in Ireland in 1810, was very successful since the addition of keys to a brass instrument of conical profile resulted in a more than satisfactory system. Halary did not appear to claim any particular improvements in his own invention, although it was pitched in F—an instrument in the alto range as opposed to the normal soprano keyed bugle. The quinticlave (alto ophicleide) was taken up to some extent by military bands but not elsewhere. It is reasonably satisfactory, although intonation tends to be difficult to control and there were already instruments of similar pitch (french horns) to which players had become accustomed.

The ophicleide, as we have seen, was by far the most important instrument of the four, a true invention, with all the advantages over the serpent claimed by Halary.

***It became established practice in the Church for a chorister to be trained to play the serpent.***

His patent gave protection for only ten years, so he had to work hard to maximise sales before other makers began to manufacture their own ophicleides. This they began to do very shortly afterwards, not least Gautrot, one of the first European brass instrument manufacturers to use mass production techniques, but there were also many others. The ophicleide clearly satisfied a need: fifteen years after its invention in Paris alone there were more than sixty professional ophicleidists (most of them in the military), and the instrument was in wide use until almost the end of the nineteenth century. Ophicleides were found accompanying plainchant in church, providing the bass parts in military bands (sometimes, later on, in conjunction with tubas), and



The father of the serpent Jacques Amyot (1513-93) in a portrait by Léonard Gaultier (1561-1641). Bibliothèque nationale de France.

they were also the first bass brass instruments on which it was possible to play virtuoso solos of the type popular with nineteenth-century audiences. It is interesting to note that some authorities consider that Sax came to the saxophone through fitting a bass clarinet mouthpiece to an ophicleide. Experiment shows that this does indeed produce a new viable instrument, a real invention.

In relation to inventions, "need" is an important word. Wieprecht used it in his explanation of why he invented the Bass-Tuba and low brass players obviously felt it in relation to the ophicleide. Moving backwards in time: did serpent players feel a need? The short answer is "no" because neither instrument nor players existed before the serpent

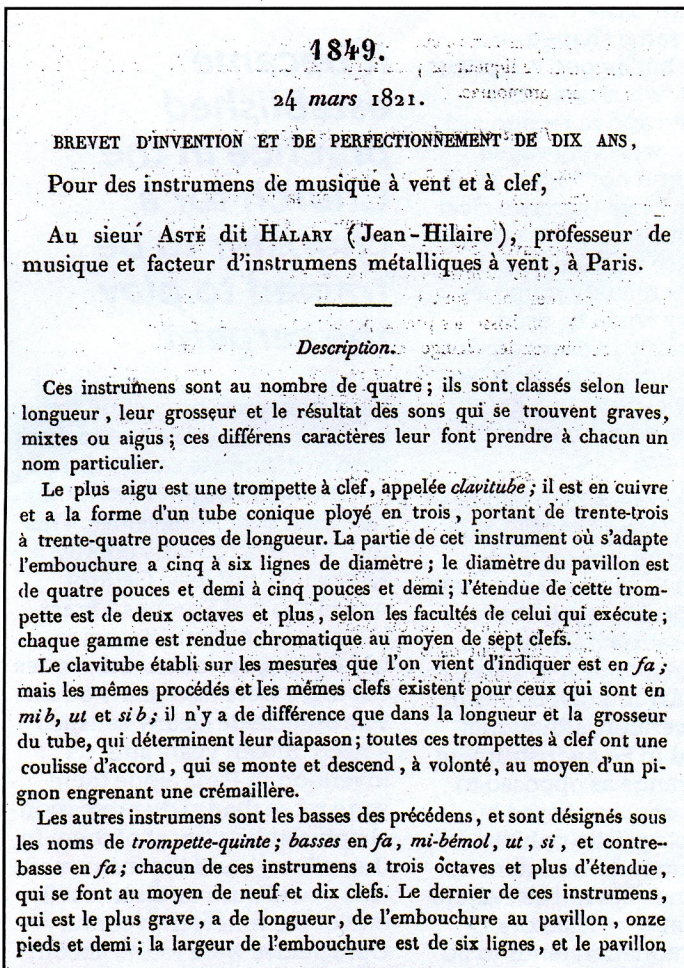
appeared; however, this instrument was invented because there was a need for it, although not one felt by instrumentalists.

The reason for the serpent's invention lies with Jacques Amyot (1513-93), Bishop of Auxerre, Grand Almoner of France, and a man of letters who translated into French works by Plutarch, through which he is credited with contributing significantly to the refinement of the French language. Earlier in his career he had accompanied the French ambassador to Venice and visited Rome. Later, Cardinal de Tournon sent him with a letter from Henry II of France to the Council of Trent. In theological terms, a Council is an assembly of the rulers of the Catholic church legally invoked for the discussion of, and decisions on, ecclesiastical matters. Pope Paul III called the Council of Trent, which deliberated from 1542-63. One of its decisions allowed bishops to "determine the right method of

chanting and singing that must be observed ... [and] organize and effect whatever he may judge useful and necessary."

This dispensation gave bishops the freedom to adopt whatever methods they thought fit in order to maintain, or improve, the performance of Gregorian Chant in their cathedrals. (Improving standards of worship formed part of the Counter Reformation, which was actually initiated by the Council.) The controller of Bishop Amyot's household was Canon Edmé Guillaume and, as by definition, a canon is involved in acts of worship in a cathedral he presumably had some responsibility for maintaining their standards.

We do not know the quality of chanting at Auxerre at the time, but Bishop Amyot was well-travelled and would be aware of the best examples then prevailing. Plainchant is unaccompanied, and we know (possibly through personal experience?) that unaccompanied choirs find it difficult to hold their pitch. Within living memory, choirs have sometimes been supported by the insertion of a subtly-played instrument. It seems an obvious thing to do, but using a treble instrument in a choir of male voices is certainly not subtle. The available options were limited. At the time (around 1590) the organ was used for this purpose in Paris at Notre-Dame, but quite how seems uncertain. It would have been unacceptable for it to have any prominence. Rejecting the idea of stringed instruments, the dulcian (ancestor of the bassoon) seems not to have been known in France and the only remaining option was the bass cornett, which had only a tenor range. It seems that this was the instrument with which the bishop encouraged his canon to experiment. It was a solidly-built instrument, with thick wooden walls, and possessed some gentle curves to facilitate the positioning of the fingers over the holes. Guillaume's serpent was ultimately of wider bore but with much thinner walls. Owing to the longer air-column required to produce lower notes, its curves were more pronounced.



Above: The first page of Halary's Patent 1849 of 24 March 1821 for "Keyed musical wind instruments." These were the Clavitube, Quinticlave, Ophicleide and Clairon métallique.

1. Winston S. Churchill, radio broadcast, February 9, 1941.

***It seems an obvious thing to do, but using a treble instrument in a choir of male voices is certainly not subtle. The available options were limited.***

It became established practice in the Church for a chorister to be trained to play the serpent. Quite probably, this was because, as any serpent player knows, the requirement for a good ear is even more vital with serpent than with most other brass instruments. The records of music in la Saint-Chapelle de Paris, at the opposite end of the Isle de la Cité to Notre-Dame, show continuous serpent activity from 1651 to 1725.

Did Edmé Guillaume benefit financially? He was a servant of the Church and all of his actions, and anything that resulted from them, were dedicated to the glory of God. Did the musical world benefit from the existence of the serpent? Surprisingly, bearing in mind the opprobrium that has been heaped upon the serpent over the years, it certainly did. But was it a true invention?

Using the strictest criteria, it was only a modification of the bass cornett, just as the ophicleide was (Halary's own admission)

an improvement on the serpent and the Bass-Tuba (as stated by Wieprecht) was an improvement of, amongst other things, the ophicleide. The saxhorns also were simply improvements of other brass instruments of the same pitch, as all Sax contemporaries knew but he would not admit.

All of the inventors and patentees were inspired by an awareness of the shortcomings of existing instruments and by a compulsion to do something to improve matters. Equally, it is certain that none of them had any idea of what their instruments would lead to, how they would inspire and enable composers, and how they would challenge performers. For players are at the end of the line, the final stage in the tripartite inventor-composer-performer partnership. The final responsibility is ours—yours and mine. What a responsibility, but what opportunities!

A final quotation to ponder: "Give us the tools and we will finish the job."<sup>1</sup> ■

**„PAUL“:  
THE NEW  
ANDREAS HOFMEIR  
MOUTHPIECE**

[www.perantucci.com](http://www.perantucci.com)

**ROBERT TUCCI** **SOUND ENERGY**

**Model RT-50** Tubist's Power Tool  
The RT-50 offers great depth of sound and dynamic range. A fine-tuned balance of all relevant factors has made this one of the world's most popular and successful mouthpieces. Heavy-shell model RT-50+ also available. 33.00 mm cup diameter.

**Model RT-88** Tubist's HD Power Tool  
Large contrabass tuba mouthpiece for the musician who requires maximum dynamic range while retaining excellent response characteristics. Heavy-shell model RT-88+ also available. 33.50 mm cup diameter.

**Model RT-36** Fast Response ML Mouthpiece  
The RT-36 is ideal for large-bore instruments where fast response is desired. Narrow rim provides remarkable flexibility. Cup has the depth necessary for good tone. 33.00 mm cup diameter.

**Model RT-44** Rich-Sounding ML/L Mouthpiece.  
The RT-44 provides strong fundamental, a rich colourful sound and excellent projection. A proven ML mouthpiece, tonally very flexible and strong over the entire range. 33.00 mm cup diameter.

**Model RT-48** Superior American Classic.  
Ideal for those who find the RT-36 and RT-44 too small or the RT-50 and RT-88 too large. Sound dark with a pronounced core. Rim enhanced for quick response and clarity. Heavy-shell model RT-48+ also available. 33.00 mm cup diameter.

**Model RT-64** F-Tuba Solo Mouthpiece - Soloist's Choice  
Contemporary rim and slightly shallower cup. The RT-64 provides a lively and exciting sound clear core. Revised for 2017. 32.00 mm cup diameter.

**Robert-Tucci.com**