

FRENCH

SERPENT

NOTATION

PART 1:  
*POURQUOI?*

▶▶ EDITOR'S NOTE

As an editor of the Historical Instruments section since 1992, I have sought to include pieces of interest for the ITEA membership and for others who are involved in historical brass research and performance. When Cliff Bevan would send me, throughout the years, one of his many essays, I would take delight in attempting to anticipate how he would treat the topic since, as had been the case, I was always somewhat familiar with the basic area of inquiry. This essay (the first of two parts), however, leaves me speechless as I now realize that one of our most basic assumptions about the serpent is outright incorrect. Bevan's research serves as a testimony of not only exploring unknown practices and discovering new insights but, also, guiding (if not rewriting) our general assumptions about the origins and development of low brass instruments.

—Craig Kridel

Ex. 1

J. Froelich: Serpent Schule, c. 1811

*Serpent Scala.*

(Die gefüllten Punkte bedeuten den ganzen, die halbgefüllten den eines Tonlochs, und die weißen Ringe zeigen das Öffnen derselben)

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To low brass players, the French composer Hector Berlioz is best known through ophicleide parts in works like the *Symphonie Fantastique* and *Requiem*. When not creating these large-scale compositions, he found time to write—as a contributor to the influential *Journal des Débats* for over thirty years and his *Treatise on Instrumentation*, where he combines his knowledge as a master of the art with his skills as a writer to accurately describe orchestral instruments as they were used around the year 1844.

In relation to the serpent, he declares: “it must be written a whole tone above the real sound, like the ophicleide in Bb.” This statement has confused many, but there were particular circumstances in France which resulted in this particular convention. In other countries where serpents were found, they were regarded as being at sounding pitch. The note C was therefore played with all finger-holes covered, as seen in *Froelich's Serpent-Schule*, c. 1811. [Ex. 1]

The pitch used in French churches (*ton de chapelle*) was a tone lower than the pitch used in secular performances (*ton de chambre*) through the end of the eighteenth century. The serpent was invented as an instrument for use in churches, as a support for voices in the liturgy, particularly plainchant. Serpentists trained alongside choristers and their instruments had to conform to the pitch used by those who performed around it.

The French military band first appeared in a recognizable form during the reign of Louis XIV (1643-1715), when the oboes and bassoons that formed its backbone had reached a sufficiently advanced stage in their development. While the serpent is thought to have been invented in the last decade of the sixteenth century (around 1590), there appears to be no record of its adoption by the French military. However, shortly after the opening of the *École de Musique de la Garde Nationale Parisienne* in 1790, a professor of serpent was appointed. When the Paris Conservatoire was established five years later, there were six serpent teachers for twenty-four students.

Presumably the first serpents, serpent teachers, and serpentists in the military must have come from those already in the church, by one route or another. Herein lies the problem. Bernard Fournet, Professor of Serpent in the Early Music Department of the Conservatoire National Régional de Toulouse, gives the two different pitches in use at the time as respectively around 392 Hz2 (“church”) and 415 Hz (“chamber”). The oboists, bassoonists, and others, as members of instrumental ensembles, will have played at the higher of these two pitches. Thus the serpent was considered as being in Bb because its C, played with all holes covered, gave a Bb in the band. This can be confirmed through French tutors (for example, Hermenge's *Méthode*, 1835) and instruction books where the fingering is indicated. [Ex. 2]

Military band serpentists read from the same part as bassoonists and would in consequence have had, in effect, to transpose up a tone, just as euphonium-players do today. However, it is possible that their way may have been eased if they had become accustomed to reading a certain type of plainchant.

Plainchant notation uses a four-line staff and a C clef. The C clef is today familiar to trombonists: the note C is shown by

WHILE THE SERPENT IS THOUGHT TO HAVE BEEN INVENTED IN THE LAST DECADE OF THE SIXTEENTH CENTURY (AROUND 1590), THERE APPEARS TO BE NO RECORD OF ITS ADOPTION BY THE FRENCH MILITARY.

Ex. 2

Hermenge: Méthode, c.1835

## TABLATURE GÉNÉRALE DU SERPENT

Les points noirs ● indiquent les trous bouchés; les zéros ○ ceux qu'il faut ouvrir.

1<sup>re</sup> OCTAVE.
2<sup>me</sup> OCTAVE.
3<sup>me</sup> OCTAVE.

Ce signe ⊕ indique que le trou doit être à moitié bouché.

Ex. 3

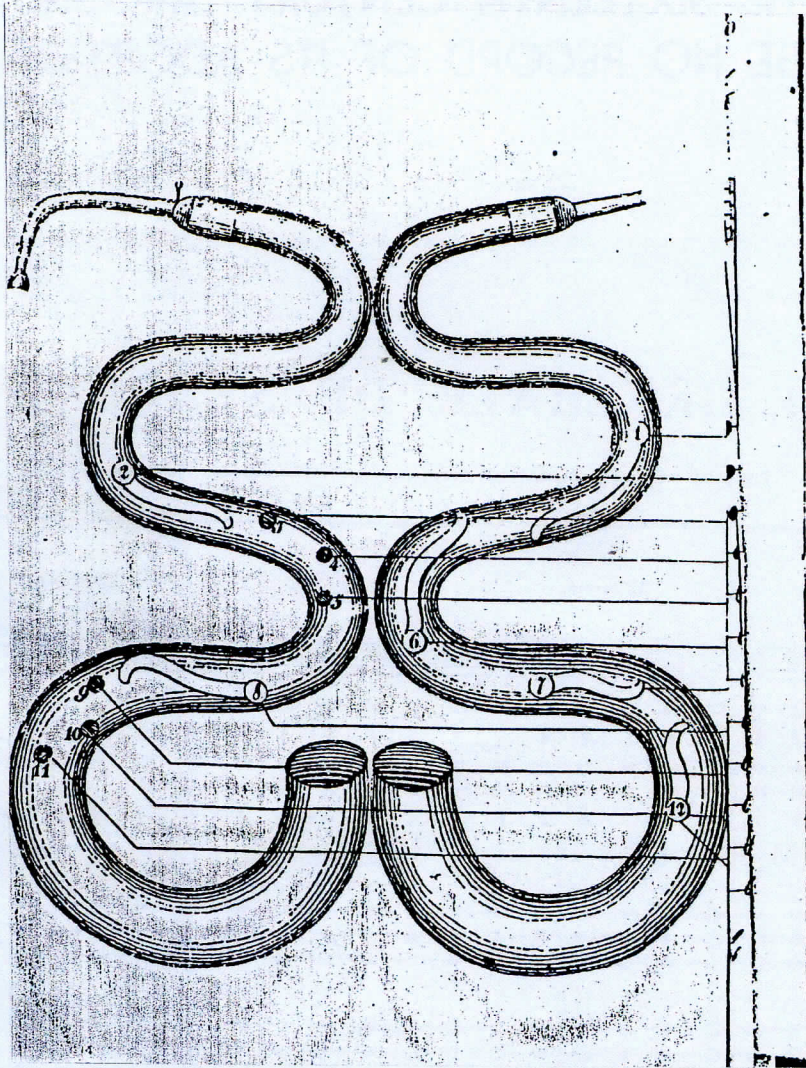
Giovanni Leone: Grammatica di Canto Gregoriano, 1937

Esempio di trascrizione  
della scala gregoriana in figurazione moderna:

do re mi fa sol la si do

Ex. 4.

Lucan: *Méthode de Plain-Chant*, 1826



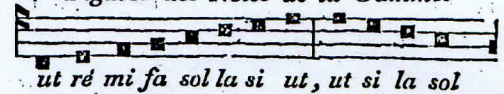
## MÉTHODE DE PLAIN-CHANT.

### PREMIÈRE PARTIE.

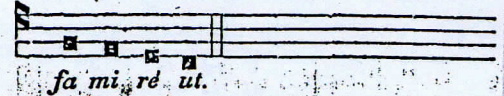
Le Plain-Chant s'écrit sur quatre lignes et trois espaces, que l'on nomme *portée*.

On se sert de sept notes, qui se nomment *ut, ré, mi, fa, sol, la, si*. Ces sept notes se posent sur les lignes nommées ci-dessus; et quand les quatre lignes ne suffisent pas pour monter ou pour descendre, on ajoute soit en haut soit en bas une ligne rapportée.

#### Figures des Notes de la Gamme.



*ut, ré, mi, fa, sol, la, si, ut, ut, si, la, sol*



*fa, mi, ré, ut.*

Ces sept notes suffisent pour toute l'étendue du chant, parce qu'on peut les répéter à l'infini.

#### Exemple des lignes rapportées.



*sol, la, si, ut, ré, mi, fa, sol, la, si, ut*

whichever line the sign encloses. Thus, music originally for tenor trombone places C on the fourth line and for alto trombone on the middle line. (There was also a soprano clef in which C was on the bottom line.) The idea is practical, allowing the bulk of the notes to be performed to lie on the lines and spaces of the staff without the need for ledger lines.

In Example 3, from Giovanni Leone's *Grammatica di Canto Greoriano*, modern treble clef notation, shown on the right in the form of a treble clef C major scale, is compared with the same, shown in plainchant notation, on the left. In this latter case there is a four-line staff and the lower note C ("do" in Italian) is hanging from the bottom line: the position of treble clef D. Example 4 shows identical serpent notation from Lucan in *Méthode de Plain-Chant* (1826.) In a liturgical setting, the serpent player

could be playing from the plainchant notation shown here. The C hanging from the bottom line would be played with all holes covered. However, coming to an instrumental ensemble, if the serpentist read the note hanging from the staff as a treble clef D and fingered it accordingly, it would coincide with the C of the remainder of the band.

This suggestion relies on two assumptions: that the treble clef was in existence by the time of the serpent's invention and that the serpent-player would be conversant with it. The treble clef was certainly known by the fifteenth century, some one-hundred years or more before the serpent came into existence. That it might be known to the serpentist is more difficult to prove, but this hypothesis is strengthened through an awareness of the French approach to instrumental and vocal

instruction. Here there is a dramatic contrast to the American approach. In a word: the French did not conceive *A Tune-a-Day*. This distinctively American method marries the acquisition of theoretical knowledge (notation) with the acquisition of practical ability (technique). The French method instills an awareness of theoretical knowledge before introducing the instrument to the would-be player. In recent times this period of theoretical instruction could last as long as a full year of lessons. It is therefore likely that a singer or instrumentalist being trained for a career in the Church would receive a thorough instruction in such matters, including the various clefs then in use.

This explanation may well seem to be becoming increasingly complicated. But as trombonists have found, in practice you don't actually have to be able to name a note in order to play

Ex. 5  
 TENOR TROMBONE  
 Mozart: Requiem 'Tuba Mirum'  
**Andante**

Note names

B $\flat$  F D B $\flat$  F D B $\flat$  B $\flat$  D F A $\flat$  F D A $\flat$  G B $\flat$  E $\flat$  G $\flat$  F C F E $\flat$   
 C G E C G E C C E G B $\flat$  G E B $\flat$  A C F A $\flat$  G D G F

Slide positions and note pitches are identical in both versions.

Ex. 6  
 Holst: Suite in E $\flat$  'Chaconne'  
 E $\flat$  BASS

Note names

C D A G E C D G E A B E D G  
 E $\flat$  F C B $\flat$  G E $\flat$  E B $\flat$  G C D G F B $\flat$

TUBA  
 Fingering and note pitches are identical in both versions.

Ex. 7  
 William Rimmer: Minstrel Memories

Bass Trombone  
 E $\flat$  Bass  
 B $\flat$  Bass



Photo Courtesy of Berlioz Historical Brass

# THE TREBLE CLEF WAS CERTAINLY KNOWN BY THE FIFTEENTH CENTURY, SOME ONE-HUNDRED YEARS OR MORE BEFORE THE SERPENT CAME INTO EXISTENCE.

it. You just use the right slide-position (or, for serpentists, fingering). A good example is the treble clef to which many UK trombonists are introduced in their early brass band days and through which the more widely-used tenor clef can be instantly read as the positions are the same as when reading treble clef, apart from the addition of two sharps to the key-signature. [Ex. 5] Similarly, UK tuba players who begin their lives in brass bands reading treble clef in Eb bass parts, read from concert pitch bass clef identically while adding three sharps to the key signature. [Ex. 6]

Incidentally, a bizarre situation arose from treble clef Eb Bass parts in brass band scores as laid out until the mid-20th century. Originally the three trombone parts were written as they

appeared in orchestral scores, respectively in alto, tenor and bass clefs. By the 20th century this had normally become tenor clef for each of the two Tenor Trombone parts and bass clef for the Bass. By the middle of the century the Tenor Trombones were normally written in treble clef, and the Bass Trombone staff remained the only one in the entire score not in treble clef. Its bass clef staff, positioned immediately above the treble clef Eb Bass line, resulted in a unison note between the two instruments being placed on the identical line or space but given different names in each staff. [Ex. 7]

To return to serpents: this quagmire of conjecture and theory may be only one of several possibilities relating to serpent notation itself. Bernard Fourtet has also referred to the fact

that many existing older bocals seem to be shorter than modern ones. Does this imply that there were serpents built in the key of D rather than the normal C? This would seem to provide an alternative solution to the problem of serpent notation, but in fact it opens up a far wider discussion: what is the key of C, and what is the key of D?

\*\*\*

“When I use a word’, said Humpty-Dumpty in rather a scornful tone, ‘it means just what I choose it to mean neither more nor less.’”  
(*Through the Looking Glass* by Lewis Carroll)

In a future Historical Instruments column, we shall explore pitch and transposition further and consider how they continue to affect low brass players, and we may even find that the tradition of French serpent notation lives on (rather inconveniently) in a different environment.

## Notes

1. “Pourquoi?” French: “Why?”
2. A number followed by ‘Hz.’ (Herz) indicates the number of times in a second that complete vibrations (oscillations) need to occur in order for a note of that particular pitch to be produced. The higher the Herz number, the higher the pitch of the note.





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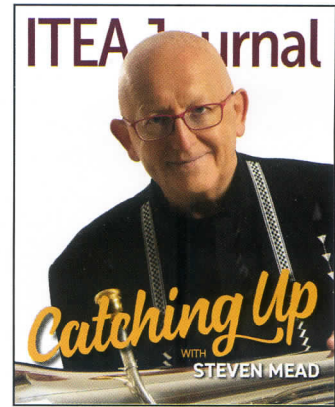
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ON OUR COVER

Euphonium great Steven Mead takes time out of his nearly nonstop traveling and performing schedule to chat with Sarah Miller.



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