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A methodical approach to learning and playing the historical clarinet and its usage in historically informed performance.

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Preface

This practice-oriented book is aimed at musicians who are interested in playing the historical clarinet but have so far set or had to set other professional priorities.

It contains - without any scientific claim - an overview of historical developments of the instrument as well as considerations on the choice of the instrument in the context of historically informed performance (HIP).

Fingering charts for the individual categories of historical clarinet instruments are presented graphically, as is customary today.

Finger exercises and studies are specially developed and designed to the fingering problems of historical instruments.

Information and tips from practice are intended to be a guide for those interested and to help answering questions.

A repertoire excerpt and references to further specialist literature are intended to stimulate the deepening of already acquired knowledge.

Introduction

The increasing interest in HIP in recent years makes more and more musicians, whether students or established professional colleagues, want to expand their knowledge and skills in this direction as well. New courses being offered at conservatories, and seminars and master classes delight in growing enrolment figures. Scientific literature brings interesting findings to light. Long-forgotten composers whose works deserve to be performed again and included in the concert repertoire are being rediscovered. Even the music of the late 19th and early 20th centuries enables the engagement with new aspects in a historical orientation.

The clarinet, a latecomer to the classical orchestra, has also become a fixture in the field of historically informed performance practice. In the period from about 1700 to the present day, it has experienced a rapid and turbulent development, both in terms of instrument construction and playing technique. This development has frequently inspired composers and gave rise to some of the most interesting musical masterpieces and treasures.

Despite the greater complexity of finger movements in forked fingerings and the different acoustic properties compared to the modern clarinet, the historical clarinet along with its family members is relatively easy to learn for experienced musicians. However, it is not so easy to get a good overview of the origins of the different systems as well as the types of instruments and their respective use within HIP.

This book aims to support this endeavor and provides clarinetists of all skill levels with an initial outline of the historical clarinet in theory and practice. It is intended to arouse curiosity and encourage closer studies of clarinet instruments and their interesting history.

Historical categories of clarinet instruments

Chalumeau



Although the chalumeau counts as the predecessor of the clarinet, it is not considerably older than the latter and was verified only at the end of the 17th century.

It probably originated from the "mock trumpet," which had also been popular in England since the end of the 17th century - a recorder-like instrument in which the sound-producing reed was cut out of the tube by a downward cut, but not separated from the instrument (idioglot). The "mock trumpet" (literally: false, imitation trumpet) had only finger holes and no keys yet.

However, these were added to the chalumeau: first the a' and bb' keys for the index finger and thumb of the upper hand. Later, more keys were added, which made it possible to extend the range from a major ninth to the undecime. Also, the reed was no longer part of the body as on the "mock trumpet" but was made separately (heteroglot) from a different material, usually from pile cane (*arundo donax*). It was attached to the mouthpiece with a string, with the reed facing the upper side, i.e. held with the upper lip.

Since the bb' key, with its tone hole position at the time, was hardly suitable for overblowing, the upper register suffered from tonal weaknesses and intonation problems as well as generally poor response. The semitones were played with fork fingerings as on a recorder. The chalumeau family included soprano, alto, tenor and bass chalumeau as well as the bassoon de chalumeau, in C and F pitch as known from the recorder.



Baroque clarinet with first two, later three keys



Around 1700, the Nuremberg instrument maker Johann Christoph Denner (1655-1707) succeeded in developing a new type of instrument. Denner dislocated the tone hole of the chalumeau thumb key for bb' about one centimeter towards the mouthpiece. This allowed clean and stable playing in the second register. A metal sleeve inserted into the tone hole ensured relatively clean intonation of the bb' . Thus, the range was extended upward by about an octave.

Whether Denner's "clarinet" was conceived as a further development of the chalumeau or as a completely new instrument is unclear, however. Above all, it is irritating that Denner continued to work on improvements to the chalumeau even after his invention. Nevertheless, he was eager to experiment and applied his experience to the construction of the new instrument, which differed significantly from the Chalumeau.

The conical widening of the bell, as on the oboe, gave more volume and stability to the low notes around g and f , but also to the c'' . Above all, the high register, henceforth called the "clarino register", was convincing in its clarity and assertiveness and at the same time, although tonally very trumpet-like, in its great flexibility. However, the lack of balance in intonation between the high and low (chalumeau) registers remained problematic. As a result, the high registers in the orchestra were played by clarinetists while the low registers still were executed by chalumeau players until about the mid of the 18th century.

Similar to the chalumeau, it was not yet possible to play a defined b' -natural on the clarinet. This was solved around 1730 with the addition of a third key. For this purpose, the instrument was lengthened below the hitherto lowest note f . The e note thus obtained could now be played and overblown to the b' -natural'.

In the beginning, the new tone hole and its key were placed on the backside of the instrument and operated by the thumb. Since the clarinet at that time still had two symmetrical holes on both sides for the tone f , it was convenient to use for both left- or right-handed people. The hole not needed was closed with wax or with a small wooden plug. Later on, the bb' -natural key moved to the left, within reach of the little finger of the left hand.

The baroque clarinet of the time consisted of three parts:

The mouthpiece and the today's barrel were still built in one piece.

The middle section had two keys and seven tone holes, some of which were double holes for semitones, as on the chalumeau.

The lower section with the f -hole and later the e/h' key also formed one piece together with the bell.



The reed tied to the mouthpiece was still positioned to the upper side of the instrument.

The Classical clarinet with five or six keys



Around 1760, the so-called classical clarinet came into being. However, it took another three decades for its final development. Although this new and more practical type of clarinet displaced the baroque clarinet, the latter was still produced occasionally until the early 19th century and used mainly in military music. Clarinets with four keys (either for $f\#/c\#$ or ab/eb), in which the middle section was also separated into two parts, are considered transitional instruments and were only made for a short period of time. The classical clarinet found its final design with five keys and a body in six parts:



Mouthpiece (usually made of ebony);

Barrel;

Upper joint with four finger holes (c' rarely made as a double hole) and two keys for a' and b' (this is also called the overblowing key);

Middle joint with three finger holes;

Foot joint with fingerhole for f and three keys for e/b' -natural, $f\#/c\#$ or ab/eb ;

Bell.

English instrument makers added an $a'-b'$ -natural trill as a sixth key to the clarinet from the late 18th century, while on the continent the $c'\#/g''\#$ key for the left little finger was usually added as a sixth key.





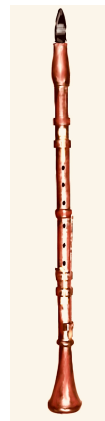
From 1752 the clarinet was included in the woodwind section of the Symphony Orchestra in Cologne. Somewhat later, around 1758, it found its way into the Symphony Orchestra in Mannheim and became an integral part of that ensemble as well. Several others followed this example.

For use in the orchestra of the time, clarinets in C, in B-flat and in A were used as standard. With these types, all keys were covered, and clarinetists switched between instruments to avoid unclear and tricky sequences of notes, depending on the required key. The small difference in size between B-flat and A clarinets made it possible to continue using the mouthpiece, barrel, foot joint and bell of one instrument and only to exchange the upper and middle piece joints for other keys (corps de rechange) - similar in function to the interchangeable bows of the valveless natural horns of the time.



Other clarinet instruments, mainly for solo and chamber music, in use since the late 18th century were the clarinet d'amour (in A, A-flat, and in G), the alto clarinet in G or in F, basset horns in various tunings, and, for the military, higher clarinets in D, E-flat, high F, high G, and high A-flat. Also, a clarinet with an extended range to notated low c, analogous to the basset horn, is known. This so-called basset clarinet was in an early design still without full chromatic between e and c. Thanks to the collaboration of the clarinet virtuoso and Mozart friend Anton Stadler (1655-1707) and the instrument maker Theodor Lotz (1748-1792) in Vienna, the basset clarinet was further developed into a precise and sonorous instrument. Its use, however, was mostly limited to solo parts.

(The picture shows from left to right: basset horn, clarinet d'amour, alto clarinet, basset clarinet)



Romantic clarinet with up to 14 keys



Although the term "romantic clarinet" is used to clearly distinguish it from the "classical" clarinet, the focus is more on its use in historically informed performance practice than on the actual differences in construction. Although instruments around 1820 had up to 14 keys, they were largely still based on the 1760 design, with several improvements aimed at key design (square, later round keys), a comfortable position, and reliability in playing.



Furthermore, refinement of the inner bore and enlargement of both tone holes and finger holes resulted in intonation balance between the upper and lower registers.

Particularly these tonal improvements could be immediately implemented in the orchestral instrumentation. Previously often used in only one of the two registers, the clarinet could now easily be charged to play an orchestral part that demanded its entire range. Progress in craftsmanship and woodworking made it possible to give the clarinet an elegant and ergonomic shape around 1820. To stabilize the top, which suffered from frequent exposure to moisture and heat, metal pins were used prophylactically to prevent the wood from cracking.



In addition to the possibility of playing semitones and chromatic turns with the help of new keys, the old forked fingerings remained usable. This considerably expanded the instrument's timbres and expressiveness, making the clarinet very popular with composers. The basset horn and alto clarinet also flourished as secondary instruments. This is documented by the number of pieces written for these instruments, whereas the clarinette d'amour gradually vanished from being used.

Iwan Mueller clarinet with 13 keys



From then on, the instrument's further development was shaped by the revolutionary findings and changes that the Russian-born Ivan Mueller (1786-1854) made to the clarinet in the first two decades of the 19th century. In collaboration with the leading instrument makers of the time, Mueller achieved the following improvements:

He provided the keys, until then fastened between two wooden blocks and fixed with a simple metal pin, with small rectangular tubes mounted on screw axles - a method still in practice today. Müller mounted the screw axle and tubes between two small pillars, which were initially placed on small plates and later screwed directly into the wood. This eliminated the need for the time-consuming traditional method of shaping the block bearings from the instrument's body.

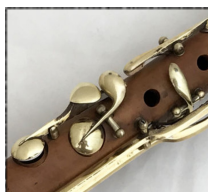
The positions of the tone and finger holes of the 13-key Mueller clarinet were optimized with the result of better intonation and improved acoustic features of the clarinet.

The g'# tone hole was moved to the right (in playing position), and the key was designed as a bridge over the a' key.

Instead of the old finger hole for f/c'', a correctly positioned key was installed, which allowed to cease the division of the body into middle piece and foot piece. These, now made of one piece of wood, formed the so called lower joint.

The previously traditional flat pads made of leather, felt or cork were a critical flaw on the instruments of the time. It was impossible to obtain a reliable airtight sealing of the tone holes. Müller developed new types of leather pads filled with wool. These flexible pads were inserted into a salt spoon like key cap, separately welded to the key rod.

Mueller provided the tone holes, previously in a flat shape, with a milled shapr-edged rim (German: Zwirl) as a proper seat for the key pads. The new pads reliably sealed against these tone hole rims. This design set a standard lasting to this day.



Mueller also presented the first reed ligature made of metal, using two screws to fasten the reed to the mouthpiece.



Mueller's innovations first caught on in France, but quickly spread throughout the world.

The Boehm clarinet



In 1839 Hyacinthe Eléonore Klosé (1808-1880) designed a new arrangement of tone holes and keys based on the ideas of the flute maker Theobald Boehm (1794-1881). The aim was to position the tone holes on the clarinet only due to acoustic needs without regards of the finger technique, which consequently required a new key system. Next to others the size of the tone holes was modified for better intonation. Thereby Klosé made use of an invention by Charles-Joseph Sax (1790-1865) which was applied earlier to the Mueller-clarinet. Since large tone holes cannot be covered by a single finger Klosé combined two holes, one for the finger and a vent for the intonation. The finger hole was combined with the vent, so both being closed or opened simultaneously. The vent was connected to a ring surrounding the fingerhole. By this construction two functions could be realised: opening or closing of both finger hole and vent.



In addition, the new "Boehm system", named after Boehm, was based on the idea of being able to produce as many notes as possible with two different fingerings, in order to have options in the case of uncomfortable tone combinations / sequences.

After a brief transitional phase, Boehm clarinets became established from about 1850 onwards, first in France, then throughout non-German-speaking Europe and later in America and Eastern Europe. Regards its construction, the Boehm system has remained essentially unchanged in use up to the present day.

German clarinets



In 1860, the German clarinet virtuoso Carl Baermann (1811-1885) patented a new clarinet model together with the instrument maker Georg Ottensteiner (1815-1879). Essentially based on the romantic clarinet succeeding Iwan Mueller, it also adopted individual innovations of the Boehm system, such as ring keys or alternative fingerings for certain notes. Developed somewhat later than the Boehm system, the "Baermann clarinet" evolved in Germany and Austria towards the end of the 19th century into the highly complex "Baermann-Ottensteiner" clarinet. Although costly to make, it enjoyed great popularity. Richard Muehlfeld (1856-1907) should be mentioned as an outstanding musician on this type of clarinet. The sound of this clarinet influenced the compositions of the late Romantic period - hence the term "late Romantic" clarinet, which is commonly used in HIP.



The Baermann-Ottensteiner clarinet provided the basis for the later development of the Oehler clarinet, named after the German instrument maker and clarinetist Oskar Oehler (1858-1936).

The Oehler clarinet is still widely used in Germany today. It was also used in America at the beginning of the 20th century and in Russia and Eastern Europe until the 1950s.

Albert-clarinet / Simple system clarinet



At about the same time as Carl Baermann, the Belgian instrument maker Eugène Albert (1816-1890) developed his own model based on the Mueller clarinet. The instrument combined the traditional "German" fingering with a Boehm mouthpiece and its French dimensions. Although this clarinet was also modernised and technically improved over the years, it was used in orchestras only for a short time, mainly in England. This instrument became much more popular among folk and jazz musicians. Thanks to the relatively open sound and uncovered finger holes, the production of glissandi and blue notes was supported. From this point of view, this type of clarinet would be interesting today in the field of historically informed music-making for the performance of corresponding musical styles.

Around the turn of the 20th century, clarinet makers, often inspired by clarinetists, designed many other independent key systems: Mazzeo, Romero, the Pupleschi system, van Perck system, half-Boehm system, double-Boehm system, Schmidt-Kolbe clarinet, Clinton system, etc. None of these systems prevailed in the long run and thus they are mostly irrelevant within HIP.