Modern Alto, Tenor, and Bass Flutes

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Modern Alto, Tenor, and Bass Flutes[1]

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THE FLUTE is, perhaps, the oldest of musical instruments, and yet it has not developed a "family" of its type which has become permanent. Other types of musical instruments, such as the strings, brasses, reeds, and even the percussion group, are today represented by a variety of sizes of instruments of varying pitches and tonal characteristics. While it is true that several sizes of flutes are occasionally found in military bands, yet in the orchestra only the "concert flute" in C, and the piccolo in C are regularly employed.

Upon first thought it might seem, because the flute is sounded with breath from human lungs of limited capacity, that its type must be confined to instruments of moderate size. But human lung capacity is quite sufficient for the contra bassoon, the bass clarinet, and even for the ponderous contra-bass tuba; so it ought to be sufficient for a large flute in which the breath acts directly on the air column for the efficient production of tone.

In the sixteenth and seventeenth centuries, the flute used for musical purposes was the vertical, whistle flute called *flûte-à-bec* by the French, *flauto dolce* by the Italians, *Blockflöte* by the Germans, and *recorder* by the English. The recorders developed a numerous family, and were played in sets called "chests" because all the instruments of one set were kept in one box. The recorders in a set were of differnt dimensions and ranged in pitch from a high soprano measuring only ten inches (sometimes less) in length, to a contrabass more than eight feet long. Praetorius (1620) says that a complete set consisted of eight recorders of different sizes and that a recorder band numbered twenty-one players, and Burney (1773) describes a set of recorders contained in one chest, consisting of between thirty and forty instruments. Three specimens of the recorder family are shown in the illustration: Fig. A, bass, nearly thirty-eight inches long, with a bent tube to conduct the breath to the top; Fig. B, discant, soprano;

[1] The address was illustrated by means of a group of twenty ancient and modern instruments selected from the writer's historical collection of flutes, which now numbers nearly fourteen hundred specimens; sixteen of these flutes are shown in the accompanying illustration.

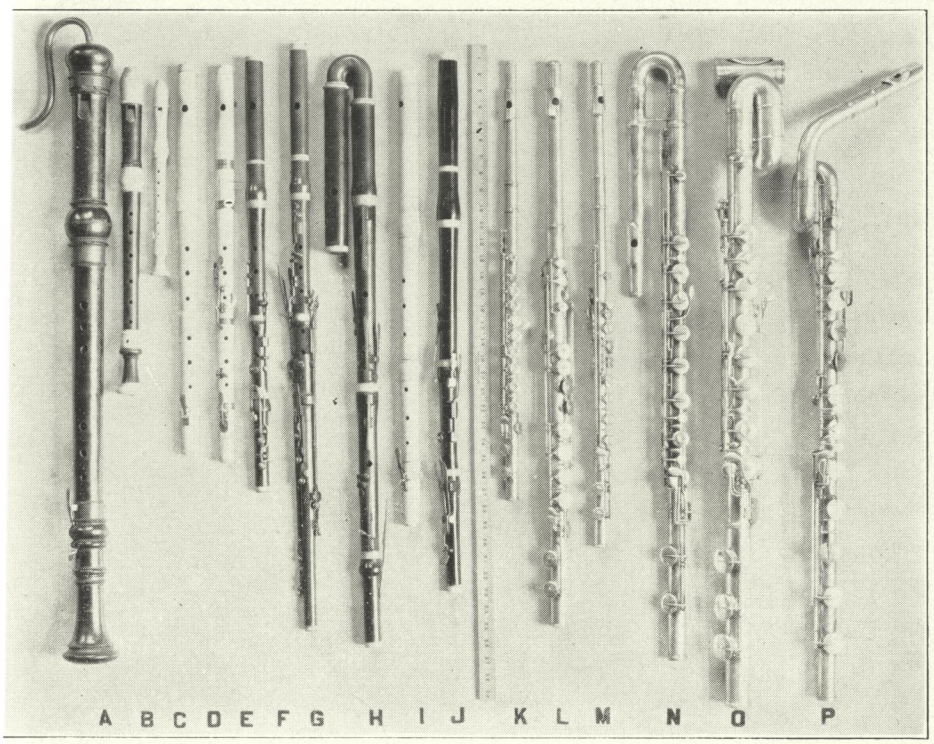

Fig. C, sopranino, twelve inches long. These instruments belong to the early eighteenth century.

In the scores of Bach and Handel, the word *flute* means the recorder. In the first half of the eighteenth century, the flute blown crosswise, or transversely, gradually displaced the vertical flute, and Bach and Handel occasionally wrote for the new flute, and designated it *flauto traversa,* or German flute. Handel in *Riccardo* (1729) uses the *traversa bassa,* and Philipp Emanuel Bach (1714-1788) composed a remarkable trio for viola, bass flute, and cembalo (figured bass), which in recent years has been performed repeatedly by the well-known flutist, Ary van Leeuwen. The transverse flute was then provided with only one key, Fig. D in the illustration. In the latter part of the eighteenth century, the adoption of the equally tempered scale called for additional keys to produce the chromatic scale, which required at least five keys, corresponding in effect to the five black keys of the piano keyboard, Fig. E.

The construction of the transverse flute, now commonly referred to as the "old system" or "ordinary system" flute, developed remarkably in the fifty years following Quantz, 1770 to 1820, during which time the modern keys were added until the flute was usually supplied with eight keys and sometimes it was loaded with seventeen or more keys. The eight-keyed flute in C, Fig. F, produces middle C of the musical scale for its lowest tone; for the purpose of securing deeper tones, the foot joint of the flute was extended, and Koch and Ziegler of Vienna made flutes descending to violin G, Fig. G. To produce the tone G, the right little finger must close three keys, the left little finger two, and the left thumb the two lowest keys of all. The longest key is nearly nineteen inches long, and the entire flute is more than thirty-five inches long. The conical bore diminishes to a diameter of about one-fourth of an inch, while the tone holes on the foot are even smaller. It is evident that the lower tones from such an instrument must be of very small volume and of very poor quality; also, the manipulation of so many keys renders the musical execution quite impracticable. Such extreme extension of the foot joint has been abandoned.

In the early history of the transverse flute, beginning with Agricola in 1528, there are accounts of larger flutes, flutes in B-flat, A, A-flat, G, F, E-flat, and in low C, one octave lower than the ordinary flute. These bass flutes disappeared in the seventeenth century, but the desire for the deeper-toned flutes did not cease and the makers

persisted in their efforts to produce practicable instruments. Some of these instruments were made with "recurved" heads, Fig. H, that is, with the tube bent back upon itself so as to bring the blow hole nearer to the finger holes. The finger holes were spread apart to secure better tuning and some of them were stopped by crude keys because the fingers could not span the reaches.

The name *flûte d'amour*, or *flauto d'amore*, has often been applied to flutes somewhat longer than the flute in C. The name properly belongs to the flute in A, a minor third below the flute in C. The instrument shown in Fig. I is an ivory *flûte d'amour* in A, made by Hirschstein, about 1750. It corresponds in pitch to the *oboe d'amore*. Both instruments were supposed to have a rich, mellow and fascinating quality of tone, which gave to their names the qualification *d'amour* or *d'amore*. In the time of Bach, both of these instruments were in favor in the orchestra, and now both are practically obsolete.

When Verdi composed the opera *Aida* for performance in Cairo in 1871, he conceived the "Sacred Egyptian Dance," the finale of Act 1, as being played by a group of three *flûtes d'amour*, and three such flutes were especially constructed in Milan. The flute shown in Fig. J is one of these exceptional instruments. In present-day performances of this opera, the music for the *flûtes d'amour* is usually assigned to other instruments.

In 1847, Boehm invented the flute with the cylindrical bore and "parabolic" head joint. He adopted the metal tube with large tone holes, all covered with keys, and developed his key mechanism of 1832 so that the keys could be effectively manipulated. The result of these improvements has been a complete revolution of the flute, now almost universally accepted. The flute shown in Fig. K of the illustration is a modern "concert flute in C," the normal flute of the present-day symphony orchestra. It is introduced for comparison with the other modern flutes being described, which have not yet come into general use.

Boehm, in his treatise, *The Flute and Flute-Playing*, says:

> The long-felt need for deeper, stronger, and at the same time more sonorous tones has not been satisfactorily provided for either by the former *flûte d'amour* or by the extension of the foot joint of the C flute, since the tones thus obtained are weak and uncertain, and their combination difficult and entirely impracticable. There must be created an en-

tirely new instrument in the family of flutes, of deeper pitch, similar to the basset horn and the English horn. As early as 1847 I had made flute tubes giving an easy and certain speech for the tone low E, but the difficulties connected with the construction and playing of the keys led me to choose the tone violin G as the fundamental of my new "alto" flute. My ideal of tone, large, sonorous, and powerful, admitting of every gradation from pianissimo to fortissimo, is the tone of my silver flute in G. Though I am now an old man of 78-½ years [this was written in 1871], the effects which are obtained are such that I regret that I did not make this flute forty years ago. A player will, after a very little practice, be able to bring out *genre* effects quite impossible on the flute in C.

The flute in G now exhibited, Fig. L, was made for the writer, in London, in 1900. The richness and fullness of its tone fully justify Boehm's description. The mechanism of the flute in G is just as reliable and the execution is just as certain and clear as with the flute in C. [Schubert's *Am Meer* was played on the G flute with piano accompaniment.]

For many years after this there were very few such flutes in this country. In the autumn of 1917, the Boston Symphony Orchestra included in its repertoire Ravel's second *Suite* from *Daphnis et Chloé* and for several concerts in Boston, New York, Brooklyn, and Philadelphia they borrowed this flute in order accurately to interpret the score. The flute was borrowed by them in several succeeding seasons when the G flute was called for. In November, 1921, a request was made a few days before a concert; at the time the writer was on a scientific expedition to Mount Wilson in California and the flute could not be sent. Following this, the orchestral management purchased for itself a G flute.

This same flute was also borrowed by the Minneapolis Symphony Orchestra when they gave the *première* American performance of Atterberg's *Ocean Symphony* in March, 1922, and by the Cincinnati Symphony Orchestra and also by the Cleveland Symphony Orchestra for several concerts. Now the principal makers provide such flutes, and a number of flutists (not a large number) possess G flutes.

Notwithstanding its beautiful tone quality and its satisfactory mechanism, the flute in G is but little used, and is hardly known in the musical world at large. Modern orchestral composers occasionally call for this instrument in their scores. Parts for the flute in G are found in the following compositions: Atterberg, *Ocean Symphony*, Op. 10; Bax, Symphonies; Hahn, *Ballet;* Holbrooke, *Children of Don*

and *Dylan;* Holst, *Fantastic Suite* and *Saturn* from *The Planets;* Mahler, Symphonies; Pfitzner, *Palestrina;* Ravel, both *Suites* from *Daphnis et Chloé;* Rimsky-Korsakov, *Mlada* and *Ivan the Terrible;* Schmid, *Joseph and His Brethren;* Stravinsky, *Le Sacre du Printemps;* Weingartner, *Das Gefilde der Seligen* and *Orestes.* Other composers who occasionally call for the flute in G in their scores are: Tcherepnin, Coates, Glazounov, Poldowski, Stanford, Richard Strauss.

Following the success of the flute in G, several experimenters have made still larger flutes on the Boehm system, extending a full octave lower than the concert flute. A flute of this size would be a real bass flute in C.

At the Paris Exposition of 1900, there was a remarkable display of flutes by various makers, numbering nearly five hundred specimens of all kinds. These ranged in size from a diminutive piccolo in high A, about six inches long, to a bass flute five feet long. There were four bass flutes in C, of different models. One flute was supported at its lower end on a tripod stand similar to the common metal music rack. On all of these bass flutes the tone holes were far out of reach of the fingers, and the keys were manipulated by long extension rods. The speaker tested each of the bass flutes; the keys were closed with difficulty. While one instrument was being tried, its maker stood by and used his two hands to press down certain keys as required to secure closing; even then the tone was produced with difficulty.

Another bass flute had the head joint recurved, or turned back by the side of the body tube, Fig. N, bringing the embouchure nearer the keys and diminishing the extensions required for the mechanism. However, none of these flutes was practicable for musical performance.

In 1910, Professor Abelardo Albisi (deceased in January, 1938), the eminent first flutist of La Scala Theatre of Milan, Italy, devised the "Albisiphone," Fig. O, a bass flute in C, which demands serious consideration from the musical point of view. The lowest tone of this instrument is B-natural on the second line of the bass staff, and the compass is two and a half octaves.

In order that the mechanism might come within practicable reach of the hands, Albisi adopted a design in which the body of the instrument is held vertically and the extension is shortened by means of a double U-tube between the embouchure and the tuning slide; the embouchure is a short horizontal tube, blown transversely. The

effective length of the air column for the low C is fifty inches, and the diameter of bore is about one and one-half inches. The fingering is that of the regular Boehm system.

When Albisi demonstrated his new flute in Milan and other musical centers, it received the enthusiastic commendation of many eminent composers, among them being Mascagni, Puccini, Leoncavallo, Boito, Giordano, and Giannetti, and several of these have written for the Albisiphone in operas and symphonies. Among the operas are *Melenis* (1912) and *Francesca da Rimini* (1914), by Zandonai, and *La Parisina* (1913) by Mascagni. The Albisiphone here exhibited, Fig. O, is the actual instrument used by Albisi himself in the first performances of these operas. An *Adagio* has been especially composed for the Albisiphone and string quartet by Giannetti, which has won much praise for the new instrument.

The Albisiphone has been used in other countries with conspicuous success. Julius Schlosser, the musical authority of the Kunsthistorisches Museum of Vienna, reports that the instrument was used in the orchestra upon the production of *Der Sonne-Geist*, a colorful symphonic work by Klose, in Vienna, in 1919. He says: "I can myself assert that the effect was astonishing. The tone is particularly round and full, almost horn-like, yet possessing its own distinct character. Certainly the instrument meets all the demands of technique and execution, and its use can bring only satisfaction when in the hands of a master, such as Ary van Leeuwen, at this Vienna performance."

In the experience of the writer, the Albisiphone blows very easily, its tone is full and rich; perhaps it would be lost in the mass of tone of an orchestra. Its place seems to be in solo parts and in chamber music. It is remarkably effective in such music as Mozart's *Clarinet Quintet*, the Kuhlau Adagios, and Donjon's *Invocation* and *Adagio Nobile*.

In England perhaps more than in any other country, there has developed an interest in flute bands and flute clubs. Such groups give formal concerts and often are heard over the radio. This has brought into prominence flutes of several other sizes, as the E-flat flute (above the concert flute, like the E-flat clarinet and E-flat cornet) and the B-flat flute, one tone lower than the concert flute. The B-flat flute shown in Fig. M is almost unknown in this country; the writer would be glad to learn of other modern instruments now in use.

The C flute and the B-flat flute are tonally related about as are the

C clarinet and the B-flat clarinet. It is the writer's deliberate opinion that the B-flat flute should largely supersede the C flute for symphony and chamber music, since the former possesses the fuller and richer tone quality and is more expressive. The C flute should be reserved for such parts as are of a decorative or "filigree" style of composition, in which daintiness is of more importance than tone color. [An *Adagio* by Loeillet, composed about 1690, was played on the B-flat flute, with piano accompaniment.]

There has been no accepted nomenclature for the flutes of various sizes. The term *flûte d'amour* usually refers to the flute in A, but it is also sometimes applied to flutes in A-flat or in G. Boehm called his flute in G the *Alt-flöte*, alto flute, but this instrument has frequently been called a bass flute. Flutes in low F and E-flat have been made and referred to as tenor flutes. The only established designations are concert flute in C, and bass flute in C pitched one octave lower. Music for all the flutes is usually written on the treble staff; the concert flute in C would sound as written, the orchestral piccolo in C would sound an octave higher than as written, and the bass flute in C would sound an octave lower. The other flutes would transpose in the normal manner.

The most recent development of the modern flute is a new model of the bass flute in C, which is wholly practicable as a musical instrument; it has a beautiful, full tone, with adequate carrying power. This instrument, developed in England, Fig. P of the illustration, has been in use there for several years, but so far as known, the specimen here exhibited is the only one in this country. By means of double, adjustable U-tubes and a special "crook," the head joint of the usual form is held horizontally and is blown crosswise, while the body is held diagonally downward in a position which is very convenient for the manipulation of the keys. The tone is produced with the same ease and control as with the concert flute in C, and is of good quality throughout the entire compass of three octaves, beginning with the tone C on the middle space of the bass staff.

The recorder had a beautiful mellow quality of tone but it was practically impossible to increase the volume or to vary the quality; its compass was limited and accurate tuning through even the contracted compass was impossible. These characteristics account for the fact that these instruments have, for the most part, been superseded in the musical world. The modern flute is much more expres-

sive, its intonation is quite correct and it is capable of voicing the sentiments and emotions of present-day composers.

Flutists, by means of flute clubs and chamber music groups, should enthusiastically develop the flute choir now available, consisting of the bass flute in C, the flutes in low G and B-flat, and the usual concert flute in C. To this quartet there should be added the little-known but very effective flute in E-flat, a minor third above the concert flute. It is even suggested that in a quartet of flutes the flute in E-flat might replace the flute in C.

Composers may well give attention to the new low-voiced flutes, and very musical voices they are. When composers and players will have taken advantage of these sounds, then the much larger number of charmed auditors will applaud, and the glory of the flute will be greater than ever before—a glory merited by its genuine musical character.