

Big Beasts

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It was in the later Middle Ages and Renaissance that the idea grew up for the use of families of homogenous instruments, such as recorders from *gar klein* three inches long, down to a great contrabass over eight feet long, each sounding the appropriate C for that length.

It may be that the idea grew from the church choir, with boy trebles, male altos, tenors, and basses; again a homogenous sound, for the boy's treble voices match other male voices better in tone than girls' or women's voices do. There is a slight but perceptible difference in tonal quality between a mixed-gender choir and a male-voice choir, even when the female voices are young. There may of course have also been other reasons for the clergy's preferences for boys.

Thus we see some such families in the pages of Virdung and far more in those of Praetorius, with great bass shawms, contrabass trombones, great bass viols and violins, archlutes, and so on. Many of these are being revived today to play the music of these periods, for a few of them have survived, providing models for makers to copy them – not that many, for large wooden tubes burn well in winter. There was even a bass cornett, two of which survive in Paris, though how common they may have been elsewhere we do not know. The serpent, whose voice was only ever a baritone, was not a member of the cornett family, for it was a wide-bore instrument and was never associated with cornetts; in those days it was still a church instrument and lived with singers.

These extra low instruments seem to have died out in the Early Baroque, with even the violin family's double bass being comparatively rare – the bass violin that became our cello often being the lowest. Why this should have been so we do not know. For example, in the High Baroque we have many bass recorders but not a single contrabass. We have many sackbuts, altos and tenors, but few basses until their reappearance in the Classical period, and no contra-

basses until Wagner called for their return in *The Ring*. The whole family of shawms, from treble to great bass, disappeared entirely, but this was due to its incompatibility with the quieter instruments that became the orchestra; shawms survived only in the folk world, where they still thrive today, along with their cousins the bagpipes, for a shawm in a bag is still a shawm.

There were some new introductions: there arrived a group of low oboes, for the oboe had supplanted the shawm, two altos called the oboe d'amore and the vox humana (though we have little knowledge of the life of the latter – it has been suggested that it may have been purely a military alto), and three different tenor oboes, one looking like a larger oboe, one with a bulb bell like that of the oboe d'amore, and one with a flared bell, often of brass, called the oboe da caccia. We have parts in Bach's music for the d'amore and caccia, but how the others were used we have little idea. There was, too, a new family, the bassoons, which replaced the curtals, aka dulcians. We can see the first adumbration of the bassoon in the pages of Mersenne in 1636, a change from a one-piece instrument with a bore going down from the crook to the bottom of a single piece of wood and then coming back up again to an instrument with a separate joint, greatly easing its construction. Its development seems to have been quite rapid, for we have music for bassoons well before the end of that century. We have also the contrabassoon. Handel wrote for it, and that same instrument survives in Dublin. This was a true octave contra, even though in the later seventeenth and the eighteenth centuries a quart-bass was more usual, with such exceptions as in Haydn's great oratorios. The octave contra reappeared in the nineteenth century.

Handel also used to borrow a pair of double drums from the Train of Artillery. These were timpani about twice the diameter of the normal kettledrums of his time. There is a pair in the Royal Armouries in Stockholm, but the only playable pair I know of is in my collection, and I used them, as Handel asked, in a performance of the Fireworks Music with two pairs of normal size. I used them, inappropriately because they were not supported by smaller ones, once in a couple of his oratorios, one of them a Messiah on the tercentenary of his birth in the Sheldonian. Double drums only existed because artillery were drawn by teams of horses with a gun carriage between the horses and the guns. Cavalry

regiments carried their timpani on one of their horses, but there is a limit to what a horse can carry, so the drums had to be small, whereas there was little limit to what a horse-drawn chariot could bear.

The bass drums, too, were enlarged, wider in diameter than the normal military drum and twice the depth. One that was made in a cottage in Devizes in Napoleonic times was so large that they had to play it inside the cottage while the rest of the village band marched round outside; it was built in the cottage and then they realised that it would not get out of the door. It was extracted eventually and is now in the Salisbury Museum. An even bigger one was made by Distin for a mid-nineteenth-century Handel festival. Its head was the skin of a prize ox and it survived into the 1960s when at last it was broken up because nobody had the space to accommodate it.

The organ began small. In the Middle Ages a four-foot C (one octave below middle C) was probably about as low as pipes got, or maybe a five-foot G (bottom line of the bass clef), around the lowest note of an average bass voice, with only two-foot for the portative. But eight-foot Cs followed as did ten-foot Gs and in the Baroque a sixteen-foot C became normal. In the nineteenth century the thirty-two-foot C was common, and I was told by the man who tuned the organ in St Paul's Cathedral that those pipes were wired into their sockets to withstand the wind pressure and prevent them taking off like moon rockets. Even a sixty-four foot rank does exist in some organs, though makers can cheat in this respect by stopping the end of a thirty-two foot pipe and so making it sound an octave lower than it would normally do so. Put very simply, the air goes up to the stoppr at the end and then comes down again, so doubling its length, something that is only characteristic of the flute family – it doesn't work for reeds nor for brass – for many organ pipes are versions of the duct flute.

The great bass violin, our double bass, became more customary in the Classical period, though it seems not have had separate parts to play until Beethoven wrote separate cello and bass parts – we really do not know to what extent it otherwise played an octave below the cellos. It seems unlikely that it scrambled through some of Mozart and Haydn's cello parts, as we so often hear nowadays,

and it is much more probable that its players simplified them to significant notes, something that we might really prefer to hear today.

It was, though, in that period that other instruments began to flex their muscles, extending their range below the norm. Examples are the bassett clarinet, alto clarinet, and bassett horn, the first extending its range down to C from the normal, the second being a true alto but of normal range, and the third being again a narrower-bore alto but with an extended range to C. There was too an alto flute and even occasionally a bass.

It was at the end of the eighteenth and in the early nineteenth centuries that things really began to grow. The contrabassoon began to be more often heard, for example in Krommer's wind band music. Bass clarinets began to appear in military bands and so did serpents along with a number of more easily portable replacements such as bass horns under a variety of patent names such as Russian bassoons (neither a bassoon nor Russian but just a close-folded serpent variant) and then soon ophicleides. All these were eight-foot brass basses; even after valves for brass instruments were invented in the early nineteenth century, when in 1835 Moritz produced the first bass tuba, it was no lower than twelve-foot F, and more commonly still in eight-foot C and nine-foot B flat.

One of the problems for the lower woodwinds such as bass clarinets and contrabassoons, and also serpents and their offspring, is the span of the human hand. Serpents, even with their sinuous curves, had their fingerholes far too close together for good tuning – players had to lip notes that were naturally out-of-tune into their proper pitches. This was a second reason why all the various types of bass horns and patent serpents were folded: one for portability and the other so that finger and thumbholes could be placed on both upward and downward bores. Bassoons had always been folded for that reason, as had their ancestors the curtals. Early contrabassoons had to have long key-levers to allow the fingers to cover holes that were far out of reach of the hand, and these were inherently inefficient. It was only when Boehm developed his first flute system in 1831 with rods and axles that low bass woodwinds really became practicable. The tenor oboe came back into use, though only the one with the bulb bell, which became the cor anglais (neither a horn nor English – it is thought that perhaps

because some were bent with a knee joint, rather than curved in sickle-shaped, that they were therefore first called *anglé*), followed by a baritone oboe, though that was often called a bass oboe. Bass clarinets thrived and even contrabasses were made. After Boehm's 1847 flute system appeared with plates to cover the wider holes of that system, some bassoons were made in that model with a wider bore and larger fingerholes, not very successfully because they didn't really sound like bassoons – too bland and too loud (like Boehm-system oboes), but they were followed with contra-size versions such as the contrabassophone with a tone quality like that of an ocean liner coming up Southampton Water in a fog.

Brass basses were more successful, and this was Wagner's doing. He demanded a bass trumpet; he asked for lower horns to come between horns and tubas, resulting in the Wagner tuba; he insisted on a contrabass trombone – how else could Wotan's spear be properly represented in the music? And an essential was the true bass tuba in sixteen-foot C or eighteen-foot B flat. With valves of course there was no problem with hand-span, but tuning was so bad, especially in the bass notes when valves were used in combination, that five or even six valves were often fitted to avoid such combinations.

Many makers got into the act, showing off their ingenuity in getting bigger and better. Adolph Sax was one, producing brass basses of all sizes and all families, wide bore, narrow bore, medium bore, and the reed basses such as the bass and contrabass saxophone. Sarrus tried to rival him with brass oboes that he called sarrusophones again down to contrabass, though the wider bore *contrebasse à anche* by makers such as Mahillon was more successful and is still made for brass bands – it has a bit more bite to the sound than a tuba. In the twentieth century Leblanc made contrabass clarinets and even an octobass, though it is said that only one of those was ever made. Here the demand came from the film studios, where new effects are always in demand, perhaps even more for television advertisements than for feature films, for how better to catch the ear for a better washing powder or soup than to use a new sound?

Brass instrument makers, too, wanted to catch the eye as well as the ear by inventing new ways coil their tubing, with tubas in bugle shape, trombones

aiming back over the shoulder, tubas sprouting upwards (unpopular, that one, because it could fill with rain until Sousa asked for a second bend to face the bell forward), and then the giant tubas. I never tried to measure the one that Paxman had in his shop to see if it really was thirty-two foot long or whether it was just twice the normal thickness. One amateur maker in Huddersfield, back in the nineteenth century, even made a contrabass serpent and it is still thriving in America, as is its brother that Christopher Monk built.

Big beasts are ever with us.

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