

# Four Voices of the Bronze Age Horns of Ireland

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## 1 ORIGINS AND SURVIVAL OF THE PREHISTORIC INSTRUMENTS

The bronze horns of Ireland have their origins in the Middle to Late Bronze Age. They were made and played throughout the island from 1100 BC to 700 BC approximately. The earliest Irish examples may have been made as far back as 1500 BC. Profound research suggests a gradual evolution of manufacturing and design expertise starting in the North East of Ireland and spreading across the country to the South West where the most complex instruments were found (Holmes 1978).

One hundred and four Irish horns are known to exist today (Coles 1963) and there are reports of at least another ten that were found and then subsequently lost or hidden. Thus, the Irish horns of the Bronze Age are the largest surviving family of pre-Renaissance musical instruments in Europe.

## 2 DESIGN AND CASTING OF THE IRISH HORNS DURING THE BRONZE AGE

The horns were cast using a two part mould with a central core held in place by bronze pins or "chapettes". Advanced bronze welding was used to attach rings and mouthpieces to complete instruments or to effect repairs in the event of damage occurring (Holmes 1978). The bronze casters using these techniques were able to produce instruments of such lightness and fineness as to be unmatched by any bronze casting today.

The artistic and acoustic properties of the horns have yet to be fully researched and understood. However, by looking at the variety and design perfection of all 104 instruments with a creative and scientific approach, it becomes clear that there is much more involved in them than meets the eye.

## 3. DISCOVERY OF THE MUSICAL SECRETS OF THE HORNS

Due to the unusual nature of the Irish Bronze Age horns, serious investigation of any musical qualities they might possess only commenced in the later half of the 20<sup>th</sup> century. The fundamental notes and some relatives of most of the surviving instruments were established in the 1960s (Coles 1963). The first conclusion was that the horns had a more important role as show items with the musical content being relegated to a lesser function. Then, in the 1970s, it was decided to try another line of inquiry by comparing Irish horns to the recently introduced didgeridoo of Aboriginal Australia (Holmes 1978). However, only limited access and exploration could be undertaken on the horns until, in the late 1980s, the first replicas were cast. It was then possible to actively learn playing techniques and attempt to compare and integrate horns with the instruments and music disciplines which exist today.

In February 1994, the author was invited by the National Museum of Ireland to make recordings of eight original horns from various locations around the country. Seven instruments were carefully recorded and photographed in a six hour session at the Museum. It was decided that the eighth horn was a little too fragile to play. While it was very exciting to hear sounds that had last been heard 3000 years ago, there was always an underlying fear that any one of these delicate instruments could be damaged. In the event they all played beautifully and there were absolutely no problems.

But one of the common features of European musical instruments from the prehistoric Metal Ages is the absence of any written or oral music tradition to accompany them. Therefore all the interpretations today applied to these instruments are in effect products of exploration, experimentation and imagination.

In Ireland we are very fortunate to have surviving and indeed thriving, a rich musical and song tradition which reaches back to the Iron Age and

may indeed have its roots in the Bronze Age or earlier. Thus, the suitability of bronze horns when played in this tradition could be seen as a good indication of their merits as musical instruments. Until recently there appeared to be an incompatibility between horns and modern traditional music. A dominant feature of Irish music is an inherent complex melody structure where a tune is composed of series of many notes which are played in repeating sections. The rhythms that underpin these melodies are equally complex and intricate but are supplied mainly by melody players. Percussion is frowned upon by many musicians, and exponents of the only Irish drum, the *bodhrán*, often are not even recognised as musicians in their own right. Thus, an inability to play melodies on a bronze horn should automatically exclude it from the tradition. However, when viewed from a rhythm point of view the horns take on a different and new set of colours.

Irish horns are unusual in that as part of their configuration is a large open mouthpiece, either at the thinner end of the tube or on its side (cp. fig. in J. Purser's paper; this publication). At first this was perceived to prohibit playing, and so inserts were experimented with. It has since been discovered that by its nature the open mouthpiece allows a player to produce a variety of notes, sounds, tones and colours which when combined in the hands of an expert can make a powerful and rich music.

Experiments up to date have unearthed four distinct voices in the Irish horns. These can be categorised as: a) *Fundamental note and relatives*; b) *Tone alteration*; c) *The human voice*; d) *The overtone series*.

#### a) *Fundamental note and relatives*

As with all lip played wind instruments, the notes which occur in the Irish horns are governed by the length and shape of the instruments. Most have a fundamental note and one or more relatives depending on the size of the horn. Many have been found to be in a relative tuning with others from around Ireland very much as the instruments of an orchestra today are tuned to concert pitch. Also, because of the large open mouthpiece, the note is created in the entire length of the instrument. This gives it a depth and richness and also allows the use of circular breathing which enables the player to make a continuous sound for any length of time.

Because the Irish horns occur in such a wide variety of sizes, each one possesses its own playing properties. If a number of them are played together, particular instruments take their place in the overall sound spectrum. The larger end-blown horns from the south of the country are more

suited to circular breathing and fulfil an excellent bass drone backing while their smaller northern counterparts maintain the middle of the spectrum. The higher sounds can be supplied by the side-blown instruments which are more adapted to play intermittent notes that can be altered and bent by moving a hand in and out of the bell. Many of these in complimentary keys when played alternately together produce complex melodies. Thus an orchestra of many horns would be perfectly capable of playing powerful and complex compositions.

#### b) *Tone alteration*

Part of the playing method of the Aboriginal didgeridoo is the use of the lips, tongue, mouth cavity and air pressure to alter the tone of the continuing fundamental note. When applied to bronze horns, a remarkable variety of tone alteration from bass through to treble can be achieved, thus giving the otherwise simple fundamental a complex and intricate colour variation.

#### c) *The human voice*

Another common practice among didgeridoo men is the use of the players' own voice in conjunction with the sound of the instrument to enrich the tune being played. The voice may be used either to sing a relative to the fundamental of the instrument, thereby creating a "chord" or as an intermittent rhythm effect to add to the complexity of a tune. Aboriginals also use the voice to emulate the sounds of animals and birds through the fundamental note. The horns, have shown themselves to be particularly sympathetic to the use of the voice and can be made to produce wonderful full chords. This may be due to their being made of cast bronze, thus possessing many of the harmonic qualities of a bell.

#### d) *The overtone series*

This particular aspect of the Irish horns is probably their most unique and exciting property.

Some music traditions are possessed of the ability to create an overtone series in conjunction with the singing voice. This is achieved through careful positioning of the tongue relative to the roof of the mouth which accentuates the overtone harmonics of the note being sung. Thus what appears to be a collection of higher notes becomes evident in the sound. When this procedure is applied to the Irish horns, a similar effect can be achieved. This is surprising when one considers that in the case of overtone singing the note generator is behind the overtone creator, i.e. the voice box is behind the tongue in the mouth. With the horns the 'voice' is in front of the overtone generator, i.e. the vibrating lips are beyond the tongue

and mouth. However, the same basic method is applied with a similar result.

The term *tune* can be interpreted to mean a continuous variation of rhythm, notes and tones played for a certain length of time which holds the attention of a listener and evokes in him or her certain moods and feelings. In our ancient Irish tradition and language music is described in three ways, *ceól geanntaí*, *ceól goiltrí agus*, *ceól suantrí*; the music of happiness, the music of sadness and the music of sleep.

By clever and creative use of the voices of the Irish horns all the requirements of a musical listener can be satisfied, and rich and varied tunes can be composed and played. Thus it is probably certain that players of these instruments during the Bronze Age had themselves a fine musical tradition which, had it survived, would still be enjoyed by their descendants and may have in no small way influenced the living traditions of today.

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b

Fig. 1 Simon O'Dwyer blowing replica of Irish Bronze Age horns. Crimlin, Corrna M6na, Co. Galway, Ireland, August 1998: a. Side-blown instrument; b. End-blown instrument; Photographs: Leonard Zinn.