

LIP-BLOWN INSTRUMENTS OF IRELAND BEFORE THE NORMAN INVASION

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It is generally assumed that metal lip-blown instruments were introduced into Europe by the Arabs and Moors during the Middle Ages as the result of the Crusades and other belligerent contacts. This assumption requires subscribing to the belief that, with the fall of the Roman Empire, all knowledge of the manufacture and use of lip-blown instruments, such as the Roman tuba and comu or the Gallic carnyx, was lost in the turmoil and destruction of the Dark Ages. Serious doubts have been cast on the concept recently, most notably by Don Smithers.¹ The arguments have been presented in a quite persuasive manner. However, what has been missing to date is "test-case" evidence from a part of Europe in which there can be shown a continuity of manufacture and use of lip-blown instruments throughout the period under scrutiny, and whose history shows that:

- 1) they remained outside the Roman Empire;
- 2) they were cushioned from the events of the Dark Ages that followed the fall of that empire in the west;
- 3) they did not participate in the early confrontations between Christian and Muslim.

One such example is actually to be found on the fringe of Western Europe, namely, Ireland. Aspects of Ireland's testimony have been mentioned briefly in various texts, but much misunderstanding and misrepresentation has accompanied and clouded the clarity of that evidence. What follows is the first stage of an attempt to dispel some of those clouds by bringing into clearer focus the material riches preserved in Ireland from its long-lasting cultural independence.² Because many readers may be unfamiliar with Ireland's prehistory and early history, short overviews of the historical situation are also included as appropriate to provide a context for the instruments described.

1. THE LATE BRONZE AGE

Ireland has been inhabited since the arrival of Mesolithic hunter-gatherers, ca. 7000 BC. Farming became established ca. 4000 BC during the Irish Neolithic period, and the construction of the massive megalithic tombs at Newgrange, Knowth, Dowth (all in County Meath) and elsewhere attests to the emergence of a powerful ruling class and surplus wealth ca. 3000 BC. The advent of the Bronze Age ca. 2500 BC brought with it much technological and societal change that is reflected in the surviving artifacts and in the archeological evidence of ancient settlements, land-use patterns, and ritual centers. The boglands began to expand at this time, and these have played an important role in preserving much of the evidence. It is during the Irish Late Bronze Age (1000 - 300 BC) that the earliest metal lip-blown instruments appear. They are made of bronze, but both their shape and aspects of their decoration point to antecedents made of organic materials. As most of the instruments

are either entirely conical or mainly conical they will be considered as horns, following a convenient modern convention.

A remarkable number of bronze horns survive. At least ninety complete or fragmentary instruments are preserved out of a total of more than 120 reported discoveries. The earliest recorded find was made in 1698 at a burial mound near Carrickfergus, County Antrim:³ many of the finds were made during the eighteenth century, and were published in journals and books which showed an antiquarian interest in what had by then become an all-but-destroyed Celtic culture. Because the horns were considered collector's items, many were placed in private collections and have subsequently found their way into modern museum collections. Comparison of the early descriptions with surviving instruments shows a consistent and impressive degree of accuracy and allows reports of now-lost horns to be taken into consideration also.

The horns were usually found in hoards, occasionally associated with other artifacts. The Dowris, County Offaly, hoard was discovered in 1832 and is the largest of these. It included twenty-eight horns as well as axes, swords, spearheads, crotals, and hammered bronze buckets and cauldrons. This hoard may date from the seventh century BC. Another hoard found at Booleybrien, County Clare, which also included a horn, seems to have been deposited slightly earlier. On the other hand, a horn fragment found at Lough Gara, County Sligo, may date from as late as 300-200 BC. This indicates a long period of use for the instruments. Ritual deposition seems to be the rule, perhaps associated with a cult of bull worship, and the hoards tend to be located near burial mounds and ancient earthworks or under lakes and bogland that was formerly under water.

John Coles listed the Irish horns and classified them according to their geographic location in his important study of 1963, which forms the basis of much of the following.⁴ There are two types of horn: "Class I" and "Class II." Class I horns are found in the northeast of the country and Class II instruments are concentrated in the southwest. Both classes of horn were found at Downs, in the center of the country.⁵ Each class is divisible into two groups, side-blown horns and end-blown horns, according to the placement of the mouth-opening on the instruments. The forms of these horns and also the decorations on them betray their origins in organic precursors of which the two-dimensional curved horn of the *bos longifrons* is the most important factor.

The body of a Class I side-blown horn may be either plain or ribbed. The bell also may be plain, or may have ribs, grooves, zigzags, domes, spikes, or even rope-moulding. The narrow closed end may be flat or knobbed. Two loops are usually found, one on the closed end and the other near it, and a few of the loops have rings cast within them (Figure 1, top).

The body of a Class II side-blown horn is plain. The bell usually includes cast conical projections and sometimes four holes. The narrow closed end is in the shape of a stepped pyramid. Two loops are found, one on the closed end and the other near it, and most of these carry cast rings (Figure 2).

The two classes of side-blown horn share many common features. In particular, the oval mouth-opening is always made so that the instrument is played either with the bell pointing upward and to the left or downward and to the right, even when horns are paired. Detailed



Figure 1

Drumbest Class I side-blown horn (top) and Phase III Class I end-blown horn (bottom) (Photograph reproduced with kind permission of the Trustees of the Ulster Museum)



FIGURE 2

Chute Hall Class II side-blown horn (Engraving from R. Day, "Irish Bronze War Trumpets," *Journal of the Royal Historical and Archaeological Association of Ireland*, 4th series, 3 [Dublin, 1875], fig. 1)

investigation of the two identical Drumbest, County Antrim, Class I side-blown horns indicates that the latter mode of performance is more likely.⁶ The Drumbest side-blown horns are among the largest side-blown instruments, being 73 cm along the convex surface; other horns range between 60 and 100 cm in length. The outer diameter at the bell of the Drumbest horn is 7 cm and the tube narrows to an outer diameter of 2.9 cm at the closed end. (The metal thickness is of the order of 0.2 cm.) The axes of the oval mouth-opening are 4.7 by 2.5 cm. It is usually stated that some organic insert must have been included, but the smoothness of the edges of the mouth-openings, the presence of slightly raised rims on three of the other horns, and "hands-on" practical experience all indicate that no other aid is required.

Little connection between the two classes of end-blown horns is found, apart from a common organic precursor. A developmental process for the Class I end-blown horns may well be indicated, according to the following parameters:

- 1) their physical appearance,
- 2) the decoration found on their outer surface,
- 3) the degree of sophistication of their manufacture.

However, in the absence of specific dates for the instruments, this proposal must remain speculative in nature.

In the earliest phase, Phase I, the instrument survives as an expanding bell section shaped like the letter **L**, in which the change from the curve to the straight part is often marked by a ribbed decoration? The body may be plain or it may include ribs, domes and one or two loops. The bell may be plain or may be decorated with ribs, grooves, zigzags, domes, or spikes. The arrow end includes an inserting flange. The bell section of a now-destroyed, but representative, horn from the Downs hoard expanded from 2.5 cm at the narrow end to 6.2 cm at the bell over a concave length of 54 cm, ignoring the inserting flange at the narrow end (Figure 3).

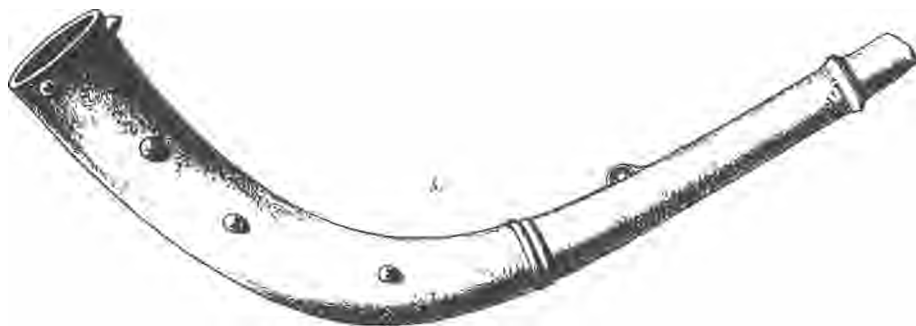


FIGURE 3

Dowris hoard phase I Class I end-blown horn (destroyed) (Engraving from J.M. Kemble, *Horae Ferales* [London, 1863], pl. XIII, fig. 5)

That the inserting flange of the Phase I, Class I end-blown horn may have been placed inside a short cylindrical mouth-tube made of organic material is indicated by the instruments of the proposed second phase of development. In these Phase II horns, the short mouth-tube is made of bronze. It is cylindrical and approximately 16 cm long, excluding the enclosing flanges found at both ends. Four metal mouth-tubes survive, although not in association with any particular surviving bell section. The enclosing flanges are slightly

flared and include two holes made either during casting or drilled afterwards. Organic material was presumably used to plug the holes and to make the joint between the bell section and the mouth-tube airtight. The presence of an enclosing flange with holes at the other end may indicate that an organic mouth-rim was added there (Figure 4).

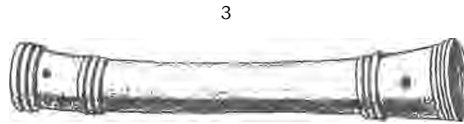


FIGURE 4
Dowris hoard Phase I Class I end-blown horn (destroyed) (Engraving from Kemble, *Horae Ferales*, pl. XII, fig. 3)

Some indication of the form of the postulated organic mouth-rims of the earlier phases may be found in Phase III, from which two instruments survive, an identical pair found at Drumbest, County Antrim in 1840 together with an identical pair of Class I side-blown horns mentioned earlier. Two others are now lost, one found in 1725 at Maynooth, County Kildare,⁸ and the other discovered before 1786 near Battle in Sussex, England.⁹ Phase III, Class I horns include a slightly curved cylindrical bronze mouth-tube cast-on over the inserting flange at the narrow end of the bell section, making them the longest single-piece horns. The Drumbest end-blown horns are 89 cm long, measured along the surface with the convex expanding section. The circular bell is of outer diameter 7.0 cm and narrows to an outer diameter of 2.6 cm at the inserting flange. (The metal is approximately 0.2 cm thick.) The cast-on cylindrical mouth-tube is 19.5 cm long, measured along the same surface. The mouth-tube begins to flare at 1.2 cm from the open end and results in a flat oval mouth-rim with outer axes 3.6 by 3.3 cm. (Figure 1, bottom).

Unlike the Class I end-blown horns, no Class II end-blown horn survives complete. Class II end-blown horns are also constructed differently and consist of two sections of bronze. The bell section, more-or-less semicircular in shape, is typically around 9 cm in diameter, narrowing to a diameter of 4 cm at the other end, which includes an enclosing flange. Cast conical projections are usually found at the flange, which often has four holes set as opposing pairs. Cast conical projections are often found at the bell. The bell usually has four holes if it is straight, but these are normally absent if the bell has a small additional flare at the end. (Compare the two bell sections of Figure 5.)

A separate straight cylindrical tube comprises the second section of the Class II end-blown horn. This tube has an inserting flange at each end and four holes in each flange. Ribs and cones are found at the flanges and also at the center, which includes a loop with a cast-

on ring.



FIGURE 5

Chute Hall Class II end-blown horn with mouth-tube (assembled) (top), and Class II end-blown horn bell section (Engraving from Day, "Irish Bronze War Trumpets," figs. 3 and 4)

An unusual feature of many of the finds is the presence of twice as many bell sections as cylindrical tubes. However, the placement of the holes in the enclosing and inserting flanges has enabled four bell sections to be associated with four cylindrical tubes. In no instance has it been possible to identify a composite consisting of a straight tube with a bell section at each end; it may be the case that organic tubes were employed on half of the Class II instruments and bronze tubes on the rest. The two sections were held together by organic plugs and the joint was made airtight by filling with other organic material.¹⁰ When assembled, the length of the Class II end-blown horn is slightly over one meter, of which almost half is cylindrical. The presence of inserting flanges at both ends of the cylindrical tubes indicates that an additional organic mouth-tube, probably similar in form to the cast-on mouth-tubes on the Class 1 end-blown horns, was attached to complete the instruments. The assembled instruments are J-shaped (Figure 5, top).

Class I deposits usually include one end-blown and one side-blown horn: the Drumbest find unusually consisted of pairs of identical end-blown and side-blown horns. Class II deposits usually include one side-blown horn, two end-blown bell sections, and one cylindrical tube. The major exception is the Dowris hoard, which included ten Class I side-blown horns, nine Class I end-blown bell sections, three Class I end-blown mouth tubes,

and six Class II end-blown bell sections.

The independence of the Irish Late Bronze Age horns from their continental equivalents and their different manufacture have both been misrepresented to date. Despite Coles' careful assessment of them as at least contemporary with lurs and Wismar horns, the Irish horns are usually considered as a later sub-group of the lur family and as instruments of the Teutonic tribes. And while they outnumber by far the brass wind instruments surviving from any other early culture, this is certainly not reflected in any published account, all the more regrettable since the masterly technique exhibited on the finest Irish horns is unequaled elsewhere at this time.

Traces of the casting seams on the outer surfaces of the Irish horns indicates that they were cast using a two-piece outer mould with core. Class I and Class II side-blown horns were all cast in one piece. The bell sections, cylindrical tubes and mouth-tubes of most of the end-blown horns were also cast separately; only in the case of the Phase III Class I end-blown horns was the mouth-tube cast-on after the bell section had been made. No moulds survive for the horns, but other archaeological evidence suggests that these were made of clay. Animal horns or wooden models were probably used and the ribs, cones, and loops were cut into the half-moulds after the models were removed. (The grooved decorations found near the bells of some Class I horns were incised after casting.) Identical pairs of instruments could be, and were made: the identical pairs of Class I horns from Drumbest have already been mentioned, and the Class II bell section found at Lisroe, County Kerry, is identical with one of the two found at Carrigogunnel, County Limerick.

A clay core was inserted into the assembled mould, typically leaving a space of 1.5 mm. This could be held in place at the open end(s) of the horns. Small pieces of bronze were also used to support the inner core; rows of them are visible on the outer surfaces of most horns. With only one exception, the side-blown horns retain a remnant of the core between the mouth-hole and closed end, beginning about 4 cm from the mouth-hole.

The horns were cast from the longer end. Occasional faulty castings were rectified by making a new mould around the faulty area and casting-on with more bronze. Damaged horns were also repaired by casting-on or by burning. Two-thirds of the horns include such repairs, indicating much use of the instruments. The outer surfaces are smooth and the casting seams have been filed away as much as possible, but the inner surfaces are more irregular. It is generally stated that the irregularities, together with the roughly chipped inner core remnants in the side-blown horns, the often untidy repairs, and the rudimentary nature of the surviving mouth-rims, all indicate a concern for outward appearance rather than sound quality. This conclusion arises from a mistaken belief in the superiority of modern machine precision. The present writer has examined and sounded a large number of the Irish horns and has made a detailed study of two of the finest of them. They are Class I horns from Drumbest preserved in the Ulster Museum collection in Belfast. One is a side-blown horn, the other, end-blown. The most comfortable holding manner with the side-blown results in the bell facing down and to the right. This is also the best playing manner, for it avoids the necessity of puffing the cheeks to seal the mouth-opening (required when the horn is played with the bell facing up and to the left), and the quality of the sound is superior. Due

to the size of the opening, tonguing is not very effective. The pitch g sounds strongly. The only other pitch that may be sounded is a', a major ninth higher, but this is much more difficult to obtain and is much poorer in quality."

The oval mouth-rim found on the end-blown horn encourages the use of the tongue, and it also seems to indicate a choice of playing positions. With the wide axis horizontal the horn is in a vertical plane and the bell points forward. However, a sharp edge found at the seam on the inside of the mouth-rim is then awkwardly placed against the upper lip, particularly when high pitches are attempted. If the narrow axis is placed horizontally, then the horn is in a horizontal plane and the bell points backward. In this case the sharp edge is not noticed during performance, the instrument is more comfortable to hold, and the sound quality is improved. Two pitches a minor seventh apart—e and d'—are readily sounded. The lower pitch may be lipped down by as much as a semitone, but the higher pitch is well defined.¹² As both pitches are sounded strongly, it might be the case that the end-blown horns were two-note instruments.

Being identical, the Drumbest end-blown horns were probably intended to be played together; the same is true of the Drumbest side-blown horns. However, although most finds include both end-blown and side-blown horns, it is most unlikely that the different horns would have been used together, at least not in any "musical" manner. Their significance lay in a ritual/ceremonial context.¹³

2. THE IRON AGE

Continental Europe witnessed the Hallstatt Iron Age between 700 and 500 BC, followed by the Celtic La Tene Iron Age culture beginning around 450 BC. The Celts and their culture dominated the continent for several centuries before being eclipsed by the expansion of the Roman Empire. Ireland was scarcely touched by the Hallstatt culture, and the transition from the Late Bronze Age to the La Tene Iron Age seems to have been both gradual and peaceful, rather than resulting from any large-scale invasion from outside. Moreover, the Irish La Tene culture is decidedly insular in character. All that is certain is that when Ireland emerged into the historic period, its inhabitants spoke a Celtic language—the ancestor of modern Irish. Unconquered by Rome and untouched by the population movements that followed the fall of the Western Empire, Ireland was able to preserve an archaic Iron Age culture for many centuries after it had ceased to exist elsewhere.

Only a few lip-blown instruments survive from the Irish Iron Age: all are end-blown, and two are made of wood.¹⁴ The first of these was found buried at Killesandra, County Cavan, before 1854; it is similar in shape to the end-blown bronze horns of the Late Bronze Age, and was skillfully made from a single length of wood 75 cm long, bent into a C-shape and hollowed without being split. A rectangular opening was made along the concave curve to aid the hollowing process, but as it is not certain if this was subsequently sealed, the function of the instrument remains unclear. The bell, 5 cm in diameter, narrows to an

opening of 2.5 cm diameter at the opposite end. The second wooden instrument was found near Clogher, County Tyrone, in 1837. It is a large curved instrument composed of four curved sections of wood which were hollowed after being split longitudinally. The assembled instrument is 260 cm in length and the separate sections are joined by alternately inserting the end of one section into the next. The junctions were sealed by pinning on strips of ornamented copper or bronze, although neither the strips nor information about the type of ornament used have survived. The curved tube is cylindrical and has a diameter of 2 cm. Both ends are inserting ends and allow for the possibility of the original existence of separate bell and mouth-tube sections.

The bronze horns are more clearly defined. Four were found in Loughnashade Lake near Armagh, County Armagh, in 1798, although only one has survived. In 1809 another bronze horn was uncovered under a bogland that had formerly been a lake at Ardrin, County Down. Two instruments similar to those found in Loughnashade Lake were discovered at Bushmills, County Antrim, in 1828, but these, together with "what appears to have been the head of an ancient Irish brass trumpet" found near Loughbrickland, County Down, in 1826, are lost.¹⁵ Two fragments survive, one of unknown Irish provenance and another of Irish manufacture found at Llyn Cerrig Bach on the island of Anglesey in Wales.

The Iron Age horns are all curved instruments. The Loughnashade and Ardrin instruments are both made in two sections. The first section is cylindrical and 2.6 cm in diameter in both cases, with the second section expanding to bells of 8 cm and 9 cm, respectively. The surviving Loughnashade horn measures 186 cm along the concave seam and 111 cm from tip to tip, while the Ardrin horn measures 240 cm along the concave seam and 142 cm from tip to tip. The cylindrical and expanding sections on the Loughnashade horn are of equal length, but the Ardrin horn is two-thirds expanding and one-third cylindrical. The two sections of the Loughnashade horn are joined by inserting their respective ends into a hollow bi-conical boss of hammered bronze sheet. The Ardrin horn was discovered carefully dismantled and without its boss. A boss is also found on the Llyn Cerrig Bach fragment. However, two bosses are found on the unlocalized Irish fragment, one at each end, which indicates that this instrument may have been made in three sections.

The Ardrin horn is the finest example technically, but the Loughnashade and Llyn Cerrig Bach horns have been much repaired. Indeed, the ornament found on a repair to the Llyn Cerrig Bach horn shows that it was used and repaired after it had arrived in Britain. The surviving Loughnashade horn may well be a composite of two different instruments; it must be remembered that four horns were discovered and that the surviving instrument was the "most imperfect of the whole."¹⁶

The Iron Age horns were manufactured in the following manner: Bronze sheets were first of all hammered into shape. In both sections of the Ardrin horn, the bell section of the Loughnashade horn, and also the two fragments, the edges of the hammered bronze sheets were aligned before bronze sealing strips were inserted into the tubes and held in position. Rivet holes were then drilled through the metal. Flat-headed rivets were inserted from the inside and were held firm before the outer ends were hammered flat to hold them

in place. In the cylindrical section of the Loughnashade horn, the edges of the bronze sheet were overlapped before the sealing strip was placed on the outer surface and was then held with widely spaced rivets supplemented by solder. In all cases, the rivets were carefully filed smooth before the tubes were bent into their final curved form. The care and patience taken was phenomenal and the craftsmanship, spectacular. For example, the Ardrbrin horn includes 1094 rivets and its two sections are completely airtight to this day—a fact that contrasts with recent claims made about this type of manufacture.¹⁷ At least three notes can be produced on this horn: the first just above Bb; the second f; and the third just above bb.

The mouth section of the Ardrbrin horn is completely cylindrical, but that of the Loughnashade horn is slightly flared at the damaged mouth-opening. The 1802 illustration of the now-lost "most perfect" Loughnashade horn also includes a wide mouth-rim (Figure 6). While the bell is plain on the Ardrbrin horn, the bell of the surviving Loughnashade horn has an additional bronze disc of 19.3 cm diameter mounted on it that bears a beautiful and intricate La Tene *repousse* design, a decoration in relief which was worked from the back of the disc. Identical discs were also found on the other Loughnashade horns (Figure 7).

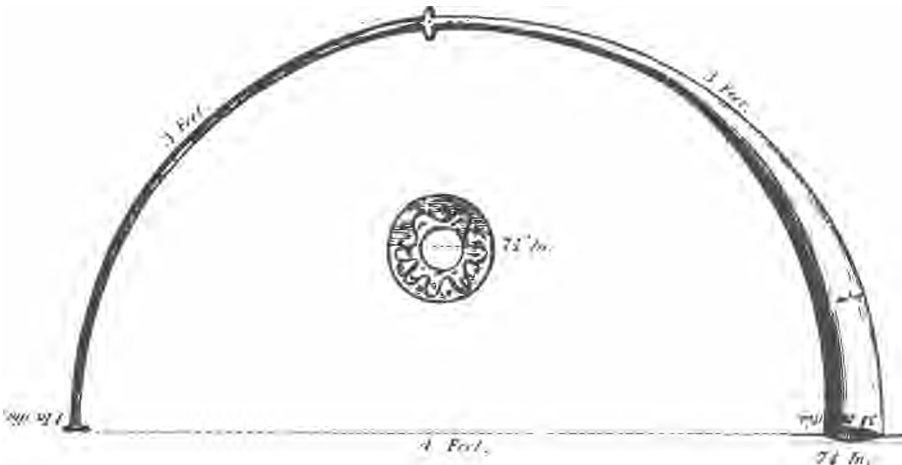


FIGURE 6

The "most perfect" Loughnashade horn (Engraving from A. Browne, "An account of Some Ancient Trumpets, Dug up in a Bog near Armagh," *Transactions of the Royal Irish Academy* 7 [Dublin, 1802]: 12)

**FIGURE 7**

The Loughnashade horn (Reproduced with the kind permission of the National Museum of Ireland).

It is generally assumed, on the basis of the 1802 illustration, that the horns were assembled to form a semicircle. However, the Loughnashade horn may be dismantled, and it is possible that the present form dates only from the time of its discovery. Other forms—of which an S-shape is the most likely candidate—may be considered: other Celtic instruments were made in this shape, and it also allows the bell (and, in the case of the Loughnashade horns, the finely decorated disc) to point forward during performance.

The Iron Age horns are works of art and, considering the care and attention that went into their manufacture and decoration, were instruments of special significance in the Irish La Tene culture. The sight, let alone sound, of the four Loughnashade horns with their identical *repousse* bell-discs must have been breathtakingly impressive. The instruments seem to have been ritual depositions: human skulls and other bones were found buried under the lake near the Loughnashade horns; the Ardbrin horn was carefully dismantled before deposition under what was at that time a lake; and the Llyn Cerrig Bach fragment was part of a hoard.

The most revealing find is that at Loughnashade, for the lake is immediately to the east of the ancient capital of the kingdom of Ulster, Emain Mache, or Navan Fort. This well-documented site enjoyed great religious and political significance in Late Bronze and Early Iron Age Ireland, and may be the "Regia"—or "Royal Place"—in the north of Ireland, mentioned by Ptolemy. Emain Macha was first settled 5000 years ago and became important as early as 700 BC. The skull of a Barbary ape found in a layer dating from the second century BC attests to the site's importance, while a gigantic wooden structure forty meters in diameter was constructed there in 94 BC before being ritually destroyed and buried under a mound of stones shortly after. Both Loughnashade Lake and the "King's Stables," an artificial lake to the west of Emain Macha, were sacred lakes, and it is likely that

the Loughnashade horns were deposited at the same time as the symbolic destruction of the site. Emain Macha continued as a royal site for a number of centuries after that ritual destruction. Even after it was finally abandoned, its powerful symbolic role continued; to this day the ecclesiastical capital of Ireland—Ard Macha, or Armagh—lies only two miles to the east.

The ritual destruction of the site shortly after 94 BC supplies a possible end-date for the Loughnashade horns. This lies well within the time limits for the Llyn Cerrig Bach fragment, which has been dated by the ornament found on a repair to it, and also by other material found along with it, to between 200 BC and 100 AD. The constructional similarity of the Loughnashade and Ardbrin horns also argues for their production from the same workshop, an argument reinforced by the finds made at Bushmills and Loughbricldand that were mentioned earlier.

The so-called "Nizza" horn, preserved in the Deutsches Museum, Munich, is the only continental equivalent of the Irish instruments, although both its origin and aspects of its present form are open to question. It consists of four sections joined by brass ferrules of recent origin. A cast mouth-rim has been placed on the narrow end. Most of the instrument is cylindrical, and only the bell section expands from a diameter of 2.5 cm to an ellipse of axes 10.5 by 9.5 cm. The hammered bronze sheets have been sealed with a strip placed on the outside over the aligned edges and soldered; the present strip replaces an earlier, wider strip.¹⁸ The famous Pergamon "Dying Gaul" of around 230 BC and the accounts of Classical Roman authors concerning the Celtic Gauls and their instruments of war are among the other reminders of the cultural contacts between the Irish Celts and their continental relatives during the Iron Age.

3. THE HISTORICAL AGE

Because Ireland was never a province of the Roman Empire, it was spared the trauma of the latter's collapse in the west during the fifth century. Trading and other links with Ireland's powerful neighbor did allow aspects of cultural exchange to occur, but to a lesser degree than would be expected. Christianization began in earnest in 431 AD when Pope Celestine I sent Palladius as bishop "to the Irish believing in Christ." The monastic church that resulted from his and his successor Patrick's evangelization came to preserve much of the ancient learning of the early Christian world that might otherwise have been lost during the continental Dark Ages. That love of learning also resulted in Irish joining Greek and Latin as the earliest written European languages. (An earlier Ogham script based on sets of lines had been in use on monuments since the fourth century AD) Beginning in the seventh century, Irish missionaries began their evangelizing activities in lands as far apart as Iceland and Ukraine, reintroducing to Western Europe the knowledge they had preserved, and founding the great monastic centers of learning at Iona, Lindisfarne, Luxeuill, Fontaine, Wurzburg, St. Gallen, Bobbio, and Milan, to name only some of the most important and influential among them. Among the manuscripts the missionaries brought to the continent are found representations of trumpets and horns, of which the trumpets of the Last

Judgment from St. Gallen (Ms 51) are the best known. These have been considered as belonging to an inherited symbolic tradition rather than reflecting instruments then in use in Ireland and known to the Irish illuminators. However, the survival of two representative instruments and the witness of early Irish literature both make it clear that realism rather than symbolism is recorded here, and that there continued in Ireland a tradition of manufacture and use of lip-blown instruments throughout the period of the continental Dark Ages.¹⁹

Both instruments are of wood. One was found buried in a bog at Becan, County Mayo, in August, 1791.²⁰ It is made from a single piece of willow 192 cm long. According to the report of the original find, it was straight when discovered but has since warped. The wood was split longitudinally and hollowed in a gradual taper before being joined again and bound on the outside by a spiral binding of five lengths of bronze, 2.0-2.5 cm wide. These lengths were overlapped at the ends and secured by pairs of bronze rivets. Collar-like mounts seem to have been used instead of binding at the bell end. The bell is 8 cm in diameter. The other end is oval in shape, 1.1 x 0.8 cm, and it narrows internally to an oval throat of 0.4 x 0.3 cm. A collar cut in the wood on the outside 6 cm from the narrow end indicates that a bronze mouthpiece was mounted here.²¹

The second instrument was similarly constructed. Dredged from the bed of the river Erne in 1956, four miles south of Enniskillen, County Fermanagh, in an area of early Christian settlement, it is made of an expanding and slightly curved piece of yew 58 cm long. The bell end is 8 cm in diameter. The narrow end is 2.5 cm in diameter and is enclosed by a bronze mouthpiece with moulded rim 3.9 cm long. The mouthpiece encloses a carefully funnel-shaped tube which narrows to a minimum diameter of 1.3 cm. Twelve bronze mounts 1.2-5.0 cm wide, of which nine survive, were placed along the tube as bindings. The overlapping ends of these were originally soldered but were later secured with bronze rivets. Four mounts include engraved lines and the inner end of the mouthpiece includes an incised border. The mount nearest the bell end has a particular pattern of hatched triangles that enables this instrument—and thus that found at Becan—to be dated to between the eighth and tenth centuries AD (Figure 8).



FIGURE 8

The Lough Erne wooden trumpet (Photograph reproduced with kind permission of the Trustees of the Ulster Museum)

Despite the tapered bores, comparison with early Irish iconography and literature indicates that, according to a contemporary Irish convention, these instruments were considered to be trumpets. Horns were also in use. While the surviving trumpets are organic, the texts make it clear that metal instruments were also made and that trumpets and horns held a particular status in Irish society. It is during this time, around 795 AD, that Viking raids began in earnest. However the Irish, unlike their neighbors, were able to withstand the Vikings. Aspects of Viking culture were absorbed into the native culture, but the Vikings themselves had little effect on Irish society and ceased to pose a serious threat after their defeat at the Battle of Tara in 980 AD. Irish kings subsequently permitted Viking settlements—at Dublin, Wexford, Waterford, Cork, and Limerick, for example—to continue, and gained from the payment of tribute and the international trade these bought.

It is only with the Norman invasion of 1169-1170 AD that the longest-surviving Celtic culture finally began its gradual decline as suppression followed colonization, culminating in the passing of the old Gaelic order after the flight of the Earls of Ulster in 1607.²² Prior to that invasion, however, it has been demonstrated that there had existed in Ireland a continuous tradition of manufacture and employment of organic and metal lip-blown instruments. It has also been shown that this tradition was an aspect of an indigenous Irish culture that was uniquely able to develop unhindered for almost two millennia, from before the rise of the Roman Empire until after the Second Crusade. In short, it has been shown that, in one part of Europe at least, there was no need for any introduction of metal lip-blown instruments by the Arabs and Moors during the Middle Ages.

NOTES

1. In "A New Look at the Historical, Linguistic and Taxonomic Bases for the Evolution of Lip-Blown Instruments from Classical Antiquity until the End of the Middle Ages," *Historic Brass Society Journal 1* (1989): 3-64.

2. The following give some flavor of the extent of the misunderstanding. The Bronze Age instruments are never mentioned. A. Baines, in *Brass Instruments* (London, 1978), p. 66, considers them as distinct from Celtic instruments, while E. H. Tarr, in *The Trumpet* (London, 1988), p. 27, considers them to be *lures*, and their makers members of the Teutonic tribes. D. L. Smithers, in "A New Look," seems to argue (p. 5, n. 3) that Ireland was part of the Roman Empire and had its subsequent history parallel with that of Britain, which compounds the confusion in his treatment of trumpets and the Celts (pp. 30-1). In fact, Ireland (and much of Scotland) remained outside the Empire and, upon the withdrawal of the Romans, the Irish colonized parts of Scotland, Northern England and Wales and then re-Christianized and heavily influenced the culture of these areas. (Scotland is named after the Irish colonists—the Latin term *Scottus* originally referred to a person from Ireland.) Moreover, Ireland was conquered by neither the Saxon nor the Viking, and was invaded by the Normans only at the request of a dispossessed Irish king more than a century after England had been conquered. (See later in the present article.) The present writer is engaged in an investigation into the iconographical and literary

evidence as a companion to this organological survey, the results of which will also be published.

3. The find was reported, and one of the three instruments discovered was figured, by T. Molyneux on p. 197 of his appendix to the 1725 edition of G. Boate's *Natural History of Irekend*, first published in London in 1652.

4. J. Coles, "Irish Bronze Age Horns and Their Relations with Northern Europe," *Proceedings of the Prehistoric Society*, new series, no. 29 (1963): 326-356, an important article to which is paid much lip-service but little attention. The present writer has additionally examined the instruments preserved in the National Museum of Ireland, Dublin, and in the Ulster Museum, Belfast, and has consulted the original published reports of the discoveries of these horns where possible.

5. Dowris is near the town of Birr, which was "the navel of Ireland" in early Irish place-lore. There are only two exceptions to the distributions pattern. A Class II side-blown horn was found at Toome, County Antrim, and a Class I end-blown expanding bell section was discovered at Roscrea, County Tipperary.

6. At least for the present, left-handed writer; see below in main text.

7. A still earlier phase may possibly be indicated by an expanding tube found at Drunkendult, County Antrim, along with a side-blown horn just before 1902; see F. J. Bigger, "Ancient Irish Bronze Trumpets," *Ulster Journal of Archaeology*, 2nd series, no. 8 (1902): 11-12. The expanding tube of this instrument has an inserting flange with four holes and a rib decoration at its narrow end and curves slightly to the wide end, which also includes four holes. In its dimensions and shape, this seems to be the equivalent of that part of the Phase I expanding bell section which begins at the midpoint of the ribbed decoration where the curve begins about half-way along the curved part itself. However, the form is unique to date and may be in all respects exceptional.

8. Although the Manooth horn is long lost, both a description of the original find and a sketch of the horn survive: see C. S. Briggs and R. G. Haworth "Dean Sankey Winter and the Bronze Age Trumpet from Manooth," *Journal of the Royal Society of Antiquaries of Ireland* 108 (1978): 111-15. Fragments of a second horn of unknown form were also found.

9. An illustration of the now lost horn from Battle in Sussex, England, is to be found in E.C. Curwen, *The Archaeology of Sussex* (London, 1937), p. 209, fig. 62.

10. In the original report of the Carrigogunnel, County Limerick, find by R. Ousley in *The Transactions of the Royal Irish Academy* 2 (1788), pt. 3, p. 4, there is mention of "two pins or pegs [which] fastened to the instrument...the pins were lost"; see J. Coles, "Irish Bronze Age Horns," p. 332, n. 2.

11. All pitches are given with reference to the Helmholtz system. The interval of a major ninth is also found for some modern side-blown animal horns played in East Africa, for example, the Kenyan Arupepe: see G. Hylsop, *Musical Instruments of East Africa, vol. 1 Kenya* (London, 1975), pp. 37-8. However, because some modern African instruments have the same acoustical properties as Irish Bronze Age instruments, this does not imply that the Irish instruments may have been influenced by

any hypothetical Bronze Age African horns, as is inferred by D. L. Smithers in "A New Look," p. 31, n. 80. At any rate, the Irish bronze instruments, and also the Scandinavian lurs, were based on the cow horn rather than the elephant's tusk.

12. The pitches given by Coles in "Irish Bronze Age Horns," p. 339, seem to be uniformly one semitone too high. The additional pitches given by him for the Drumbest end-blown horns are very difficult to produce, are poor in quality, and require more expert use of lip-technique than the two lower pitches.

13. This has not prevented some writers from considering them as purely musical instruments, just as Angul Hammerich and others did concerning the lurs one century ago. The prevalent view today, expressed by P. Holmes in "The Manufacturing Technology of the Irish Bronze Age Horns," *The Origins of Metallurgy in At-Lint-it. Europe*, ed. M. Ryan (Dublin, 1980), pp.165-188, is that the horns were employed to provide a harmonic and rhythmic base for communal music-making in the manner of the Australian didjeridu. S. O'Duibhir, in "Music of the Late Bronze Age in Ireland," *Archaeology Ireland* 2, pt. 4 (1988): 135-6, has gone much further and proposed with extreme anachronism that end-blown horns supplied the rhythmic and harmonic base and supported melodies played on side-blown horns, which latter he states have a completely chromatic range of almost three octaves. The association of the Irish horns with crotals in some hoards, and the bull-like sound of the horns themselves, point to a ritual connection with some cult of bull worship during the Bronze Age.

14. The best survey is found in B. Raftery, "La Tene in Ireland: Problems of Origin and Chronology," *Vereffendigung des vorgeschichtlichen Seminars Marburg*, Sonderband 2 (Marburg, 1984): 134-143, to which the following report is heavily indebted.

15. The Loughnashade find was first described in A. Browne, "An Account of Some Ancient Trumpets, Dug up in a Bog near Armagh," *The Transactions of the Royal Irish Academy* 8 (1802), pp. 11-12. The Ardbrin find was described in J. Bell, "Illustration of the Plate Prefixed to the Present Number," *The Newry Register* 1, no. 4 (1815): 293-94. The now-lost horn fragment found near Loughbrickland was reported in the *Newsy Telegraph*, 4 August 1826, and the account was reprinted in *The Ulster Journal of Archaeology*, second series, no. 1 (1895): 234.

16. In J. Stuart, *Historical Memoirs of the City of Armagh* (Armagh, 1819), p. 608.

17. This is at variance with D. Smithers' consideration of the method as a "less effective" hypothesis in "A New Look," p. 31, n. 79. Moreover, his remarks about "lures, cornuae, litui, etc. of the Nordic Bronze Age people" seem to argue for their manufacture from bronze sheets (pp. 30-1). The lur and other similar to those depicted on the Gundestrup cauldron was found in the River Withm near Tattershall Ferry, Lincolnshire, England, in 1768. It was made from hammered bronze sheets soldered with tin. Its present location is unknown, but an illustration is found in J. M. Kemble, *Horae Ferales* (London, 1863), pl. XIII and p. 171.

18. An illustration of the "Nizza" horn is found in F. Behn, *Musikleben im Altertum und frvhen Mittelalter* (Stuttgart, 1954), Tafel 81, Abbildung 186, and the instrument is described in detail in B. Raftery, "La Tene in Ireland," pp. 140-43.

19. This statement is made in the light of iconographical and literary researches already undertaken by the author and to be included in the forthcoming study mentioned in n. 2.

20. The Becan trumpet was first reported in J. Walker, "Description of an Ancient Irish Instrument," *The Transactions of the Royal Irish Academy* 4 (1792): 33-36. A modern account is included in the report concerning the river Erne trumpet by D. M. Waterman, "An Early Medieval Horn from the River Erne," *UlsterJournalofArchaeology*, 3rd series, no. 32 (1969):101-04, from which much of what follows is taken.

21. Waterman was the first to remark on this important detail at the narrow end, in "An Early Medieval Horn," p. 103.

22. A ceramic horn survives from 13th-century Dublin but, like all evidence subsequent to the Norman invasion of Ireland, it is not considered here. The instrument is described and illustrated in A. Buckley, "Musical Instruments in Ireland from the Ninth to the Fourteenth Centuries," *Irish Musical Studies*, ed. G. Gillen and H. White, no. 1 (Dublin, 1990): 48, and pl. XX on p. 44. The section of the article that concerns lip-blown instruments (pp. 23 and 45-8) should be treated with some caution, however. As late as 1521, Albrecht Durer was able to sketch a group of Irish mercenary troops who counted among their number a player of a long end-blow horns.

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