# Reed and rush bundle rafts in Ireland - ethnographic and experimental nautical archaeology

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**Abstract**: Well into the 20th century, primitive watercraft, constructed of reeds, rushes, and other natural materials, persisted in use in the riverine midland regions of Ireland. While there is no known contemporary photographic evidence of these, some descriptions of various bundle rafts were collected by 19th Century Antiquarians, The Irish Folklore Commission (1935−1971), and by Folklorists in the Folklife Division of the National Museum. The last two decades have seen a renewed interest in the bundle raft tradition. A literature review was undertaken, known examples were examined, and some basic experimental archaeology was undertaken. The possible use of this archaic form of watercraft in prehistoric Ireland was considered.

**Keywords:** rush rafts, bundle boats, folklife – Ireland, work boats – Ireland

## Introduction

Reed and rush bundle rafts and boats are usually associated with warm climates, but water reeds (*Phragmites Australis*), club rush (*Schoenoplectus Lacustris*), common or soft rush (*Juncus Effuses*) and bulrushes (*Typha latifolia*) thrive in the damp temperate climate of Ireland. The types of craft identified as having been constructed of club rush, water reed and other natural materials, are simple wading and swimming aids, round coracle type craft, larger square rafts and a rectangular raft built around a simple framework. All of these bundle type craft relied on the buoyancy of the material rather than hull displacement to float.

The most widely known of the bundle rush craft is the rectangular, boat shaped *Cliath Thulca* or 'flood raft' in use up to the 1930's or later (O'Dowd 2015: 398). It was used to navigate the River Suck and the 'Callows', as the flood plain areas of the River Shannon and its tributaries are known. At least five known replicas of the *Cliath Thulca* have been built (Fig.1). Descriptions of several styles of bundle rafts were found in the folklore records and some of these rafts were recreated to see how they would perform.

The wider subject of the use of reed, rush and other bundle rafts has been covered in many scholarly works on maritime archaeology, such as Hornell (1946), Johnstone (1980), and McGrail (2001).

## The Antiquarians and the Folklore Collectors

An early 19th Century Antiquarian travelling in the Lakelands of Fermanagh describes a form of rush craft: "In one place we were amused by seeing a man crossing to his fishing station, with no better mode of conveyance than a large bundle of rushes, on which he sat, moving it along by means of a small paddle" ('E' 1825: 199–210).

The Antiquarian William Wakeman wrote in 1866 that rush rafts were made in the lake districts of Fermanagh in the Northern part of Ireland. Wakeman gives us a reasonably detailed description of the raft: "cutting down four fairly – sized trees, generally of ash; these he forms into a quadrangle, lashing as sailors the corners, with ropes of straw or of hemp or even of leathern tongs. Over the figure thus constructed he attaches a few branches of timber, irregularly placed, and intermixed with branches; he then with a reaping hook cuts a number of armfuls of bulrushes and secures them to the framework; thus forming a raft or float..." (Wakeman 1866: 2) (Fig. 2).

**Fig. 1** The Cliath Thulca or flood raft built in 1962 for the National Museum. It was based on a type used up to the 1930's on the River Suck (photo: © National Museum of Ireland).

**Fig. 2** A 1.5 $m^2$ bundle raft. Similar to the description by antiquarian William Wakeman in 1866. The addition of a light framework made the raft more stable (photo: courtesy of R. Henshall).

In 1872 Wakeman writes "that until recently a kind of rude substitute for a boat was not uncommon upon the waters of the Erne ... It was composed of wreaths of bull rushes tied upon a frame or raft ... I myself have observed but one boat ... three years ago, upon the crannoged Lough of Coolermer. Probably this rush-buoyed raft is the earliest kind of inland or fresh-water craft known to the primitive inhabitants of Erin" (Wakeman 1872: 74–76).

Agricultural and rural living practices in Ireland changed radically in the mid-20th century. Fortunately, the Folklife Division of the National Museum of Ireland and The Irish Folklore Commission were active in recording a way of life that was changing at pace. In 1935, The Irish Folklore Commission, later becoming the National Folklore Collection (NFC), started its work to study and collect information on Folklore and Folk traditions in Ireland.

Emyr Estyn Evans, a Welsh Geographer and Folklorist, noted in his book on Irish folklife that one of the more unusual boat types in the last century was the raft made of wreaths of bull rushes named a *curragh* (Evans 1957: 242).

Anthony T. Lucas, who was Director of the National Museum of Ireland from 1954 to 1976, had a keen interest in Folklife practices. In the early 1960's he collaborated with The Irish Folklore Commission to circulate a questionnaire on the uses of hay, rushes and straw, (Ms. NFC 1962) and embarked on collecting artefacts in these materials for the National Museum.

James Delaney was a full-time collector with the Folklore Commission, based in the midlands. In the 1950's, he came across the area of Derrycahill in a remote part of South Roscommon where rush rafts had recently been in use. In 1962, he brought the subject of rush rafts, in particular the *Cliath Thulca*, to the notice of Dr. Lucas at the National Museum. Local informant Patrick Gately arranged the building of a large 3.2 m example of the raft for the Museum. This was documented in a series of photographs by the National Museum, from which Fig.1. is taken.

In 2000, the Senior Curator of the Folklife Division of the National Museum, the late Séamus Mac Philib, published an article in the Ulster Folklife Journal on rush bundle rafts, generating renewed interest in the subject (Mac Philib 2000).

## The Engineers, Artists and Archaeologists

In 1997, Joseph Tully, a teacher of technology, constructed a rectangular coracle style hazel frame, to which he lashed bundles of rushes, for an historic re-enactment of a crossing of the fast-flowing River Shannon (Fig. 3). He found the raft difficult to handle, when compared to his experience of paddling skin covered coracles over the same stretch of water[1].

In 2000, Pádraig Ó'Duinnín, an engineer and experienced currach builder, built a 3.1 m *Cliath Thulca*. He used hazel rods for a framework, and reeds for bundles. The craft supported a number of passengers on a trial downstream voyage on the River Shannon.[2]

**Fig. 3** The replica bundle rush craft built for the 1997 historical re-enactment crossing of the River Shannon (photo: courtesy of J. Tully, Kilcormick Community School, Ballinasloe)

[1] J. Tully, personal communication, 15 October 2021.

[2] P. Ó'Duinnín, personal communication, 10 October 2021.

In 2014 Gerardine Wisdom, an artist who works with natural fibres, built a raft using techniques observed in Lake Titicaca. Wisdom filled an elongated timber frame with compacted bundles of rushes to form the main body of the craft. The raft was extremely buoyant, and the very tight bundles took a few days to become waterlogged (Brennan 2014).

Possibly the largest contribution to the understanding of rush bundle rafts in Ireland was the research and experimental archaeology undertaken by Robert Henshall (2018) for his thesis in archaeology. A skilled offshore yachtsman, small boat sailor, and kayaker, he had the required broad skill base to construct and evaluate several examples of rush bundle rafts.

**Fig. 4** A Floatation Ring made of rushes. Known as a 'curragh' (pronounced 'corra' in Ulster) it was used to teach children to swim (photo: © Museum Services, Fermanagh and Omagh District Council).

## Swimming Aids

The National Museum has records of the use of swimming aids made of natural material including aids made from dried 'ellestrums', or yellow iris (O'Dowd 2015: 448). O'Dowd also gives an account from Ulster, where the titles '*swab*' and '*curragh*' describe a lifebuoy that is circular in shape. The swab had a protrusion, known as a beak, to lay one's chin on, and it also had a loop on each side for the arms so that the swimming aid revolved with the body. The Fermanagh and Omagh District Museum has an example of a floatation ring made of rushes (Fig. 4). In the National Museum collection there is a swimming aid from Co Cavan, consisting of a 2-metre-long rush bundle, bent into a horseshoe shape. Examples

are found in the Folklore Manuscripts from Mallow, where "bundles of reeds or rushes were tied with light ropes and used by persons swimming in the river" (Ms. NFC 2154: 91), and from Waterford, where 12 canes were simply tied together (Ms. NFC 2154: 175).

Lidström and Svanberg (2019) give an overview of rush (*Schoenoplectus Lacustris*) and reed (*Phragmites Australis*) swimming aids in Sweden, including a reference that Carl Linnaeus, in his 1737 Flora Lapponica, noted bundles of club rushes used as buoyancy belts in Småland. They also cite examples from Denmark, Germany, Switzerland, Austria, and Estonia.

## Experimental Archaeology

Some experimental archaeology was undertaken, initially to try to reconstruct the examples of bundle rafts from the literature, and where successfully constructed, to make some basic assessment of the buoyancy, stability and manoeuvrability of the craft.

At least five different types of possible bundle rafts were identified from the National Folklore Collections (NFC). The folklore informants were between 60 and 85 (approx.) in 1962 and gave accounts of bundle rafts used within living memory on the River Suck. Square rafts constructed of sheaves of rushes bundled together, forming a raft of 1.2 m to 1.5 $m^2$, and approx. 0.60 m in depth, seem to be the most common craft used (Fig. 5). Some had a straw rope made into a handle at one end which facilitated the propulsion pole to be pushed through to anchor the raft in the mud (Ms. NFC 1573: 70–71). The first experiment by the author to recreate this model resulted in the raft folding in the centre due to lack of rigidity. Additional bundles of rushes in the base enabled this raft to hold the weight of a person but it was much more stable with the addition of a single longitudinal branch.

**Fig. 5** A simple bundle raft, of no more than 1.5 $m^2$, without any framework. This is the most common type of bundle raft cited in the National Folklore Collections. Built by Robert Henshall (photo: D. Tully).

Two descriptions of round rafts were more difficult to interpret (Ms. NFC 1639: 274–276). The first, described as a coiled basket like a 'swan's nest', was found to be too difficult to construct with the required diameter of coils to make a buoyant craft. The second used two crossed 1.5 m planks as guidelines, but the description was confusing to follow and was probably recorded by an observer rather than a practitioner.

The National Museum also has a record of a boat in the shape of a four-poster bed frame, filled with bundles of bull rushes, which was used on Lough Urlaur, County Mayo (Niland 1949), but no attempt was made to replicate it. Two other accounts describe rafts of large cubes 1.5 metres each side, but these were probably the rough rafts made by harvesters while collecting rushes. There were challenges building a craft where no partial or full example was available and interpreting some of the vague descriptions in the records.

There are various descriptions of the elongated *Cliath Thulca*, some with wicker frames and others where boards were added to protect the sides. Of the 1962 model Jim Delaney stated, "it rowed remarkable well, and was easily handled with a pair of oars ... Not a drop of water came through the reeds and the floor of the raft" (Delaney 1976: 19–29). As was found by Joseph Tully in his replica of a *Cliath Thulca*, the traversing of the River Shannon showed the lack of manoeuvrability in fast flowing water. It could indicate that reed and rush rafts (as found in Ireland), were probably confined to slow rivers, water meadows and lakes.

The author found making good cordage from natural materials much more challenging than collecting and bundling rushes together. Briars were difficult to handle, and split briars were found to be brittle. When a hide was available, leather thongs were the most rapidly made cordage. Straw rope was the easiest to make in large quantities but needed to be well made for immersion in water. Only a small sample of bog deal was available and not used in the reconstructions. In 2021, Henshall demonstrated to the author particularly strong cordage made from platting seasoned club rushes.

## Discussion

Examples of bundle rafts still being made around the world are the reed Fassonis of Sardinia (Kriek 2022), the papyrus Tankwas of Lake Tana (Selmanta 2014), and papyrus canoes on Lake Chad (Immega 2012: 21–27). There are totora reed rafts on Lake Titicaca and Caballito de Totora in Huanchaco, Peru, and Banana stalks are utilised for rafts in Kenya and elsewhere (Bockius, Eric 2015: 27–31). Other natural fibre rafts that were used into the 20th century were the Papyrella of Corfu (Tzalas 1995: 443), the flax and bulrush Mokihi of New Zealand (Best 2005: 195), and the Tule reed boats of California (Prodanovich 2022).

There are distinct similarities in bundle rafts around the world. A transfer of cultural practices is in no way suggested, but rather it seems to be a universally instinctive process for man to make bundles out of buoyant natural materials, and then to tie these bundles together to create a raft. At the 4th International Symposium on Boat and Ship Archaeology, Bonino stated "The passage from floats to rafts is simple, and takes advantage of the greater buoyancy obtained using the same number of bundles or logs, but distributed horizontally. This may have had its origins in the Mesolithic Period, along with the weaving of baskets and the building of huts and coracles" (Bonino 1988: 465).

A study is being carried out of the Clonfert Callows covering the period 1810 to the 1960's, where farmers were moved into the Callows and had to adapt to subsistence living. During floods, boats were often kept tethered at the doorway as the only means of mobility (Cunniffe 2018). Lynch *et al.* (2011: 95) gives an account of a modern example of subsistence living and boat use in this wetland area by the last resident.

Mc Philib (2000: 7) suggested that Ireland was unique in Northern Europe, where a raft like the *Cliath Thulca* could be still made from living memory, and that this was probably down to an archaism in Irish material folk tradition. Ireland has been recognised as a repository of archaic folklife practices (Evans 2000: ix). The making of objects from natural materials was carried on in Ireland well into the 20th century (Shaw-Smith 2003; Hogan 2001).

Due to the bio-degradable nature of the bundle raft materials, none have survived in the archaeology record. Apart from Breen and Forsythe (2004: 147–148), little recognition has been given to the possible use of bundle rafts in Ireland by archaeologists. There have been a significant number of dugout boat finds, giving us direct evidence for the use of dugouts over a long period of time, back to the Neolithic (Fry 2000; Gregory 1997). Similarly, there is literary evidence for the use of skin boats going back over 2,000 years (Tully 2017: 206), and with the ethnographic evidence from Ireland and elsewhere bundle rafts should be given consideration for their possible use in earlier times.

## Conclusions

The National Folklore records indicate that the *Cliath Thulca* and other bundle rafts were considered a temporary or seasonal craft. Most of the rafts seemed to have been constructions of simple bundles, more likely poled and paddled rather than rowed. While there were different styles of the *Cliath Thulca* they were probably 2 m or less in length, with a simple framework (Mc Philib 2008: 601). Henshall's (2018) rigorous interrogation of the primary sources found that there was no evidence for a *Cliath Thulca* type raft as large as the 3.2 m example in the Folklife Division collections.

One missing piece of information concerns how the rafts were dried out or stored between uses. It is possible that in those areas where rush and reed bundle rafts were required in winter flood times, raw material and cordage would probably have been stored to build a floating craft in a timely manner.

The craft constructed by Henshall and the author adhered to the descriptions in the records as far possible. The practical experimentation of building and floating the rafts filled some gaps in the knowledge of the subject and explained some of the more obscure descriptions in the records and anecdotal evidence.

The overall time and preparation required to build rush craft is less than that of a coracle. Construction of bundle rafts of the type found in Ireland requires fewer skills and resources than that needed to construct skin boats or dugouts, and as such they are likely to have been more numerous in earlier times. As referenced in the discussion and swimming aid sections above, the records show that flotation devices, in the form of rush and reed swimming aids and bundle rafts, were known throughout Europe and elsewhere. Rush and reed bundle rafts may therefore be worthy of more focussed study and consideration as a form of ancient transport for local mobility in Ireland, and the wider Northern European inland waterways.

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