THE WINDMILL STUMP

By John Campbell

Behold! A giant am I!
Aloft here in my tower,
With my granite jaws I devour
The maize, and the wheat, and the rye,
And grind them into flour.
I look down over the farms;
In the fields of grain I see
Harvest that is to be,
And I fling to the air my arms,
For I know it is all for me.

"The Windmill",
Henry Wadsworth Longfellow

Wind power is a term we are all familiar with nowadays. Recently the government announced plans for a massive increase in offshore wind power. Indeed we are becoming accustomed to the sight of wind turbines erected on our hills and mountains to harvest the energy of the wind. Additionally individual turbines are appearing at newly built houses in the countryside.
As modern energy sources become more and more expensive we are once again exploring a source used many years ago when windmills were erected to grind our corn. We have a reminder of that earlier period, in our area, in the town land of Tullynacross where the remains of a windmill overlook the village of Poyntzpass.

Overlooking the village

In his book 'The Millers and Mills of Ireland of about 1850' William E Hogg states that there were over 3000 working mills in Ireland at that time. He calculated that there was roughly one mill per 10 square miles and that, as most were water mills, there was a concentration of mills along rivers. In Armagh during the period 1800 to 1860, Hogg lists 238 mills - 87 corn mills, 10 flourmills, 90 flax mills, 11 bleach mills, 29 beetling mills, 4 spinning mills and 7 spade mills. In this area Hogg recorded that the miller, John Bennett, had three mills, a corn mill at Brannock and corn and flax mills at Tullynacross, while Isaac Boyd had corn and flax mills at Demoan.

Bennett's mills were situated along the stream on the western outskirts of Poyntzpass where four town lands converge. They are Glassdrumman, Brannock, Lisraw and Tullynacross. Where they meet was once an area of considerable industrial activity. The Ordnance Survey map of 1870 shows, in this area, two flax mills, a corn mill and a 'windmill in ruins'. The windmill is situated in Tullynacross.

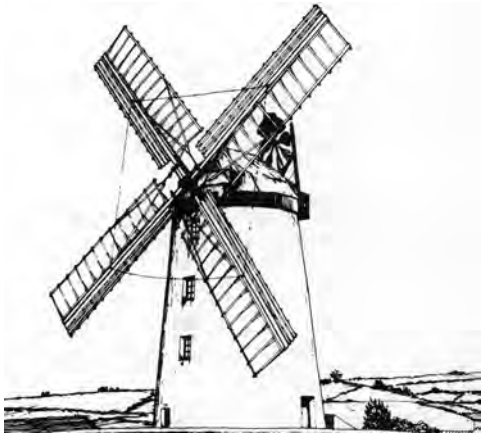
In an article on local place names by Sean Mac Labrai, which appeared in Volume III of our journal, 'Before I forget…', the name of the town land of Tullynacross is said to derive from 'Tulach na croise' - 'the hill of the crosses'. The Memoirs, which accompanied the Ordnance Survey Map of 1835 describes Tullchanacross as 'the hillock of the cross'.
Perhaps the name of the town land goes back to a much earlier time, before the construction of the windmill on top of the hill, but the name "hill of the cross" would indeed be very appropriate to the site of a windmill with its sails in the shape of a cross.

'even on decay . . . possesses a dignity . . .

The Ordnance Survey Memoirs describe the town land as 'containing the greater part of the village of Poyntzpass' and that 'a quarter of a mile west of the village is a corn mill and a little higher up the stream a flax mill and in the north east an old windmill stump.' The hilltop on which the windmill was situated is by no means the highest hill in the area at 175ft above sea level - Lisraw Fort being 464 feet and Carrickbrack Hill 522 feet.
In his memoirs, written around 1880, James Bennett states "Flour used to be ground in the windmill by my grandfather (John Bennett). Jack Shannon took one of the millstones down the lane to the corn mill. He ran it down without any person helping him. He was a strong man."

The front cover of our First Edition of "Before I Forget" reproduced a pen and ink sketch of Poyntzpass Village, taken from a large map of 'The Manor of Acton' currently in the Public Records Office, Belfast. The Close family commissioned the drawing, which was the work of William Richmond, in 1831. It clearly shows the windmill stump on the hilltop overlooking the village and, to its right, a building, which appears to have three chimneys.
The late John William Little maintained that there was once a cottage hospital or 'infirmary', near to the windmill.

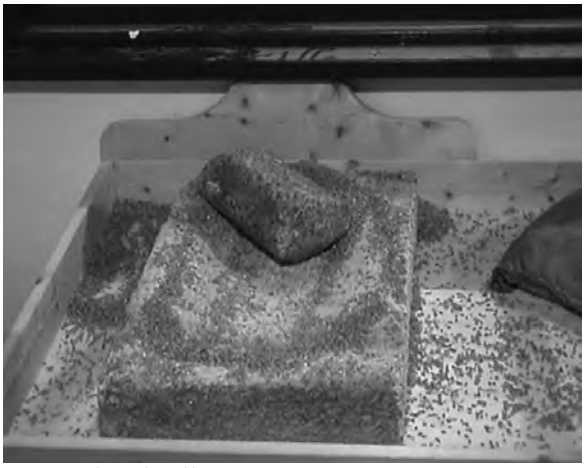
When Donal Jennings produced the little film some years ago showing scenes in and around this area his opening shot panned out from the windmill stump overlooking the village. Windmills have long been recognised as adding atmosphere to the countryside and a writer on windmills, John Vince, states that, 'even in decay, a windmill possess a dignity few other buildings can equal'. Vince quotes from another English writer William Cobbett who describes approaching Ipswich in 1830. He noted that *'windmills on the hills are so numerous that he counted no less than seventeen while standing in one place. They are all painted or washed white; the sails are black. It was a fine morning, the wind brisk and their twirling altogether added greatly to the beauty of the scene and appeared to me the most beautiful sight of that kind that I had ever beheld."*



Ballycopeland Windmill

In Holland without windmills to help drain the land and keep back the sea the country could not exist. The Ards Peninsula used to be known as 'little Holland' and a similar sight as that described by Cobbett would have greeted a visitor to that area. At one time over 100 windmills were recorded in Co. Down and although, like our own here at Tullynacross, there are several remains, only one windmill survives, at Ballycopeland which has been fully restored. It is thought that Ballycopeland Windmill was built around 1780 or 1790 appearing on the first Ordnance Survey map of the area in 1830. Legislation was passed in 1784 to encourage the growth of corn. It is said that County Down is one of the best grain-growing areas in Ireland and, as a result, many windmills were built there at the end of the eighteenth century.

Following 1690 some records that I examined state that there is a local tradition that Dutch settlers generated an interest in the building of windmills. The first map of the county was produced by Rocque in 1760. He was a celebrated cartographer of that time and on his map he records nine windmills, including the windmill at Tullynacross, which is shown complete with sails, suggesting that at that time it was in working order. However by 1835 the Ordnance Survey Map describes our windmill, as it has been described ever since, as the *'Windmill Stump.'*



A stone handmill

The farmers who brought their grain to the mill at Tullynacross when it first went into operation would have marvelled at this new machinery but from earliest times their ancestors sought ways of grinding grain. The earliest method of turning grain into flour was to crush the grain between two stones. This process was improved when the grinding action was produced by working, what was known as a rubbing stone, backwards and forwards across a saddle shaped stone or quern (a stone handmill). The first rotary quern or handmill consisted of a bed stone, which remained fixed, and a runner stone of similar dimensions into which two holes were bored. The grain was fed into the central hole and a handle, or peg, in the other hole was used to rotate the runner stone. A

version of this, produced by the Greeks in 400BC, was operated by donkeys and slaves were also used. The next source of power harnessed to power the mills was water and then later windmills came along. Water Mills with a system of gearing allowed power to be transmitted from a vertical wheel to a horizontal stone. A basic difference between water and windmills is that power from water is transmitted upwards whereas with windmills power is transmitted downwards.

The first rotary handmill

The windmill at Tullynacross is a Tower Mill. The fact that tower mills were built of stone has meant that a great number of stumps still exist around the country. There were two earlier types of mill, a Post Mill and a Smock Mill. The Post Mill was the simplest type of mill and consisted of a wooden framed structure built around a massive upright post. This building simply housed the machinery necessary to carry out its primary function.

A Post Mill

Then there was the Smock Mill, that was said to resemble a man in a smock. In the film 'Chitty Chitty Bang Bang', the smock mill at Ibstone in Buckinghamshire, is featured.

Whereas Post Mills were rectangular and the entire structure was moved around the pole so that the sails faced the wind, the Smock Mill had a circular design and introduced the revolving cap to which the sails are fixed and a mechanical or automatic system enabled the mill cap to be adjusted to any change in wind direction. In earlier times the miller adjusted the position each day by moving a long tailpole fitted with a cartwheel so that the sails faced the wind.

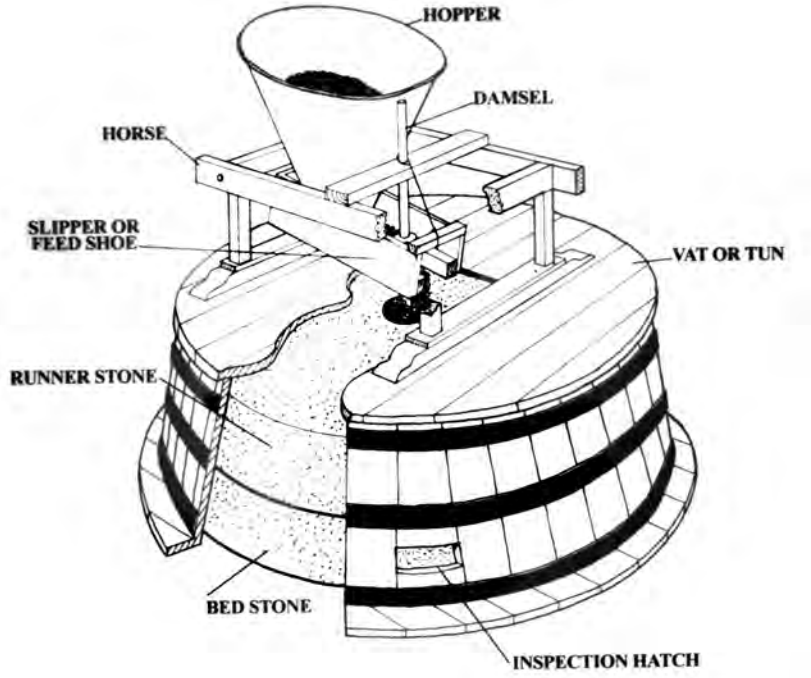
An alternative method was to harness a horse to the tailpole. Later a device known as a fantail was introduced and the mobile cap could be moved by a fantail so that the sails always faced the prevailing wind. The cap rotates on top of the stone walls sliding on a well-greased ring of smooth iron plates - known as the curb. When the wind is square onto the sails they have full power and the fantail is unaffected but if the wind veers it catches the fantail's blades and the whole cap is turned to bring the sails back into the wind. Early caps were either thatched or boarded but the most common materials were a tarred canvas on boards.

The windmill at Ballycopeland is, like our Tullynacross mill, a Tower Mill and a description of its operation would give us an idea of how the local mill operated. The windmill stump shows that there were three floors including the cap floor at the top of the building. On arrival at the mill the grain after drying possibly in the kiln would be hoisted to the top floor. The hoist is also powered from the turning of the sails. In simple terms the windmill captures the power of the wind to turn the millstone to grind the grain.

A Smock Mill

Of course it is a bit more complicated than that with the wind as a power source greatly variable not only in strength but in direction. The miller (sometimes known as the windsmith) had to be a man of considerable skill to ensure that his mill was able to work in light breezes as well, and as safely, as in a near gale.

When the grain arrives at the top of the mill it is placed in a grain bin. A chute leads to a hopper positioned above the millstones. The hopper is known as the horse - four legs and a lot of grain passes through it!!. Grain trickles from the bottom of the hopper on to the feed shoe, which is methodically shaken by the rotating 'damsel' - never silent - hence the name.



As the upper or runner stone revolves a few grains at a time are fed into the eye or hole in the centre of the stone to be ground and expelled around the stones' circumference. It is unlikely that our mill processed flour, as it required French burr stones, which were hard and suited to finer grinding. Barley was worked on Derbyshire Peak Stones. Only the upper stone revolved and it did not come in contact with the stone below. The space between the stones was minute and carefully controlled to produce the best results. The miller could adjust the gap between the stones to control the fineness. It was important to guard against stones rubbing together and overheating, since a fire in a mill was a serious hazard.

Before they were used for milling, the working faces of the stones had to be dressed, that is, marked with grooves or furrows. The furrows do not radiate out from the centre of the stone but are at a tangent to the eye of the stone. The complex design of these furrows means that the surfaces act like blades shearing and cutting the grain into fragments. The grain is forced towards the outward edges of the stone. The millstones were worn with use and had to be re-dressed. Itinerant stone dressers or journeymen, would come to the mill to carry out this function. A 'mill bill', a small pickaxe with hardened steel, was used to cut the stone and often small pieces of steel would fly off and embed themselves in the back of the workmen's hands. Stone dressers would indicate their experience by holding out their hands and "showing their metal", the tiny bluish spots where small particles of steel had lodged in arms and forearms.

But of course the most striking and evocative feature of the windmill, (by the way always referred as 'she') is the sails. Windmills had four, five or six sails, although I have read where some mills had eight. However the five sail mill was considered the most efficient. Whereas we can be reasonably sure that our windmill had a cap, we can only speculate about the number of sails it had. Early windmill sails had a simple rectangular frame upon which the miller arranged his canvas. Later a Scottish millwright, Andrew Meikle, invented a new type of sail with a series of shutters, like a venetian blind, and later variations included a roller blind system. At Ballycopeland the setting of the sails can be altered even when the mill is in motion. The sailcloth, previously canvas, is now terylene. Windmills have two doors, so that if the sail is obstructing one, the other can be used. It is said that if the sails are turning 12 times every minute then the stones are turning 100 times a minute.

Perhaps an explanation of the short working life of our windmill is contained in several references to the greatest hazard that could befall the mill. The curb or bed on which the cap revolved could became buckled through subsidence, thus hindering the free movement of the cap. If this happened, it jammed and, with a sudden change in direction a strong wind could blow off the cap and

sails leading to the closure of the mill. Although the building of a windmill was carefully planned, no one could know how well it would work until it was complete. There was a mill in Magherafelt referred to as Palmer's Folly as it never worked. It was said that the cap was blown off the night of the Big Wind in 1839.

I referred earlier to Mr. Little's suggestion that there was once a cottage hospital or infirmary near the windmill. Indeed during the course of my research, I came across references to the location of small hospitals near areas of industrial activity where, with the sort of primitive machinery and little attention to health and safety, there would have been many accidents. We may have had a small infirmary beside the mill. On the other hand there were usually a number of other dwellings associated with the mill including a kiln house where the grain was dried, the millers house and a house or houses (stables) for storing the grain.

Blennerville Mill

Speaking of accidents, one of the largest working windmills on these islands is at Blennerville in Co. Kerry. It is situated just south of Tralee on the Tralee to Dingle road and was built about 1800 by Sir Rowland Blennerhassett, an English settler after whom the village is named. It was a thriving concern where corn was ground for both the local population and for export. Unfortunately, tragedy befell Blennerhassett when a blow from a sail killed his wife Millicent and the windmill fell into disuse about 1850. However in 1982 Tralee District Council purchased it and a committee was formed to restore the mill. They engaged Dr. Fred Hammond, an industrial archaeologist at Queen's University and expert on mill restoration. Work commenced in 1984 and was completed in 1990. The complex now comprises a Craft Centre, exhibition gallery, audiovisual presentation and restaurant adjoining the working mill. It is possible that a local landowner built the Tullynacross windmill and that his tenants would have been required to take their grain along to it. In one such tenancy agreement it stated: *"The tenant shall and will at all times … grind all his corn and grain on the premises or shall by him be ground for sale at such mill or mills as the said Landlord his heirs or assigns shall at any time direct and appoint, and shall there pay the usual toll or moulter for grinding at said mills and… shall pay unto said landlord the sum of ten shillings for every barrel of corn and grain ground at any other mill or mills…"*

The mill would have entailed considerable expenditure and its erection would not have been economically worthwhile unless the landlord had been able to guarantee a sufficient number of customers. The usual toll or moulture for grinding at the mill was one sixteenth of the amount ground, which the miller then sold to defray expenses and pay his rent to the landlord. This was referred to as "hanging up the cat". The practice was later abolished and fees were paid in cash.
In England I read that there was a tradition of mistrust of the miller and Chaucer observed:
"His was a master hand at stealing grain.
He felt it with his thumb and thus he knew
Its quality and took three times his due"

An old law stated that "any miller convicted of stealing corn or meal entrusted to him to the amount of four pence or more shall be hanged from the beam of his mill". But landlords were not the only people who seized the opportunity to raise additional revenue. I read where Pope Celestine III claimed that the air used by the windmill was owned by the church and therefore the church's consent was required and a tithe payable.

Our windmill stump is over 21 feet in height and 17 feet in diameter at its base. The walls are 3 foot 9 inches thick and there are two doors and one window with two narrow apertures above the doors. I would calculate overall height complete with cap at about 30 feet compared to 33 feet at Ballycopeland. Our diameter is 17 feet at the base, Ballycopeland 22c⁄ feet. The walls of the mill slope inward and the slope is known as the batter.

Cervantes wrote of Don Quixote's famous attack on the windmill giants.
"Look there my friend Sancho Panza, where thirty or more monstrous giants present themselves all of whom I mean to engage in battle and slay".
However, it was Watt, the inventor of steam power who really slew the windmills. When steam power was applied to flour milling in the middle of the nineteenth century the decline of the windmill began. Steam power could be generated at will and as a result millers introduced steam plants to supplement the grinding capacity and then replaced the windmill with steam as the former came up for repair. The final blow to the windmill craft came when steel roller millers began to dominate the flour trade in the 1880's. Many mills were forced out of business after the 1914-18 War.

Perhaps the renewed interest in wind, as an alternative source of energy will encourage efforts to preserve what is left of our windmill heritage.

Environmentalists regularly speak about the demands for energy produced by the complexities of modern living and many claim that the increase in energy use is unsustainable. Some experts maintain that energy shortages will bring our complex system tumbling down and that we will be forced to adopt low energy technologies as quickly as possible. This will involve the use of simple unsophisticated common or garden hand tools, horses, waterwheels and windmills. They conclude that it was humanity's mistake to give them up. So the windmill stump may well be something worth preserving, not only as an example of our commercial architectural heritage, but also as a building with a future, as well as a past. In the meantime our little bit of history looks down on the village as Longfellow describes: -

I stand here in my place
With my foot on the rock below
And whichever way it may blow
I meet it face to face
As a brave man meets his foe

Replacing the cap!!!

How it may have looked