

# THE TIDE MILL

## LIVING MUSEUM

Patrons of the Tide Mill: Lord & Lady Framlingham



Features This Month:  
Nendrum Tide Mill p3  
Beetles & Trussells p5  
Wendy In Boulogne p6

PHOTO:  
ROBERT  
ZECHNER



[www.woodbridgetidemill.org.uk](http://www.woodbridgetidemill.org.uk)

## EDITORIAL

October seems to have almost slipped away, unnoticed by some of us, and it has taken the Tide Mill's open season away with it. It seems so short when you're enjoying yourself, doesn't it?

And that's what we aim to do, us helpers at Woodbridge Tide Mill. Of course we volunteer to help out at the Tide Mill because we are lovely, selfless, industrious types who would hate to see such an icon of the town and such a national treasure fall into disrepair and/or lapse into obscurity.

But the real reason we do all that high minded, public spirited stuff is because it's FUN!

Why wouldn't it be fun? Working in and/or on an ancient dusty, cold (usually), complicated, frequently breaking, wet (in places), dangerous (in places) national treasure has to be fun. Simple! Some of us can dress up to look like real workers. Some of us can get covered in mud and dust and flour. Some of us can spend a day doing almost nothing, when it's quiet - and we wouldn't get away with that if we stayed home! And the final enticement to helping at the Tide Mill is that often there is a cup of tea involved in it somewhere.

(Any helpers who do not recognise this last statement are obviously missing a trick and should try harder next season)

So, here's the November newsletter already.

I hope you enjoy it.

Ed.

[WTMeditor@gmx.com](mailto:WTMeditor@gmx.com)

## VIEW FROM THE BRIDGE

by John Carrington

The main season may be over but the Mill is still very lively. The team, led by our superb Mill Manager Dan, will be opening for wheel turning and milling demonstrations through the winter period. Look at the website for details of opening times.

As Christmas approaches, please don't overlook the excellent new range of Mill-related gifts which Dan has assembled, some exclusive to us. They would make wonderful gifts for friends and family.

All this promotional talk is by way of introduction to let you know that the Trustees have given the go-ahead for a major external redecoration of the Mill; the biggest since the restoration eight years ago. It won't be cheap, will start just after Easter 2020 and last for about seven weeks.

Finally, please don't forget the AGM to be held at 7pm on 29 November at the Shire Hall which I mentioned in the last Newsletter. If you would like to come please let us know via [enquiries.woodbridgetidemill@gmail.com](mailto:enquiries.woodbridgetidemill@gmail.com) so that we can get the catering right.



## CONTACT US

Here are live links to send emails to the contacts needed for those readers who want to contribute to the life of Woodbridge Tide Mill by volunteering for one or more of the various interesting, and fun, jobs that need doing...

If you want to put something in the newsletter (or comment on it):

**Ed.**

If you want to be a Guide:  
**Wendy**

If you want to be a Miller:  
**Dan**

If you want to be a Flour Bagger:  
**Bob**

If you want to be a Warden:  
**Dan**

If you want to be an Engineer:  
**John W**

If you want to be an Leafleter:  
**Bob or John W**

If you want to help with Marketing:  
**Simon**

If you want to help with something we have not thought of:  
**Bob**

If you would like to contribute to our Collection or Archive:  
**Fraser**

If you want to contact our Chair of Trustees:  
**John C**

If you want to be a Friend of Woodbridge Tide Mill:  
**Be A Friend**

### EDUCATION AT THE TIDE MILL



IF IT'S TRUE THAT WE LEARN FROM OUR MISTAKES, THEN SOME OF US HERE ARE GOING TO GET A GREAT EDUCATION!

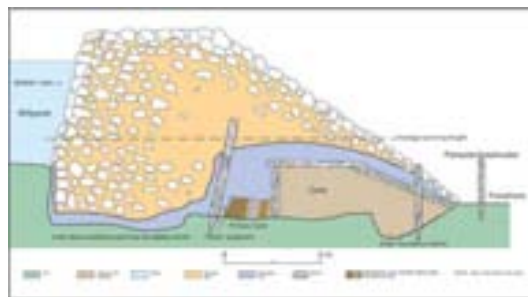


Not to put too fine a point on it, your editor has not written this article. It is a straight blag from the website of Current Archaeology, as follows:  
<https://www.archaeology.co.uk>



A tiny fragment of granite and a sherd of pottery, unearthed at the tail end of an excavation in Northern Ireland, signalled the discovery of the world's oldest excavated tide mill. Chris Catling reports back from Nendrum.

Tom McErlean and a team from the Centre for Maritime Archaeology in the University of Ulster were conducting a survey of the intertidal zone of Strangford Lough for the Northern Ireland Environmental Agency, when they came across a dam enclosing a tidal pond on the shore of the Lough, close to the ruins of medieval Nendrum monastery. A short excavation in April 1999, directed by Thomas and Norman Crothers, yielded no clear evidence for the function of the pond, nor the date of the bank, until a fragment of granite millstone and a small sherd of 7th to 8th century pottery turned up in the closing hours of the dig. 'It was one of those moments', says Tom McErlean, 'when a vital piece of evidence emerges that changes everything and the excitement of a major discovery takes over.'



The dig, scheduled to end in April, was extended through the summer and autumn, through the dark days of winter, until the day before Christmas Eve. By then, the eight archaeologists, who had spent the previous nine months working in the liquid mud, had secured

detailed evidence and a precise date for two mills: the first dated to AD 789, and, lying beneath it, the world's oldest known excavated tide mill, dating to AD 619-621.

**A fish-trap perhaps?**

But for those eleventh-hour discoveries, the opportunity to gain new insights into the economy of an early medieval monastery would have been lost. The triangular pond

alongside Nendrum monastery, enclosed by its stony, seaweed-covered dam, would probably have been classified as a fish trap of indeterminate date — constructed to provide the monks with a supply of fish to eat on Fridays and other days of abstinence, when devout Christians symbolically remember the privations of Christ's Passion by denying themselves the luxury of meat. This oft-quoted facet of monastic life ignores the reality of the monastic rule, as drawn up by St Benedict (c.480 — c.547), founder of western monasticism, which stresses moderation in all things, including diet. Chapters 39 and 40 of the Rule specify that monks are only allowed to eat two meals a day, and that they should consist principally of bread, with a daily allowance of 1lb a day for each monk. Meat is prohibited except for the sick and the weak.

So bread, not meat or fish, featured large in the monastic diet, yet there is comparatively little evidence for its production. Water mills with a vertical wheel, a type employed since antiquity and described by ancient Greek authors such as Philo of Byzantium and Strabo,

rarely survive in the archaeological record — their presence is largely deduced either from the existence of a millpond, mill race, leet or aqueduct designed to bring water to the millwheel, or from the sunken remains of a wheel housing.

'By contrast', says Tom, 'salt, sea or tide mills survive relatively well, because of their watery environment. The wheelhouse of a tide mill is largely an underground structure, relatively well protected from later agents of destruction, and waterlogged for much of the time.'

**A giant water-storage tank**

Tide mills depend for their power on the water stored in a millpond, which is constantly refilled by the twice-daily rise and fall of the tide. To keep that water in place at Nendrum, a long dam was constructed, about 110m in length and originally 6m wide, reaching from shore to shore to form a triangular enclosure. The dam consisted principally of an impermeable bank of orange clay, held in place on the seaward side by massive



timbers, stitched internally by a framework of wattle revetments and faced on the landward side with large boulders packed with more orange clay. The floor and walls of the millpond were also made impermeable with a sealing layer of grey clay.

The two-storey mill building sat at the eastern end of this bank, with a wheelhouse below and a millhouse above (see box on page 31). Protruding through the bank was a narrow timber chute, called a penstock. Opening a sluice gate enabled trapped tidal water to escape from the pond down the chute, from which it emerged at high pressure to hit the paddles of a horizontal water wheel. This was connected to a vertical shaft that turned a millstone on the floor above.

Dendrochronology has dated the construction of the first tide mill at Nendrum to AD 619—621 — some 20 years after the death of St Columba, the Irish missionary who took Christianity to Scotland and who founded the monastery on Iona, and a year before the founding of Islam in AD 622.

**How the mill worked**

Sea water is stored in the millpond and is released through a narrow chute, called the penstock. The penstock has a downwards incline of about



15 degrees and narrows from top to base to act like a pressure hose. The mill itself is a two-storey structure that sits above the exit from the penstock and the lower storey houses a horizontal water wheel with spoon-shaped paddles.

The advantage of a horizontal wheel is that it needs no intervening gears to turn vertical into horizontal motion. The water that emerges at speed from the orifice of the penstock hits the paddles and turns the wheel, which is connected directly to the millstone by a simple vertical shaft.

The shaft passes through the ceiling of the wheelhouse to the floor of the millhouse, where it is attached to the upper stone of a pair of millstones. Grain fed from a hopper into the 'eye' of the upper stone is ground between the moving upper stone and the fixed lower stone.

The function of the bridge tree and lightening tree was to enable the gap between the upper and lower millstones to be varied: a wider gap was used to dehusk the grain and produce coarse meal, and a narrower gap was used to make finer meal and flour.



**SCHOOL REPORT by Heather Sheehan**

As I wrote in a previous 'School report' we were lucky enough back in May to receive a substantial sum of money to help fund a project to work towards getting more schools from within the AONB to visit the Mill and as such it's been a busy start to the school season. During October we welcomed three classes from both Waldringfield Primary and Thomas Mills High School. The children varied in age from 7-16 and thus were studying a range of different topics. The primary children were looking at food production and they thoroughly enjoyed learning about how flour is made and seeing its journey from grain to mouth. They were so enamoured with their visit that many of them proclaimed it to be 'the best school visit they had ever been on'! A week later the tone shifted from food to history as a group of 31 French exchange students from Thomas Mills visited and wanted to learn more about the origins of the Mill. The beauty of our wonderful mill is that it does appeal to all ages and covers a range of curriculum themes and we're looking forward to welcoming four more schools in November each of whom are looking to learn about different things.

Along with all the school

visits we're also continuing to build upon the success of 'Crafty Mornings at the Mill', a new initiative we launched in the summer. The sessions proved a great success and as a result we're holding another this half term. Watch this space for a full report on how we get on making some Halloween themed spiders and ghosts!

And finally, we're very excited to be teaming up with Kids in Museums to take part in their 'Takeover Day' this November. We shall be inviting some local primary school children along to quite literally 'take over'! The lucky pupils will be milling, curating and guiding for us and we can only hope that they are not so good as to put us all out of a job!



PHOTO: JOHN WOOD

**THE MILLER'S CHRONICLE**

**By Dan Tarrant-Willis**  
[dantarrantwillis@yahoo.com](mailto:dantarrantwillis@yahoo.com)

The summer season is coming at the end we have managed over 100 milling demos and over 100 milling sessions. Next week we are doing demos every day to compliment The Riversides Trust's 'Go with the flow' exhibition in the Long shed. looking back it's been a very busy session. Yesterday,

**This year's production of our super flour to date is 5740.31kg.**

(12,655 1/8 lb Ed.)

we had our last delivery of grain for the year, that this year, has all come from Halesworth.

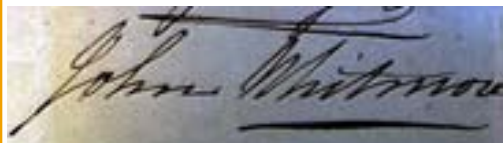
We are now looking forward to the relative calm of doing demos for the public during our winter season and supplying our regular customers.



## CURATOR'S CORUSCATIONS

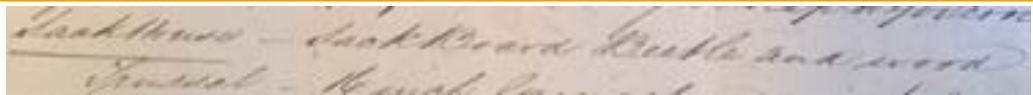
By Fraser Hale  
Of Beetles and Trussells,  
Buskins and Pastry

In 1947, at the behest of the owner, Geoffrey le Mare-Atkinson, the contents of the Tide Mill belonging to the tenant were independently inventoried and valued. A certain John Whitmore shouldered the task.



The rather informal document that Mr Whitmore produced was, nevertheless, witnessed and officially stamped, and it was probably commissioned for insurance purposes.

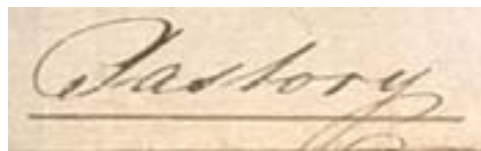
Aside from providing us with an under-standing of the hardware involved in the milling process, John's list is full of lengths of strapping, chain, and sacking, this humble yet unique document reveals some fascinating terminology.



Found in the Sackhouse, John lists a "Sack Board Beetle and wood Trussel"

A Beetle is a kind of wooden hammer or mallet, and would probably have been used for knocking the Sack Boards into place – Sack Boards helped to keep sacks of grain from toppling over when stored in quantity. A trussel is another word for a trestle – it would likely have had sack boards placed upon it to form a second level on which to stack sacks (or possibly to lift sacks clear of high tides).

One of the inventories locations is listed as "Pastory".



Pastory seems to be an alternative spelling (or a mis-spelling) of Pastry. Pastry is an East Anglian term for a meal-store within a mill. This was probably a boarded off area in what is now the mezzanine floor of the Tide Mill.

Whitmore lists items that he refers to as "Flour Buskins".

These are pretty



mysterious – I have not yet found a solid reference to this term in relation to milling – however in the malting and brewing industry of the time, workers would wrap their boots in buskins (a Middle-English word meaning 'half-boot) made from jute sacking. The wrapping helped to keep their footwear clean and dry as well as protecting any product that they might have had to tread upon in the course of their work. While it is only speculation, it doesn't seem unlikely that perhaps millers did the same thing in order to keep their boots relatively free from dust. My research will continue.

There are any number of tantalizing references contained in this document. One which surprised me most is connected with a familiar object, rather than one obscured by arcane language. The candlestick. There are at least six candlesticks recorded in the Mill, and just two oil lamps. Given the all-wooden structure, and the flammability of wheat flour dust, this ratio seems the wrong way around.

### BUSKER'S CORNER

If you want a good flour you must use a good wheat,  
When you grind a good wheat then your flour can't be beat,  
So a good miller's aim is to chat up the farmers,  
Though not all good millers are natural charmers,  
Which leads to grain merchants, a possible source,  
As selling good grain is their calling, of course,  
And the miller's mill business will thrive in this way:  
When the miller knows grain, at the end of the day.



### WHAT IS THIS, AND WHAT DOES IT DO? Answer on last page



**WENDINGS**  
by Wendy Reid

**The Adventures of the Emily Barratt ... Boulogne Sur Mer, episode the fourth**

When I was 11, my father bought a boat ...

After mooring in Boulogne harbour, I went ashore with my father to get provisions leaving the others on board. I was struck by how different this town was from home; the women all wore black and everywhere I looked there were men trying to sell watches.

After a while we found some shops. We were after fresh milk and beef for stew. We failed on both counts.

Firstly, the only milk available had been sterilised, what we call UHT milk these days. Now, I knew that there were children at my school that had sterilised milk but in my own home it was looked down on because sterilised milk was the cheaper option. We only had fresh milk and, having no fridge, often sour milk too. Nonetheless, as the only option, father and I bought the sterilised milk in those tall, thin glass bottles.

Then on to the butcher's where my father bought the meat. Unfortunately, my father's French let him down and he was met with incomprehension. He tried performing a very good impression of a cow, charging up and down the shop, fingers

sticking up from his forehead to represent horns, and mooing loudly whilst pawing the ground in full charging bull mode. Something must have clicked with the butcher and finally we were sold a packet of meat. Semi-triumphant



we returned to the boat, where my mother declared it to be horse meat. Having lived through two world wars she knew. We were comprehensively dressed down but my mother made everything into delicious food so nobody except us knew the provenance of the meat.

Now the Emily Barrat was blessed with an old Perkins diesel engine, installed after the war when she was handed back to her owners.

This particular engine requires two items to start: first, paper cartridges were lit and screwed into her cylinders and then compressed air from a tank stored in the engine room was used to start the engine. This took most of the air but when the engine was running a switch was thrown so that a small compressor could fill up the tank again. Well that's what should have happened.

When it was time to leave sunny Boulogne we realised that there was no air in the tank. This was somewhat of a concern. After all we wanted to get back the land of beef steak and daily fresh milk deliveries. First we tried

compressing some air using the donkey engine on deck. Copper pipe was run along the deck to make the connection. Huffing and puffing this even older engine was coaxed reluctantly into life. It belched black smoke over everything, made an enormous noise and

failed miserably to help with the production of compressed air. There was nothing for it but to try and buy some from the French.

Given my father's luck with the 'beef', I wasn't too sure he could pull it off!

However, the maritime spirit of assisting those in need made all further communication easy. No problems with miming the issue or getting a compressor set up on the quayside. It was dead low water when the guys arrived with the gear which meant an awfully long run of copper pipe to the tank in the engine room. Much sucking of teeth and shrugging of shoulders later the gauge shot up to full, the engine started, and we were underway. Bound at last for the east coast and a new home, alongside a tide mill at St Osyth in Essex.

**ENGINEERING GAZETTE**

**By John Wood**

The winter is coming and gradually the temperature in the mill begins to drop following the outside conditions. Unfortunately due to the mills structure it cannot warm up quickly even if the sun does appear. However it is essential that all parts of the mill are kept in good working order and of course we have to sell flour all year round, so the millers and baggers must continue to attend.

The monthly engineering maintenance continues, together with other required regular testing. It is also essential that the main waterwheel is moved to a different position each day to prevent it becoming water-logged and out of balance, which results in poor flour and dangerous handling.

So very well done to all those who commit time to the mill in the winter, and many thanks to the electric kettle and tea bags.



**WARDENS' DIGEST**

We are happy to report that this summer season has seen more visitors than last year. Particularly younger people and their families. So much so that we decided to stay open for all of October rather than just weekends and half term. This has proved successful so is likely to be continued next year. The Tide Mill has been hired for more parties and events than in previous years. This is also encouraging as it's an area of the Tide Mill's community value that we would like to expand on in coming years. Please let people you know that they can hire the Tide Mill for events - details in the left-hand panel.

**Dan Tarrant-Willis**

**HAVING A PRIVATE DO?**

Did you know you can book **Woodbridge Tide Mill** for your own private evening function, for as little as **£110.00** (see below), subject to availability in the mill's Events and Appointments Diary.

Contact Dan at [enquiries@woodbridgetidemill.org.uk](mailto:enquiries@woodbridgetidemill.org.uk)

(Friends of Woodbridge Tide Mill are charged £100.00 plus £10.00 for clearing and reinstating the counter area.

The general public are charged £125.00 + £10.00.

There are three optional extras, such as wheel turning, milling demonstration and guided tour, that total £35.00 if all are possible and included.)



Don't forget that the best way to ensure that you continue to receive this newsletter (regardless of all the other benefits) is to keep up your membership of The Friends of Woodbridge Tide Mill. If you are not already a member, but would like to be one, use this link: [Be A Friend](#)



**Did You Have A Good Visit?**

If you enjoyed your visit to Woodbridge Tide Mill recently, or in the past, please let everyone know so that they can share experience your enjoyment by posting a message on [tripadvisor](#)

**Diary Dates for 2019**

**Wheel Turning and Milling Demonstrations**

**Water Powered Milling Demonstrations** will take place in November at 09:30 on 2nd, at 10:00 on 3rd, at 16:00 on 9th & 10th, at 09:30 on 16th & 17th, at 15:00 on 23rd & 24th.

Apart from the milling demonstrations, powered wheel turning will **NOT** take place for public viewing in November.

Check this link for times on all other May days: [Turning & Milling](#)

**Other Events**

Halloween at the Tide Mill with The Company of Four

31 October & 1 November. 16:30 - 21:45

For full general mill working times use this link to the website: [Turning & Milling](#)

**Correspondents: all copy for next month to be sent to [WTMeditor@gmx.com](mailto:WTMeditor@gmx.com) by the middle of December please.**

**Other Tide Mills Worth A Visit**

Woodbridge was the last commercially operating Tide Mill and, out of an apogee in excess of over 200 in the UK, is now one of only two Tide Mills still producing flour for retail to the public, the other one being at Eling, on the edge of the New Forest in Hampshire.

Use these links for more information:

[Eling Tide Mill, Hampshire](#)

[Battlesbridge Tide Mill, Battlesbridge, Essex \(converted for business\)](#)

[Carew Castle tide mill, Pembrokeshire](#)

[Thorrington Tide Mill, Thorrington, Essex](#)

[Three Mills tide mill, Bromley-by-Bow, London \(aka House Mill\)](#)

[Clock Mill tide mill, Bromley-by-Bow, London \(aka part of Three Mills\)](#)

Go to [Wikipedia](#) for more

**WHAT IS IT? ANSWER**



This is the lower horizontal shaft of the sack hoist system. The small horizontal shaft is driven by a large gear wheel on the main vertical shaft.



**PURPOSE:** The purpose of this newsletter is to support and advance the objectives of the Trustees of Woodbridge Tide Mill. The newsletter provides all supporters a forum of their own, together with information about current and future events and it is hoped it will foster a sense of common interest and shared identity; encourage increased participation and entertain.

**EDITORIAL POLICY:** The editor has full editorial responsibility for the newsletter. Articles that appear and views expressed are not the official position of the Trustees on any subject, unless specifically noted as such. Items submitted for inclusion may be edited for grammar, style and/or space requirements and contributors wishing to be alerted of any changes prior to publication must notify the editor at the time of submission.

**IMAGES:** Unattributed images are by the article author or Ed.

**DISCLAIMER:** The Glenn Miller gag cartoon does not make a comment about any real helpers at WTM.

