Medieval History links

Most of the Friends of the Ship will be aware of the rich tapestry of history surrounding our every day lives. If you live near the ship, the chances are this will include impressive Victorian buildings, buildings scarred by or involved in the Chartist movement and uprising, industrial history from mines and steelworks to the World Heritage Site of Blaenavon with it's massive ironworks, huge Roman remains such as Caerwent and the sites at Caerleon and all the way back to prehistoric sites such as the hill fort on Twm Barlam north west of Newport.

On moving to Tenby for work a little more than three years ago I discovered the building I was living in to be above a tunnel from another building across the road (now occupied by Boots (the chemist)). I grew up with stories of priest holes, a tunnel and nearby Island used by Charles I to hide from Oliver Cromwell's 'modernising' revolutionaries. Some were true and others quite unlikely.

However, the tunnel below my Tenby home seems to be well documented, and I'm really pleased as Chairman of the Newport Medieval Ship to note that it's a Medieval tunnel. Henry VII (Henry Tudor) hid in the tunnel with his uncle Jasper (Earl of Pembroke) in before escaping to Brittany in 1471. In 1485 he returned to Pembrokeshire, landing at Dale, to challenge and beat Richard III at Bosworth and become the first Tudor king. A whole new dynasty!

Tenby received its Mayoral Charter from Henry IV



in 1402 and its harbour dates from the Middle Ages (the old part of the town is still surrounded by the Medieval town wall and it's towers) making Tenby a very wealthy town in the C14th and C15th when the Harbour was at it's peak, receiving ships from Portugal, Spain and France. They arrived with wine, oil, salt and fruit, and returned with wool, coal (the South Wales coal field reaches almost to Tenby) and animal hides. It's quite possible the Newport Ship stopped off at Tenby, possibly even on her last trip, before arriving at Newport – her final port of call.

Does your home, workplace or village have links to Medieval history? Do you live alongside an historic medieval site? Does your home have medieval features? Do you have medieval artefacts in the family? Do let us know about your links with the time of the Ship.

Emma Lewis

STOP PRESS

The Friends of the Newport Ship have just received a £4000 grant from the Welsh Church Fund to underwrite the archaeological illustration work. The items to be illustrated include the rigging, wooden bowls, and wooden combs.



Solo Solo Sthe Newsletter of the Friends of the Newport Ship

The Matthew at Bristol.

The composer Mark Latimer is creating a programme of music based on European journeys inspired by the Newport Ship. The replica of John Cabot's ship the Matthew could be involved with the project.

No. 18

£2.00

Spring 2011

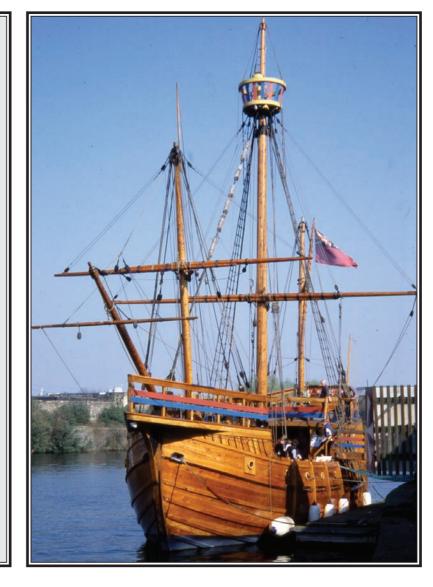
Free to Members

The Friends of the Newport Ship C/o FWD Law, Clifton Chambers, 12 Clifton Road, St. Woolos Newport, NP20 4EW www.thenewportship.com Telephone: 01633 215707

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The views given in this newsletter are those of the contributors and do not necessarily represent the views of the Friends as an organisation.



Letter from the Chairman

Dear Friends.

Work on the Newport Ship carries on apace, and work done with the ship. while the ship's professional team are now a small but dedicated band, progress is good. The ship will soon be freeze-dried following its PEG treatment – the water has been replaced in the of the moisture and excess PEG will be driven out by freeze drying. The model of the ship, a Friends at all the Open Days, including the useful tool for putting her back together, is complete and very impressive (do come and see it on an open day if you can) and - wonderful news – Toby Jones and Nigel Nayling (who has secured a sabbatical from his University work) are writing up the work on the Ship. This will be an important paper, which will be peer-reviewed and importantly for the Friends will help secure funding for the next stage with the ship - her display. We look forward to reading the paper,

and to the academic weight it will bestow on the

The Open Days this year are themed, and you may choose to come and see the ship and be enlightened on aspects of medieval music. medicine, food and trade. Or come to the timber with polyethylene glycol wax, and the last December Open Day for a sample of medieval Christmas. You will be able to meet fellow Committee, and also the Ship team, who will explain the work on the ship, some of the high and low tech tools they use and what happens

We're looking forward to seeing you at the Open Days and other events - keep an eye on our website; www.thenewportship.org.uk.

Yours faithfully, Emma Lewis, Chairman, Friends of the Newport Ship.

Open Days 2011

This rare piece of Newport's heritage opens its doors to the public on:

- Saturday 16th April 11am 4pm Medieval Music and the Newport Ship. Musical trio Blast • Saturday 3rd December 11am - 4pm from the Past will be performing throughout the day, discover more about the hurdy gurdy, and be greeted at the door by a medieval merchant. The Freemen of Gwent and the Sons of the Dragon will also be on hand with cookery and archery displays. Watch a leech feed live at 12pm.
- Saturday 23rd July 11am 4pm Medieval Medicine and the Newport Ship. Our medieval barber surgeon will leave you feeling queasy with his tales of blood letting and amputation whilst our herbalist will cure you of your ailments using plants and flowers.

- Saturday 20th August 11am 4pm -Medieval trade/food & drink. The tales of the leather trade will be revealed by Cardiff Castle Garrison, make your own castle to take away and a customs officer provided by Wythe Retinue will discuss trade in the river Severn.
- Medieval Christmas and the Newport Ship. Get into the festive spirit medieval style with carols by the Minstrels of the Forest, find out how the medieval household celebrated Christmas and make your own pomander.

Open days are FREE and suitable for the entire family. Visitors will have the opportunity to talk to members of the ship team, find out about the excavation and the campaign to save the ship. through tours of the facility by Friends of the Newport Ship. Visitors can also take part in family craft activities and discover more about medieval life through re-enactors and displays. For further information please contact

Emma Routley, 01633 656656

The Newport Ship is now on Facebook and Twitter!

Friends of the Newport Ship and the rest of the online community will now be able to access news. updates and event information for the project via the social networking sites Facebook and Twitter. It is hoped these sites will provide the project with a platform for reaching new online audiences, as well as being a way of distributing up to the minute information and news about developments. You can check out our sites at the following addresses:

> Facebook: http://tinyurl.com/newportshipfacebook Twitter: http://twitter.com/NewportShip **Morwenna Perrott**

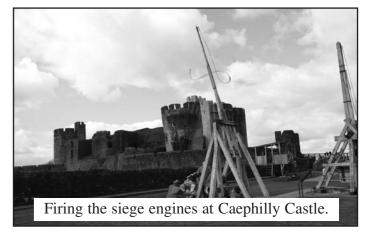
Medieval Life at a Castle

This year there are opportunities to see Medieval times brought back to life at Caerphilly Castle one of the largest in Britain, and also one of the closest to the ship. Caerphilly is North West of Newport and accessible by bus and train - the Castle is in the centre of the town, and dominates its surroundings completely, giving a sense of the dominance all castles would have had in Medieval times.

There will be a medieval camp, cooking, crafts, clothing and members of the castle household. You will be free to wander around the encampment and meet the re-enactors, and also watch one of the historic events from the castle's history unfold throughout the day. You will also be able to watch the archery practice and training which was critical to medieval castle life, and watch the Bowmen of the Rose shooting Bob. the target head and even shooting apples off the head too! Mike Jones, who won't be at the Open Days this year will be there, and you can discus medieval life and see his collection of accurate medieval period bows, arrows and other equipment there too.

The Company of Chivalry, whose encampment and entertainment you can enjoy will also be firing the mighty siege engines - they are the only people who fire them, so these weekends will really be special as the siege engines will be fired several times each day.

Come to the Castle for a taste of medieval life on 1st and 2nd May and the Late August Bank Holiday weekend. Following my longbow training





I hope to be joining the fun this year so come along and see how I do. Check out www.yecompaynyeofcheualrye.com and CADW's website.

Emma Lewis

Visit history in Newport

Those local to Newport and interested in it's history in general may be interested to visit 'The Gatehouse Heritage Centre', upstairs at Newport Market - a remarkable building and working market, worth a visit in it's own right. The Gatehouse Centre is open on Tuesdays, Fridays and Saturdays from 9am to 12 noon, and it's exhibitions mostly consist of photographs and music, and is a great place to discus local history and even reminisce. Those unable to visit in person may wish to visit the Gatehouse online at www.jeromegatehousecollection.org.uk

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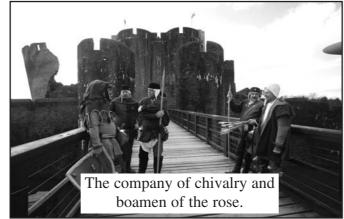
Clifton Chambers, 12 Clifton Road, St. Woolos, Newport NP20 4EW telephone: 01633 660440

A Taste of Medieval Life - Learning the Longbow

I have just come back from Sunday practice (just like my fellow medieval practitioners), elated from hitting gold now my troublesome thumb is staying out of the way. Inspired by Mike Jones' displays and talks of medieval archery equipment and practices at the Newport Ship Open Days, I decided to get a little bit closer to medieval life by learning the basics of longbow archery, and chose Underwood Archers (2-5, Sunday afternoons, Underwood Leisure Centre, beginners very welcome), and I asked Mike to accompany me as he knows more about longbow archery than anyone else I know; he's been shooting them for nearly 40 years.

Learners start with the club's beginners' recurve bows, but, bewildered by the array of recurve, bare, flat, hunters' and compound bows (which look like something out of the Terminator movies) I wanted to learn the real deal – the longbow, without the aids on the other bows – sights, stabilisers, arrow rests, triggers and so on. I was assigned Hazel as my coach and she has been excellent - and is a longbow convert herself. A longbow is a piece of wood with a bit of string and a bit of thread to mark the arrow point on the string. That's it. But the longbow is the pure form, and when you hit the gold (as I did, to my joy, today – have I mentioned that already?) you've done it all by yourself. Your stance is perfect. Your shoulders are back, head up, the bow is properly drawn, the arrow is properly 'knocked' onto the bow, your right thumb is out of the way and your aim is elevated for the distance of the target. You have done it all yourself. With the assistance of those Medieval throwbacks, the teacher (Hazel), the bowyer (Richard Head, one of the best in Britain today) and the fletcher (Mike Jones, who made the arrows specifically to fit the bow I've borrowed from him).

The funny thing is, in the half a dozen sessions I've had at Underwood Archers, Hazel got me through the beginners course in the 'difficult' longbow in a shorter time than usual (her coaching, not my talent), and several other archers who had chosen other types of bow are now choosing to shoot longbows. They can see the joy and satisfaction of the pure form of the sport. And maybe, as men and women (mostly) of Gwent, they can feel their ancestry right back to the famous archers of Gwent, who slaughtered their way across England and France in the 1400s with the medieval weapon of mass destruction, means of getting meat for the family meal and compulsory tools for practice on Sunday by every man and child in the kingdom life with the medieval longbow. And yes, I am



feeling a connection with the medieval archers – they must have had to master the same stance, aim, loose (of the arrow) as me, and I now have my own made-to-measure leather wrist guard, just like the customised leather wrist guard found with the ship, used by a medieval archer who also used the longbow. I have started as an adult and not a child as in Medieval times, but the skill and the physical shooting of the bow haven't changed since the archers who sailed on the Medieval ship.

Come along and see Mike Jones and the Bowmen of the Rose at Caerphilly Castle on 1st and 2nd May and the late August Bank Holiday weekend with the Company of Chivalry for an excellent day – of medieval life in the castle and the medieval conflicts there between the English and the Welsh. I have an invitation to join them for their Caerphilly events this year, and I hope to be joining them in medieval clothing – come and see if I can hit an apple off the dummy head (as Bowmen of the Rose do), but I think I may leave the 'shooting 2 arrows off the bow at the same time' to them – this year, at least.

Check out www.yecompaynyeofcheualrye.com **Emma Lewis**



Update for spring 2011 - Joby Jones

Since the last newsletter, the Newport Ship team has finished the scaled ship model, documented additional artefact groups, and engaged in extensive community outreach. In addition to attending foreign archaeological meetings, the team has written articles and sections for books, and are currently using the 3D model to create a mock-up of the original hull form. The archaeologists have been updating the ship centre displays in anticipation of the first open day on 16 April 2011. The education and outreach portion of the project continues to excel, with a large medieval townscape being painted and installed at the ship centre. The team is also evaluating the required and desirable attributes for the potential future display of the ship. The ship timbers are in PEG pre-treatment and are moving ever closer to being prepared for freeze drying.

The Arts and Humanities Research Council (AHRC) has supported the creation of the 3D laser sintered 1:10 scale model of the excavated remains of the ship with a grant called ShipShape. The team has laser scanned the model and used that data as a basis for creating a lines plan of the hull form. This work will be detailed on the newly redesigned display boards that greet visitors as they enter the ship centre, which the Friends have generously co-funded.

The Newport Ship Project has recently received a follow-on grant from the AHRC called

ShipShape Communities. The £40,000 grant will be used to create 3D presentations of the reconstruction of the ship. A group of Friends will be invited to the VISTA (Visual Spatial and Technology Centre) visualisation centre at the University of Birmingham to experience the ship in 3D. This will take place in the late

summer/early autumn 2011.

Analytical work is proceeding on the various artefact assemblages, such as ceramics, stone, and the rigging. An archaeological illustrator has been hired to make detailed drawings of the best preserved items. On a related note, the ship pump tube (complete with pump spear) has been CT scanned by the Royal Gwent Hospital. Armed with this useful 3D imaging (which allows us see inside the tree trunk that forms the outer casing of the pump), we are now planning the excavation and cleaning of object, prior to conservation.

Public interest remains high, with the ship team delivering lectures and tours to over 800 people in the first three months of 2011. Lectures in the US and Norway were well received, helping the ship project retain its international profile. The guidebook continues to sell well at events like these. These talks often result in the team taking numerous additional bookings and have led to increased FONS membership in areas outside of Newport.

On a final note, the Newport Ship will be hosting the next Faro-Rhino Archaeological User's Group (FRAUG) meeting in the spring of 2012. This is an international gathering of marine archaeologists who use the same 3D recording tools and modelling techniques utilised here in Newport. The past meetings have been immensely helpful, with new ideas and innovative methods being shared between projects. We are all looking forward to the first ship open day in April!

Thank you for your continued support of the Newport Ship!

The Fish Have Moved

Some of the fish born in the tanks where the ship has been held have moved home. Having been raised catching and eating delicious little bugs (which were trying to eat our ship) they did their bit to conserve the ship and other timbers, and have now retired to live with Francis Maxey, whose late wife Kate Hunter (Project Leader of the Ship) had the idea of using fish to eat the ship's bugs. The fish are growing well and survived a harsh winter quite happily in their new pond. A fitting home for these unsung ship workers. Some of their brothers and sisters can be seen at the Ship Open Days this year.



Francis collects the fish.

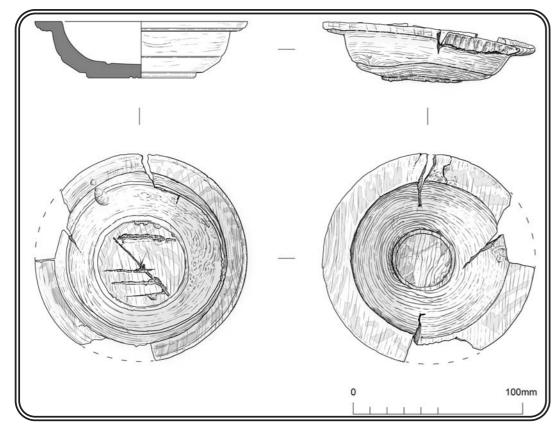
The Newport Ship Bowl with some Mysterious Features

Continuing our spotlight on artefacts from the Ship's assemblage, this issue looks at an inconspicuous object with some enigmatic characteristics. It is a small wooden bowl, about 12.5cm in diameter, and may have belonged to one of the ship's crew for eating out of. Concentric circles around the bowl indicate that it was made by being turned on a lathe. The bowl is rather small and it is possible this was done as a standardising practice to help ration food over a long voyage.

However the most intriguing aspect of this object is some curious marks on the base of the bowl. The picture shows these lines, carved in the form of short, angular marks with three shorter lines emitting from one end. What were they for? There are examples of bowls from the Mary Rose with similar looking marks, which could have been made for several reasons. Official stamp (which includes marks of an organisation such as the navy or of a noble family) has been ruled out as a possibility as these would have been more refined. It is more likely that they denoted ownership, such as initials or a personal sign, or were used as protective devices.

These devices are particularly interesting, as people would have used symbols to represent a particular deity, for example, in the hope that they would bring them protection or good health. Examples of these symbols include a triple overlapping and inverted V to represent the Ave Maria, whilst a triple W, could stand for 'virgin of virgins', i.e. the Virgin Mary. There were some very elaborate ones found on the Mary Rose bowls, such as the number '4' on a forked stem, which is indicative of the tool that the Greek messenger god Hermes carried, but also resembles the Greek letter 'Rho' that forms the second part of the earliest name for Christ. As well as this, the inverted V marks which form the forked stem were a well known device representing Christ the Redeemer, and it is this inversion of the letter that bears the most significance for the mark on the Newport Ship bowl. Nevertheless it is still rather a mystery what its marks mean, and the ship team will keep the newsletter readership updated with any discoveries they make. In the meantime, we welcome any suggestions which could help complete the story of this most mysterious object!

Morwenna Perrott



IS ANYTHING NEW?

Fashion goes round in circles and culinary have to mix the ingredients. Remember u and v fashion is no exception. Today all supermarkets have a choice of quiches; open any magazine and you'll find yet another recipe for a tart or guiche. The same was true in the 1960s when they had also been in fashion and everyone was cooking them, but they go back rather further than that! You might find this recipe from Harleian Manuscript 279 from c1430 has a familiar ring to it.

Medieval recipes might look daunting at first sight but deciphering them is not actually that difficult: try reading aloud, sounding out words rather than just looking at the printed form. Think around words such as see - (That funny is an Anglo Saxon letter called thorn. It's what is so often used in signs 'e olde tea shoppe'. It should be pronounced as a 'th'.) Have you heard someone say they were seething meaning they were angry, or more strongly, boiling with rage? So when you read 'see hem in water' you know you have to boil something. The influence of Old French is still apparent: we find the word melle. We use the word mêlée for a crowd, and when we describe people as 'milling around' we mean they are moving around and mixing. So when you read 'melle hem to-gederys' (ie. together) you can guess you

were interchangeable. A cofyn was a case of pastry, in this instance a sort of flan case.

So try this recipe for Doucettes:

Take Porke, & hake it small, & eyroun y-melld togederys, & a lytel Mylke, & melle hem togederys wi Hony and Pepir, & bake hem in a cofyn and serue forth.

Or in modern terms:

Small packet of lardons, or bacon or gammon,

2 eggs

1/4 pint milk

1 tablespoon honey

Freshly ground pepper

Line a 7" tin or flan case with pastry. Put the meat in the bottom of the pastry case. Beat together eggs, milk, honey and pepper. Pour the mixture over meat and cook in a moderate-high oven for 30-35 minutes.

And you thought quiches were a modern culinary fashion!

Trish Hayward

Friends of the Newport Ship **Calendar of Events 2011**

16th January

Monday Talk on Medeival Herbal medicine at Conservation centre 6pm

19th January

Wednesday Evening pub talk by Morwenna Perrott 7.30 pm

16th February

Wednesday Evening Pub Talk

16th March

Wednesday Evening Pub Talk

16th April Open Day

20th April

Wednesday Evening | Pub Talk

18th May

Wednesday 2pm Teas for large group visiting ship

11th June

Gwent Family History Soc

Not yet confirmed

2nd July

Saturday Machen Show

23rd July Open Day

13th August

Saturday Chepstow Show

20th August

Open Day

10th September

Glamorgan Family History Fair

Merthyr Tydfil To be confirmed

18th September

Sunday Vintage Car Rally, Tredegar

House.

3rd December

Open day

FRAUG

The Faro and Rhino Archaeological User Group (FRAUG) was established in 2006 by Nigel Nayling and Fred Hocker as a research network for individuals and organisations using the Faro Arm contact digitiser and Rhino CAD software to record ships and ship timbers. The first FRAUG meeting took place at the Viking Ship Museum in the Roskilde in 2006, and consisted of representatives from the Roskilde Viking Ship Museum, Denmark, the Vasa ship, Sweden, and the Newport Ship Project. Membership of the group has grown significantly since its establishment, now including representatives from the Drogheda boat project, Ireland, the Norwegian Maritime Museum, Norway, Doel Kogge project, Belgium, Rijksdienst voor het Cultureel Erfgoed (Netherlands) and the Bremen Cog project, Germany. Many maritime archaeology students of the Southern Denmark University are also members. The next two meetings were held in Sweden in 2008 and 2009 at the Vasa Museum. In 2010 Southern Denmark University, Esbjerg, hosted the meeting and combined the visit with a very successful Faro and Rhino training course for their maritime archaeology students, taught by members of the Newport Ship team.

The aim of the FRAUG group is to share ideas, discuss best practice for the digital recording, digital and physical modelling of ships as well as exploring methods of reconstruction and model making. The group share templates and layering systems used in the recording process and provide manuals to projects in the early stages of recording. By sharing this kind of information, the groups involved are developing a common visual language and, in the process are breaking down traditional language barriers and establishing a common method of digitally recording shipwrecks. This visual language allows for records to be immediately understandable to others and allows for easy comparisons to be made through the use of specific colours and symbols used to record certain archaeological features on timbers. The group is in the processes of setting up a website which will facilitate the free dissemination of ideas and provide a forum where problems and ideas can be discussed.

On the 18th and 19th of March, two of the ship's team, Toby Jones and myself, Erica McCarthy, as well as external project archaeological consultant Nigel Nayling, attended the fifth annual FRAUG meeting at the Norwegian Maritime Museum in Oslo. The morning started with project updates by the Newport Ship, the Barcode Project, the Drogheda Boat, Roskilde and the Doel Kogge. A representative from the flat bottomed ship of Dusseldorf- Kaiserswerth also spoke to the group of their intentions to record the vessel they recovered from the Rhine. Pat Tanner from the Traditional Boats of Ireland project explained his recent work laser scanning traditional boat models in Ireland. Morten Ravn, formally of the Roskilde Viking Ship Museum, discussed his plans for his future PhD project at the University of Copenhagen. The afternoon consisted of open discussion between members where topics included the available options for publishing 3D data, accessible archives and data migration. The group also discussed the possibility of a cross institutional, inter disciplinary collaborative project in the near future. The following day the group visited the Norwegian Viking Ship Museum to see the Oseberg, Gokstad and Tune ships.

The meeting was a great success and it was decided that next year the Newport Ship would host the FRAUG meeting in Newport. To host a gathering of maritime archaeologists from around the world is a great opportunity for the Newport ship project and the ship team are looking forward to it already. Dates are yet to be confirmed but watch this space!

Erica McCarthy

(remieu

found in the bow of the Newport Ship for five years and have turned over £13,000 from sales for the Friends' funds. The coin was struck originally in the Mint situated in the small town of oil and set alight! Cremieu, which is outside Lyon. It has been an ambition of mine to visit Cremieu and strike the coin on the site from where it first came.

Having contacted the local History Society – "Les Heures de Cremieu" we learnt that the coin was part of an issue struck in 1447 by order of the Dauphin, the future Louis XI. We discovered that the Mint's manager was Millett Blondelet and the coin dies were engraved by Jaques Vincent who sadly went blind after years of engraving for the Mint. The coin is important in dating the Newport Ship. The ship cannot pre-date the coin issue in the start of the ship's construction.

medieval fête which has been held on a weekend in September for the last ten years. Cremieu is only a small place – about the same size as the old centre of Caerleon with a population of 4,000, but at the Fête Medivale it hosts over 50.000 visitors. None of this would be possible without the unstinting efforts of the "benevoles" or volunteers. This is a team of 300 people who work round the clock on that weekend free of charge to organise the fête.

At the fête there are re-enactors, musicians, jugglers, falconers and stalls selling medieval costumes and souvenirs. Entertainments include medieval music concerts, plays, jousts, dances, grand parades (carnival style) through the town by all of the participants, and a great banquet seating 800 in the fifteenth century market hall. This large covered area dates from the time of the Newport ship, and the banquet there goes on through the night into the small hours. Apart from enjoying the excellent food we were entertained by medieval musicians and exotic performances from Saracen fire swallowers and belly dancers. There were sword fights and armoured knights rode through the centre of the feast, We were accosted by medieval beggars and cut pursers who were driven off by men at

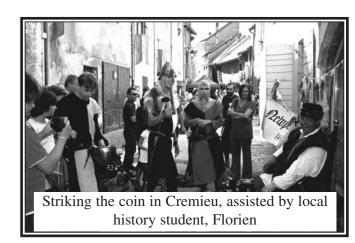
I have been striking replicas of the good luck coin arms. The star performer was a tight rope walker who rode a unicycle on a rope above the heads of the diners. He finished the act by walking the rope in clogs - the rope having been doused in

> Thanks to the kindness of Mssr Alain Moyne Bressand, Cremieu's mayor and deputy for L'isère, I was given permission to set up my coin strike on the streets of Cremieu. I did a brisk trade, and people were amazed that one of their coins had been found in a medieval ship excavated at Newport. The story of the coin and our ship was featured in "Le Dauphine" the local regional newspaper and I was put in contact with the local secondary school, where they are now studying the Newport Ship.

1447, as the coin was embedded in the keel at I am very grateful to the Zahi family who hosted my wife and I for the weekend, and to their son in London who translated all the information that I was delighted to be asked to attend Cremieu's the local history group had sent us. Mssr and Mme Zahi live in the oldest house in Cremieu. It is said that the French princes stayed there when they visited the town. I was pleased to reflect that maybe Louis XI had been in the same room that I was in, looking out of the same medieval window at a townscape that had changed very

> My trip to Cremieu has been my greatest adventure with the coin strike and it is nice to think that our coin is part of Cremieu's story too. If you ever get a chance to visit Cremieu and its fête, do go. It is truly a spectacular show with participants from all over France and its neighbouring countries.

Charles Ferris



A Scan for the Pump

The project team experienced an unusual event last week when we were lucky enough to take the Ships largest bilge pump to the Royal Gwent Hospital, Newport to be CT Scanned.

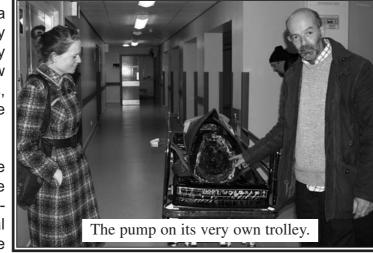
CT (or CAT) scan is short for computerised (axial) tomography scan. The scan uses X-rays and a computer to create detailed images of the inside of material, usually your body. The images produced by a CT scan are called tomograms and are more detailed than standard X-rays, which use a single beam of radiation. By using a series of two-dimensional X-ray images taken around a single axis of rotation a three-dimensional image can be generated.

There are a number of reasons why X-ray and other medical imaging techniques such as MRI

(Magnetic resonance imaging) are used to investigate archaeological objects. They provide a visual record of the shape, technology and condition of an artefact and can reveal information not visible by eye that can aid identification. They are a quick, economical, non-interventive and non-destructive

way of recording. The images can be used as a long-term record of the current state of a deteriorating object. Although more commonly used on metal artefacts, X-ray is increasingly being used in museums to reveal new information about organic material collections. for example, textiles and Egyptian cartonnage mummy masks.

X-radiographs are now so valued they have been incorporated into English Heritage guidelines as an example of best practice: "Xradiographs of metalwork are an essential component of the site archive (English Heritage 1991, 30, A3.1.1) and, where necessary, the



The Hospital team that scanned the pump.

research archive (English Heritage 1991, 37, A6.1.1) and are a requirement of the deposition of those archives. The guidance now in place makes it clear that an X-radiographic archive is an integral part of the transfer of an assemblage of metalwork when the project archive is finally deposited", Guidelines on the X-radiography of archaeological metalwork, 2006.

Although the pump has the remains of an iron band around one end, it is constructed mainly of elm wood. It is a hollow cylindrical form. Our primary reason for CT scanning was to investigate and to try to establish what survived inside the central void. It was thought it might contain the remains of the pump mechanism, which would need to be recorded insitu before any movement occurred attempting to micro-excavate the clay and sediment that had settled inside it.

So our fragile cargo of waterlogged timber was carefully escorted to the doors of the Royal Gwent, where a trolley awaited it. It was quite an exciting moment as the first series of images appeared on the screen. Their rapid succession created a moving 3-D image and we could instantly see the grain, knots and decay pattern of the timber as we travelled directly through the material from different angles.

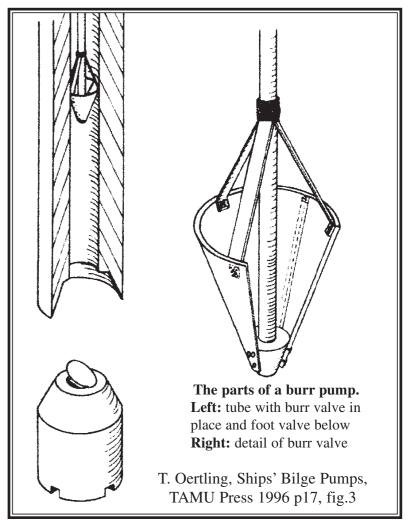
From studying the images with the help of Nigel Nayling we have been able to identify the remains of the leather burr of the pump but could not identify the spear rod, which we were hoping for. This could be because even the Royal Gwent's CT Scanner couldn't penetrate right to the core of this dense artefact. Some broken wood fragments were visible but it is likely these originate from the damaged end of the timber housing, which

was crushed during the drilling of the concrete piles.

The burr pump design is simple but effective. It consists of a tube or housing which sits upon the foot (lower) valve and the spear (pump rod) with a burr (upper valve) attached (in our case this is constructed of leather). When the pump is primed with water and the rod or pole moved up and down in the tube, the leather cone will close on the downstroke, open on the upstroke (similar to an umbrella) and lift water above itself. As this happens, water is drawn up through the foot valve. The pump would have been operated manually but may have had some form of handle or attachment to enable one person to operate it.

Expect further details on the design and history of the bilge pump following laser scanning!

Many thanks to all the Radiology and MRI staff of the Royal Gwent, who so enthusiastically took up the challenge in their free evenings.



Sophie Adamson



