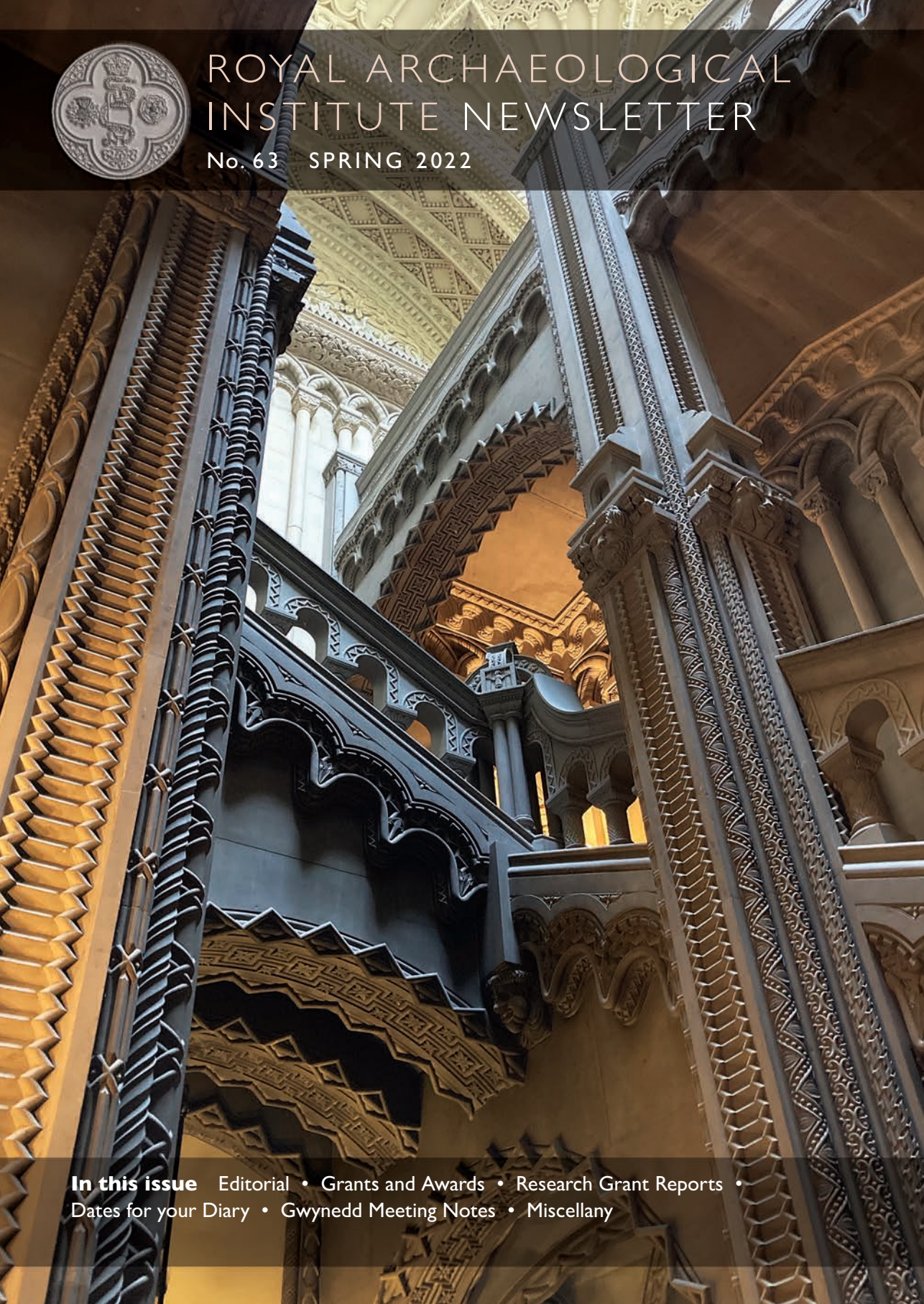
ROYAL ARCHAEOLOGICAL INSTITUTE NEWSLETTER

No. 63 SPRING 2022



In this issue Editorial • Grants and Awards • Research Grant Reports • Dates for your Diary • Gwynedd Meeting Notes • Miscellany

The design of Stonehenge is unique for its time – c. 3,300 BC. A reconsideration by our former Vice-President, Tim Darvill, of the numerology of its sarsen elements, proposes 'a perpetual calendar based on a tropical solar year of 365.25 days'. He considers the evidence for either a local or an Eastern Mediterranean origin of the calendar.

Darvill, T., 2022, Keeping Time at Stonehenge. *Antiquity*, 1–17. doi:10.15184/aqy.2022.5

At the centre of the Marsala Lagoon on the western coast of Sicily, the island of Motya (modern San Pantaleo) flourished (later than Stonehenge) in the Bronze and Iron Ages. Recent excavations showed that its 'Kothon' was not a maritime harbour but a freshwater pool, with, as da Vinci noted, a horizontal surface well suited for observing and measuring the night sky. Temples, architectural niches, stelae and other features within the complex were orientated towards rising and setting stars and constellations of significance at the equinoxes and solstices. The pointer of an astrolabe was found in the Temple of Ba'al (Osiris), the god who supported the rebirth of the sun; the temple and a number of stelae face the point on the horizon where Orion rises after sunset at the winter solstice, which coincides with the rising sun on that day.

Nigro, L., 2022, The Sacred Pool of Ba'al: A Reinterpretation of the 'Kothon' at Motya. *Antiquity*, 1–18. doi:10.15184/aqy.2022.8

Later still, since 2015, archaeological techniques have been used to see how people have adapted their behaviour to a new environment, the International Space Station, and to explore 'microsociety' on the ISS, through material culture. The latest phase is a variation on the classic test-pit – a study of daily photographs of $1m^2$ areas of the station to investigate how these spaces are used, and how this changes over time.
Find out more at https://issarchaeology.org.

This review is of a book, which in global crises of war, climate and more, offers much to consider: Koerner, S., 2022: Barrett, J. C. 2021, *Archaeology and its Discontents: Why Archaeology Matters*, Routledge, in *Antiquity*, 1–3. doi:10.15184/aqy.2022.6

***Archaeological Journal* mailing issues** – an update

Routledge, Taylor & Francis have recently written to all members about issues with delivery of copies of the *Archaeological Journal* and to explain how to claim for missing copies. If you have not received Volume 177 (2020) and/or 178 (2021) please contact them directly at this email address: societydata@tandf.co.uk or at the postal address in their letter, so that they can arrange to courier the copies. Please let them know which volumes are missing and confirm your mailing address with them. They will also need your telephone contact number as required by the courier service which will attempt to deliver and, if no one is in, call to arrange redelivery or leaving in a safe place. If you have received copies more than once, there is no need to return extra copies.

Archaeological Achievement Awards

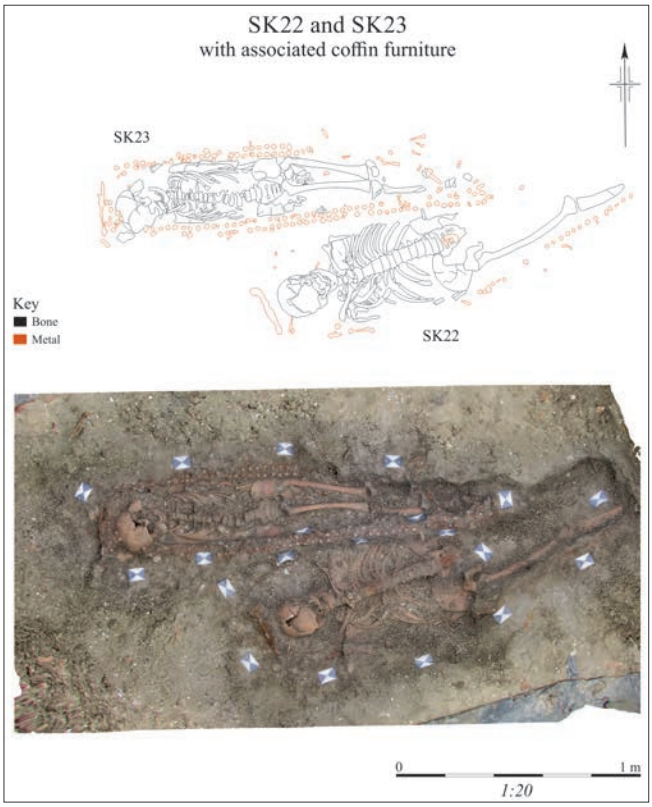
The revived awards (formerly the British Archaeology Awards, last held in 2018), which are now run by the Council for British Archaeology (CBA) with the support of a steering group, celebrate archaeological achievements from across the United Kingdom and the Republic of Ireland. They were announced online on 7 December 2021. The Institute sponsored the Early Career Archaeologist Award which was won by Grace Griffith. The Highly Commended Award went to Dr Iris Kramer. Dr Tanja Romankiewicz presented the award on behalf of the Institute. See more at www.archaeologicalawards.com

Grace Griffiths writes:

The award for Early Career Archaeologist came as a big surprise, for I had no idea I had been nominated, so to be shortlisted was amazing, and to win was unbelievable! I have wanted to be an archaeologist from a very young age, so I am very lucky in having my dream job,and I love what I do.

At the University of Birmingham, after my first degree I took my MRes in Archaeology, with a focus on Middle Bronze Age Cremation cemeteries in Britain. While at university I was Finds Manager for several seasons of a project investigating the wider landscape of Stonehenge, and a research assistant for another examining the mortuary landscape there, from the prehistoric to the present day. Working at such an iconic landmark only fuelled my desire to continue in archaeology.

I went on to a traineeship with Cotswold Archaeology, before moving to John Moore



Digitisation (above) and orthographic photograph from a photogrammetric model (below) of skeletons within a churchyard (Bucks.) (© JMHS)

Heritage Services (JMHS). I have now been working in commercial archaeology for a little over three years. I enjoy every aspect of it, particularly my current role as it allows me to see all stages of a project from beginning to end. As Project Supervisor and Heritage Assistant I have tasks from compiling pre-excavation research; to fieldwork; through to post-excavation work such as finds and sample processing and report writing. The fast-paced nature of the work has enabled me to experience a wide variety of sites, features and artefacts.

With one of my colleagues, I co-ran a 170-trench evaluation. It was exciting to gain experience of a large evaluation project, especially one with many administrative and logistical challenges, owing to the large scale of the fieldwork. In this project I also had the opportunity to train archaeologists who were new to the sector, and it was great to see their progression and growing excitement.

At JMHS I've also been fortunate to develop my skills in GIS and GPS survey. Though this formed a large part of my postgraduate thesis, the commercial use of these programmes was new for me, and it was great to put in practice the various methodologies, from pre-excavation set-up and research, to surveying features and other archaeological points of interest in the field, to producing site plans for reports and other disseminations. I have also completed a number of structure-from-motion photogrammetry projects. One of my favourites was at a churchyard, where I used photogrammetry quickly and accurately to record human burials in the field, including infant burials where shroud pins and scraps of shroud material were preserved, and adult burials with their associated coffin furniture. Following the fieldwork phase, I reproduced the models as part of a site-wide plan so that they could be used in the final report, and provided detailed orthographic representations of each burial.

I have recently begun training in heritage assistant work, exploring a different aspect of archaeology, and the wider heritage industry. Possibly the most important lesson I have learnt from my time in archaeology so far – and the advice I would give to anyone else considering a career in archaeology and heritage is – throw yourself in, give everything a go, and have fun doing it! I thank the Royal Archaeological Institute and the Council for British Archaeology for sponsoring the awards, which are a fantastic way to celebrate archaeology and share information about amazing projects that are happening around the UK.

Current Archaeology Awards 2022

These awards celebrate the projects and publications that were featured in the *Current Archaeology* magazine over the past twelve months, and the people judged to have made outstanding contributions to archaeology.

Chosen by a public vote, the winners were announced by Julian Richards on 25 February as part of the virtual *Current Archaeology* Live! 2022 conference on YouTube.

Archaeologist of the Year Raksha Dave

Research Project of the Year Bridge Over Troubled Water: Roman Finds from the Tees at Piercebridge and Beyond (Hella Eckardt and Philippa Walton, University of Reading/ Birkbeck, University of London)

Rescue Project of the Year Building a Roman Villa: A Romano-Celtic Temple-Mausoleum and Evidence of Industry at Priors Hall, Corby (Oxford Archaeology)

Book of the Year *Bog Bodies: Face-to-Face with the Past* by Melanie Giles

Follow this link https://www.youtube.com/c/CurrentArchaeology/videos for other events at the conference which are still available to view.

RAI Cheney Bursaries

The bequest of the late Frank S. Cheney was established to enable students to participate

ROYAL ARCHAEOLOGICAL INSTITUTE
RESEARCH GRANTS

The Institute awards the following grants annually:

Tony Clark Fund	Up to £500 for archaeological work and dating
Bunnell Lewis Fund	Up to £750 towards archaeology of the Roman period in the UK
RAI Award	Up to £5000 towards archaeological work in the UK

Please download an application form at http://www.royalarchinst.org/grants or write to the Administrator.

Closing date for applications: 12 December 2022. Awards announced in April 2023.

in Institute events or other conferences or meetings. An allocation is available annually to which individuals can apply for a maximum sum of £200. Before applying, please check with the Administrator that monies remain in the year's fund. Students who wish to apply for a bursary should email admin@royalarchinst.org.uk or write to the Administrator, RAI, c/o Society of Antiquaries, Burlington House, Piccadilly, London, W1J OBE, at least six weeks before the event they wish to attend, stating: the institution in which they study, the event they wish to attend, the sum of money requested, a breakdown of how the money would be spent and a summary (up to 250 words) of why they would like to attend the event and in what way this would be useful to them. Successful applicants may be asked to produce a brief report of the event for the Institute Because of the pandemic, no awards have been made for some time.

RAI Dissertation Prizes

The Institute presents two awards for dissertations on a subject concerned with the archaeology or architectural history of Britain, Ireland and adjacent areas of Europe. In even-numbered years, the Tony Baggs Memorial Award goes to the best dissertation by an undergraduate in full-time education. In odd-numbered years, the competition is for the best dissertation submitted by a Master's student. Nominations are made by University and College Departments. The winner receives a prize of £500 and the opportunity for a paper based on the dissertation to be published in the *Archaeological Journal*. The chief criteria considered are (a) quality of work and (b) appropriateness to the interests of the RAI as reflected in the *Archaeological Journal*.

The Master's dissertation prize, covering years 2020 and 2021, has been awarded to Jemma Moorhouse from the University of Reading for her dissertation, 'Iron Age and Roman Copper-Alloys from the A14 Excavations: Integrating and Assessing the Use of p-XRF Analysis in a Large Infrastructure Project'. At the Institute's meeting on 9 March, Jemma received her prize from Our President.

RAI Research Grants

The following projects were awarded grants but were unable to take place because of Covid, and are hoping to continue in 2022:

Robert Fry *What Lies beneath Longis? Searching for Iron Age and*

Roman Alderney (including Tony Clark Memorial Fund)

Nick Overton *Exploring Mesolithic Belief Systems through the Treatment and Disposal of Animal Remains*

In 2022 grants have been awarded to four projects:

David Brooks *Hagg Farm, Swaledale, (N. Yorks): Post-ex Analysis* (including Bunnell Lewis Fund)

Gordon Noble and James O'Driscoll *Boom Towns or Seasonal Assemblies: The Great Hillforts of Northern Britain*

Lisa-Marie Shillito *Exploring the Environmental Impact of the Iron Age-Roman Transition at the Northern Frontier* (including Tony Clark Memorial Fund)

Steven Mithen *Rubha Port a t-Seilich: Excavating an Upper Palaeolithic Site in Western Scotland*

RAI RESEARCH GRANT REPORTS

The Hagg, Fremington, Swaledale (N. Yorks.)

David Brooks

The Hagg has been investigated by the Swaledale and Arkengarthdale Archaeology Group (SWAAG) since 2010, with work from 2016 onwards being supervised by Vindomora Solutions Ltd. This season's work was undertaken by community volunteers with an outreach programme for a local school and the Young Archaeologists' Club.

So far, the results of the combined excavation and survey work suggest that the core of the site was an enclosed hut-circle settlement. While it was built in native style, the finds suggest Roman occupation, with no native ware found and the timespan of the pottery assemblage suggesting that the site was in use between the second and fourth centuries AD. The artefacts to date, including a fragment from a military quern, suggest trade with nearby sites such as Catterick.

This season we sought to answer some of the questions that had arisen in previous seasons. The excavation concentrated on the

Remains of the flagged surface at the Hagg (© SWAAG)

north-western extent of the main enclosure, a hillock overlooking the main site with clear views of the valley. This area had been evaluated in 2019, where the remains of a flagged surface had been identified. In 2021 the remains of the flagged surface were seen to be running across the majority of the excavation area, with a curvilinear cut feature noted along the limit of excavation's north-western edge. The feature had been backfilled with cobble and flagged over: the flags had subsided into the feature in time, presumably due to hillwash activity. As well as this feature, the excavation also contained a number of postholes, a potential beam-slot and a crinoidal limestone kerb, which were the only indications of a structure within the excavation area.

Four trenches were also excavated along the southern extent of the main enclosure bank to investigate earthwork features indicated within the LIDAR dataset. The south-western corner of the enclosure was found to be empty of archaeological remains, with the LIDAR picking up on a large crinoidal limestone outcrop. The other three trenches confirmed the presence of the collapsed outer enclosure embankment, a potential central entrance and an internal metalled surface.

Exploring Smallhythe: Romans along the River Rother

Nathalie Cohen

In 2021, 60 National Trust volunteers dug seven trenches in and around Smallhythe Place in Kent, revisiting a site once investigated by Time Team. Well-known today as the former home of Victorian actress Ellen Terry and her daughter Edy Craig, Smallhythe was earlier a location for royal shipbuilding and a hive of activity nearly 2,000 years ago.

Now over ten miles inland, the tiny village was once a port by the Rother, which flowed along the border between Kent and Sussex. The 'small landing place' or hythe is recorded from the thirteenth century, and some great ships of the medieval and Tudor royal navy were built here during the fifteenth and sixteenth centuries, including the *Jesus*, a thousand-ton vessel for Henry V, constructed in 1415, and Henry VIII's *Grand Mistress* which set sail in 1545.

From near Smallhythe Place itself came evidence for the development and use of a Georgian farm, such as cobbled areas forming yard surfaces, and a midden dump. A most intriguing later find, from the metal-detecting survey, was a seal with a

Digging at Smallhythe (© N. Cohen)

cameo, dating to around 1825. We found the medieval and Tudor brick kiln discovered in the 1990s, and defined more of its extent. Pot sherds, animal bones, metalworking waste and nails from the trenches further uphill gave us a little insight into sixteenth-century lives – and an uncut 'strip' of roves is evidence for industry associated with ship building.

Although small quantities of Roman material had previously been found at Smallhythe, very large assemblages of ceramics and building material were recovered during #TheDig2021. It seems likely that we have been excavating part of a Roman pottery production site; further investigation may reveal the kilns themselves. We also recovered a substantial quantity of metal-working waste, suggesting iron working nearby – it may be that Roman Smallhythe functioned as an industrial area. We have evidence suggesting more domestic activities, such as local and imported pottery representing fine tableware and kitchen vessels. The discovery of nine stamped Roman tiles is significant. Eight of the nine have partial 'CLBR' marks – the stamp of the Classis Britannica. Was there a small harbour here, a stopping point on the way to the port at Bodiam?

Excavations at Aldborough (*Isurium Brigantum*) 2021 (including Bunnell Lewis Fund)

Rose Ferraby and Martin Millett

Isurium Brigantum (N. Yorks.) was the most northerly major town in Roman Britain. Our project combines survey, archive work and excavation to provide new insights into this important site. In the northern part of the walled town, the 2021 excavation continued work begun in 2019, re-examining an area explored in 1924, to provide a window to understand better the early development of the town.

The 2021 excavation had three key outcomes. First, we were able to explore further the early sequence on the site, with more detailed sampling of a blacksmith's workshop dated to the second century AD. Work on the material collected is proceeding in the laboratories in Cambridge, but it is already clear that very large-scale manufacturing utilised coal and that lead was also being worked in the vicinity. We were unable to reach the bottom of the sequence in 2021 and plan to return in 2022.

Second, examination of the mid-Roman sequence revealed new evidence for a major stone-built structure with flagged flooring, as well as for the evolution of the adjacent street, the lowest surface of which is broadly contemporary with the sequence in the blacksmith's workshop. The make-up deposits for the stone building produced a very significant assemblage of finds.

Third, we exposed a complex area of late Roman to early post-Roman timber

Orthographic photograph of Aldborough site (© Dominic Powlesland/Rose Ferraby)

buildings, interleaved with a midden containing substantial quantities of animal bone as well as worked antler. Beside the street at the south was a strip building *c.*3m wide, with quern stones as post supports on its axis and a well-preserved hearth at its west end. To the north was a rectangular arrangement of blocks and an associated east–west alignment of very substantial stone post supports which probably represent a second building. To the north a more regular area of rubble, an internal floor or external yard, incorporated a small uninscribed altar. The area was defined to the north by an east–west cobble wall foundation, with several short sections of walling running north from it. Analysis of the substantial finds assemblage from this phase of activity may provide very important new information about this period.

The Archaeology of the Old Jewish East End of London

Niall Finneran

This project was originally conceived as focusing on death and memory (i.e. burial grounds and internal synagogue memorials) in the area of the old Jewish East End of London (i.e. Whitechapel), but with extra funding from other bodies, as well as the advent of the Covid pandemic in March 2020, a rethink and refocusing took place. The project now evolved towards a much more contemporary archaeological study, emphasising a strong anthropological component through the use of oral history, digital media and archival research. The project has also taken on a more long-term perspective, looking at historical mapping and plotting the changes in settlement in the Jewish East End from the end of the nineteenth century to the present day.

The former Fieldgate Street Synagogue now incorporated into the East London Mosque (© Niall Finneran)

On the ground, survey work undertaken in between lockdowns in 2020–21 has focused on the identification of synagogue sites shown in the 1960s Ordnance Survey mapping and in old photographic archives. In some cases the structures have been long redeveloped, but in other cases the synagogues have been repurposed as office buildings, flats or mosques. This first phase of work has identified what is left on the ground of a once thriving immigrant community that from the late 1960s was largely replaced by another immigrant community (mainly Bengali Muslims). This is a townscape of Jewish shops, businesses, schools and synagogues that now lives mainly in the memories of older people long since moved from the area, but which remains in small pockets, unaffected by bombing in the Second World War or by massive redevelopment from the 1960s. The reuse of ritual space in the case of the Brick Lane mosque (a former Huguenot chapel,

then a synagogue) is a recurring theme here, but other interesting issues have come to light, such as the veneration of the old Ashkenazi burial grounds by modern Haredi Orthodox Jews.

Our work now switches to a detailed survey and recording of burial grounds and the construction of a detailed searchable GIS and project website that casts light on the archaeology of multi-ethnic east London in the twentieth century.

Petuaria Revisited – Excavations at Brough

Peter Halkon and James Lyall

In 2021 work continued in the Burrs Playing Field, Brough (S. Yorks.) on the 25 × 3m trench over the courtyard building excavated in 2020. The courtyard building overlay the foundations of a substantial structure. In the centre of the trench the remainder of the possible floor with the collapsed painted wall plaster was removed and burning revealed, including a charcoal patch, possibly the remains of a wooden panel. This burning, dating to the later third century AD, corresponds with Site V of Philip Corder's 1936 excavations. Immediately to the south of the courtyard building was a flagstone roof-tile spread, some of which had slumped into the top of an ovoid pit packed with oyster shell and pottery. This may represent some form of structured deposition on the construction of the courtyard building itself. Beyond, successive courtyard surfaces were revealed. It is also now clear that features in Corder's Site V, just to the east of our trench, were part of the eastern range of the courtyard building. Finds in the main trench dated from the third century, with some fourth-century material in the upper layers, including a copper-alloy bangle, jet bead and copper-alloy tweezers. The lower contexts contained second- and first-century AD pottery and other items.

Three trenches were opened in the north-east and north-western corners of the playing field, to the east and west of the scheduled area, and in a garden south of the Burrs, to investigate the Roman defences. The north-east trench proved problematic due to part of a hitherto unrecorded Second World War air raid shelter. At considerable depth, however, the edge of a ditch probably of the first-century fort was located. In the north-western trench, Roman deposits were nearer to the surface, including the heavily disturbed remains of Corder's Period II stone wall and the top of the clay rampart. In the southern trench, the Roman deposits were heavily disturbed by a sewage pipe placed within a substantial Roman ditch.

The 2021 excavations were conducted with emphasis on wellbeing during the Covid-19 pandemic, with a major aim of involving

Brough: remains of the northern Roman wall (© P. Halkon)

the local community, particularly ex-service and 'blue-light' personnel, in discovering their heritage, and 129 people actively participated. For 87% of them, it was the first time they had taken part in a dig.

Rubha Port a t-Seilich: Excavating an Upper Palaeolithic Site in Western Scotland

Steven Mithen

The 2005 discovery of Upper Palaeolithic stone artefacts within plough soil at Howburn, south Lanarkshire, and the identification of further artefacts of this period within museum collections, have demonstrated that Ice Age hunter-gatherers were present in Scotland. How many, how they lived, when they arrived and how long they remained are not only unanswered questions but cannot be addressed until *in situ* Ice Age campsites are found.

When the 'Mesolithic' site of Rubha Port an t-Seilich on the Isle of Islay was evaluated in 2010 and 2013, indications were found that Upper Palaeolithic artefacts from the Ahrensburgian culture remain *in situ* below the Mesolithic deposits. After excavating the uppermost Mesolithic horizons in 2018 and 2019, a new three-year project was begun in 2021 to expose and excavate the purported late Upper Palaeolithic campsite.

The excavation removed the next horizon of Mesolithic deposits, during which artefacts of a likely Upper Palaeolithic period were recovered, these having been redeposited by the Mesolithic activity. The Mesolithic deposits contained abundant quantities of chipped stone, coarse stone, fragments of animal bone and charred plant material, along with pits, fireplaces and stakeholes. The fireplaces suggest the site had been one of social and ritual activity within the Mesolithic settlement pattern. Post-excavation analysis of the finds is ongoing. Sediment samples were acquired for geochemical and sedimentary ancient DNA analysis. When preparing the trench section for sampling, a collection of artefacts was acquired from beneath the Mesolithic horizons. This contained artefacts which confirmed the likely presence of the Ahrensburgian culture.

Excavation at Rubha Port an t-Seilich, September 2021 (image S. Mithen)

In summary, the 2021 field season made substantial progress towards achieving the aims of the three-year project. The final horizon of Mesolithic deposits will be excavated during the 2022 field season. This will expose what we anticipate will be an underlying Upper Palaeolithic horizon coming from the terminal Pleistocene, for excavation in 2022 and 2023.

An online lecture reviewing the project and describing the 2021 results was given on 11 October 2021, and can be viewed at www.youtube.com/watch?v=9FGgeJolKO4

How Ancient are the Massive Cornish Tin Ingots from around St Austell?

Benjamin Roberts

Owing to the scarcity of tin ores, the rich deposits of Cornwall have been a major European source throughout the medieval period to the twentieth century. Cornwall is also suspected of being a major European source in earlier periods but substantial and directly dated evidence for this ancient tin trade is rare. There are currently no directly dated early tin ingots in Cornwall, with only 16 probably ancient ingots surviving out of 56 identified in the literature. This project aimed to radiocarbon date three of these tin ingots which have charcoal inclusions, and were found at separate locations near St Austell.

Two tin ingots have now been radiocarbon dated, with the third ingot from Burngullow, St Mewan, St Austell having insufficient charcoal.

The first is an irregularly shaped mass of smelted tin, with pebbles of stream tin and charcoal embedded in its base, and was found immediately below the surface in Trethowel Wood, St Austell. The ingot weighed 36.3kg and was sold about 1870 to Carvedras Smelting Co., Truro. In 1922 a mass of tin cut along one edge from a larger piece, weighing 14kg was presented to Truro Museum. This ingot has now been radiocarbon dated to the early post-medieval period (1486–1640).

Sampling the ingot from Trethowell Wood, St Austell (© Alan Williams)

The second is a 'pasty'-shaped ingot weighing 7.7kg dug up in a garden in Penwithick, St Austell, in 1967 and presented to Truro Museum. This ingot has now been radiocarbon dated to the mid-twentieth century. Further chemical analysis to evaluate this suggests that it may well have been the product of backyard smelting.

In place of the third ingot, permission has been granted to radiocarbon date a wooden shovel found in 1836 in an ancient tin stream-working, near the Bronze Age barrow complex at Botrea. Although the shovel may be Roman to medieval in date, a prehistoric date is also very possible given the evidence for tin exploitation and occupation that we have found in the area. We await the results.

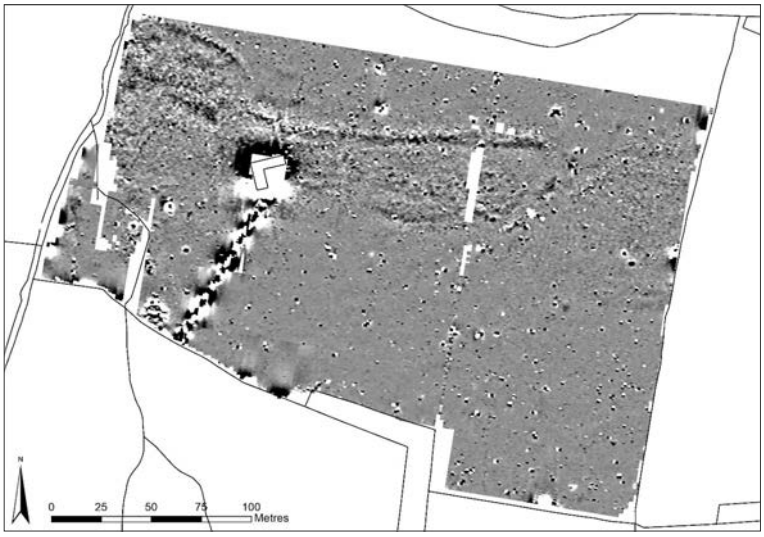
Exploring the Prehistoric Landscape of Upper Teesdale

Beverly Still

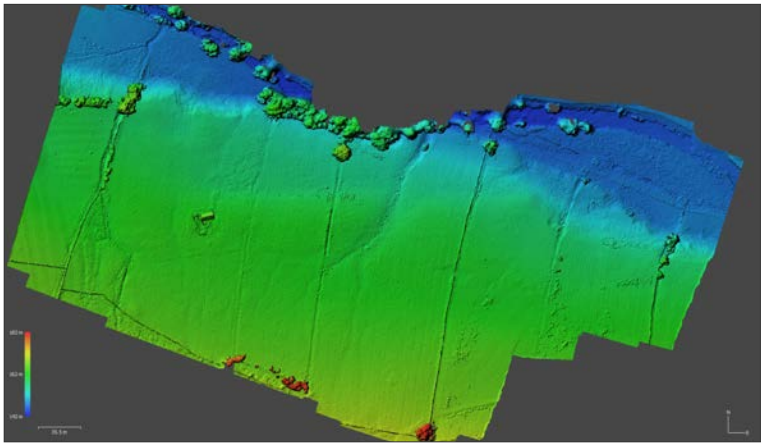
In 1980 in the Greta Valley, Teesdale, County Durham, the largest Late Bronze Age metalwork hoard in northern England was uncovered at Gilmonby. In 2015 and 2016, two further contemporary bronze hoards were discovered near the original findspot. All are now displayed in local museums. The Greta Valley is close to Barningham Moor, a landscape of prehistoric monuments including rock art and cairns, and also close to the Stainmore Gap, an ancient trans-Pennine access route to the west.

The aim of the project was to assess the archaeological potential of the Greta Valley and contextualise the Bronze Age hoards. This was achieved through a series of landscape investigations, including Lidar, geophysical survey, drones and ultimately targeted excavation. It was directed by Beverley Still with Altogether Archaeology, a local community group.

Over 45ha of magnetometry survey was completed, revealing a high concentration of archaeological anomalies, many clustered in 6ha close to the original Gilmonby hoard findspot.



Geophysical Survey Results of the land on which the Gilmonby Hoard was found (© Tudor Skinner)



Infra-Red Drone survey of the land on which the Gilmonby Hoard was found (© Alexander Jansen)

Our excavation in July 2021 revealed a burnt mound with a hearth, stakeholes and a basal stone floor. Worked flint and chert recovered from the mound indicate use in later prehistory. Charcoal from the burnt mound will be used for more precise radiocarbon dating.

The excavation also uncovered a sub-rectangular stone structure and a stone linear feature, likely evidence of a stock enclosure and associated building. A small iron chisel and a foundation deposit from within the stone linear feature, along with the recovery of flint and chert, suggest an Iron Age date.

Lastly, the excavation found an enigmatic circular stone-packed surface with associated worked flint and chert, likely dating to later prehistory.

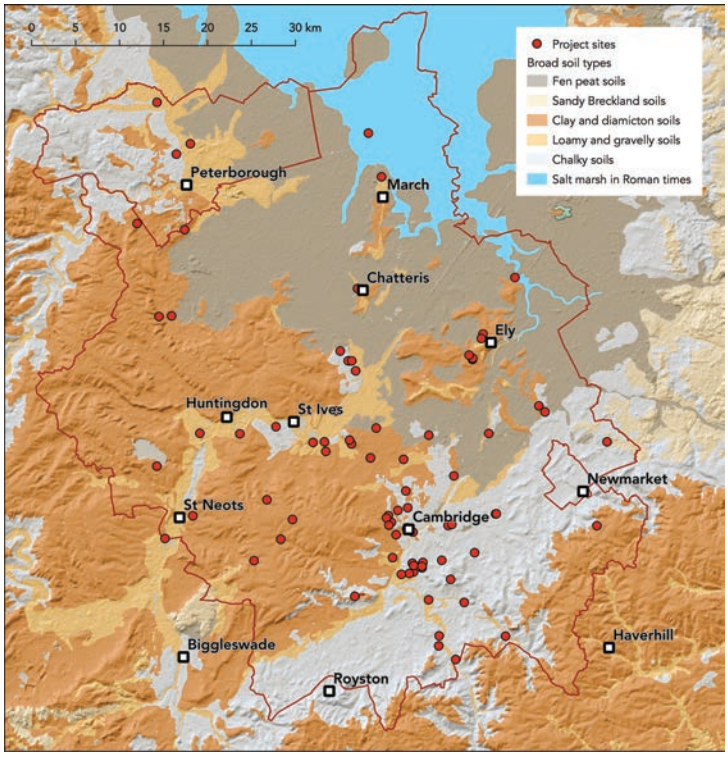
Following an exceptional first season, we look forward to discovering in 2022 more of the prehistory of the Greta Valley.

Gathering the Harvest: Collating Evidence on the Rural Economy of Iron Age and Roman Cambridgeshire

Rob Wiseman and Rachel Fosberry

A recurring theme in British archaeology is the need to synthesise data produced in the thousands of excavations undertaken in the UK every year. A major barrier to synthesis is that archaeological data is often produced in site-specific or idiosyncratic ways, and consequently requires considerable manual 'cleaning' before it is suitable for large-scale analysis. This is understandably expensive for commercial and academic bodies, and unsurprisingly most syntheses have been undertaken by students or volunteer specialists. There is, however, another approach: citizen science.

During lockdown in 2021, the Cambridge Antiquarian Society (CAS) organised an online citizen science project. The goal



Sites in Cambridgeshire and Peterborough with plant samples collated by the volunteers, along with the major soil types. (© Cambridge Antiquarian Society, with soils based on British Geological Survey data)

was to gather information on the use and transportation of plants in Cambridgeshire and Peterborough during the later Iron Age and Roman periods (c. 400 BC to AD 410). While archaeologists have excellent evidence for species used in this period, there is almost nothing about how plants were moved from where they were grown to where they were used. This limits understandings of how towns were fed or how the ancient agricultural economy worked.

Fourteen volunteers worked in two teams. One group collated references to plants and foodstuffs in Roman written sources relevant to Britain, including historical texts, graffiti and archaeological finds. A second team collated data on preserved plant remains from 88 excavations in Cambridgeshire and Peterborough. Working together, they identified about 400 different plant species in over 2000 archaeobotanical samples. The data is currently being analysed by looking at weed species found amongst cultivated plant remains. Some weeds have preferred ecological niches, so when they are found outside their preferred growing zones, it is potentially evidence that people transported them. Cambridgeshire is well suited to this analysis as it has four distinct ecological zones (fenland, clays, chalk downland and river gravels).

The project is an experiment. As well as being CAS's first online project, the idea of tracking transportation via weed species has only been done once before in Britain on this scale. The project demonstrates the contribution volunteers can make. CAS will make the project data publicly accessible, and hopes it will be the foundation for future projects and research.

DATES FOR YOUR DIARY

Please note that **non-members are not covered by the Royal Archaeological Institute's Public Liability Insurance** and they must arrange their own insurance to enable them to attend Institute Meetings.

In 2022 there will be **no Annual Conference**

2022

Spring Meeting 13–15 May, at Dover led by Jonathan Coad

Summer Meeting 1–8 July to the Lune Valley, led by Peter Ginn

Autumn Day Meeting 28 October, at Newark, led by Mark Gardner

Please check our website for news and early details, at www.royalarchinst.org/events.

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Autumn Meeting, Gwynedd, 4–9 October 2021

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On the first morning of our meeting, our party made its way by foot from the hotel to Caernarfon Castle, entering the medieval walled borough by the gateway next to the early fourteenth-century church of St Mary. The usual main entrance to the castle via the King's Gate was closed at the time of our visit owing to substantial conservation and development work, so we entered by the smaller gateway at the foot of the Eagle Tower at the western end of the castle.

The building of Caernarfon, and of the other Edwardian castles that we visited during this meeting, was a key part of the consolidation by Edward I (1272–1307) of English power over the newly conquered Gwynedd, a huge and expensive building campaign under the supervision of the mason Master James of St George. The conquest took part in two main stages, with much of Llewellyn ap Gruffydd's lands being taken in 1277, marked by the establishment of new castles at Builth, Aberystwyth, Flint and Rhuddlan. War broke out again in 1282, and the final stage of the conquest was consolidated with major new castles started at Harlech, Caernarfon and Conwy. The foundation of boroughs was an integral part of this building campaign, reinforcing the absorption of the territory into the kingdom of England by planting settlers and transforming the area's economy. It is thought that the intention was that Conwy should be the political and administrative centre of the conquered territory, as it had previously been Llewellyn's main centre, but the Roman associations of Caernarfon, next to Segontium, seem to have influenced the choice of Caernarfon as the main administrative centre.

Work at Caernarfon initially focused on the south wall of the castle and on the walls of the borough. The south wall of the castle is a particularly impressive and strong fortification, with polygonal towers rising four storeys high above their basements, and with archery galleries built into the curtain wall at two levels, plus the wall-head defences. The outer face of the curtain and towers was formed of ashlar masonry

The Eagle Tower, Caernarfon Castle (M. O'Brien)

in contrasting colours forming horizontal bands. By the time of the rebellion led by Madog ap Llywelyn in 1294, however, the castle was incomplete, and it and the town quickly fell to Madog's force. Caernarfon and a number of other castles were retaken in the winter of 1294–95, and the decision was taken to complete the defences here and to build a new castle on Anglesey at Beaumaris.

At Caernarfon, construction work continued with some interruptions until 1330. This left the interiors of the two gatehouses as well as the internal buildings incomplete. Subsequent additions were not major, and what remains of the castle is substantially from the Edwardian period. Its layout was influenced by the earlier earthwork castle, and it comprises two wards (Upper to the east, and Lower to the west). The footings of a Great Hall can still be seen inside the Lower Ward, as can the base of the wall that was intended to divide the two wards. The main royal accommodation was intended to be in the Upper Ward. The intended height of some of the buildings can be seen in the toothing stones built into the surrounding towers and walls, but these never rose much above foundation level, Edward's Scottish wars taking up the funding that might have completed work here and at other castles. The large and impressive towers did, of course, provide much substantial and high-quality accommodation.

Most of the northern towers had four storeys including a basement. The Eagle Tower at the western corner of the castle was the grandest; it has three turrets which were once surmounted by statues of eagles. The tower contained grand lodgings, and was probably built for Sir Otton de Grandson, the first justiciar of Wales. A basement level contained a water gate, through which visitors travelling up the River Seiont could enter the castle. Water was drawn from a well in the eponymous Well Tower. There are two main entrances, one leading from the town (the King's Gate) and one allowing direct access to the castle without having to proceed through the town (the Queen's Gate).

The castle remained an important political and administrative centre for over two hundred years. The town and castle were besieged during Owain Glyndŵr's rebellion in 1401, and again in 1403 and 1404. Changes to the administration of Wales under the Tudors meant that the castles were much less important, and they fell into decay. Despite this, Caernarfon Castle was still able to be defended during the Civil War, and it was not surrendered to Parliament until 1646. Fortunately for us, the town and castle defences seem to have escaped slighting.

Our visit to the castle took most of the morning; there is much to see, and it is possible to spend a whole day exploring the towers and galleries, as well as visiting the Royal Welch Fusiliers Museum. After this lengthy tour our group investigated the town of Caernarfon, still largely enclosed by the medieval town walls, which include eight towers and two substantial gateways. After such thorough explorations, the tea rooms of the town proved quite popular.

Segontium occupies a hilltop site above what is now Caernarfon, overlooking the sea and the Menai Strait. Its importance to the Romans is evident from its position on the route from the legionary fortress at Chester to the mining areas of North Wales and Anglesey, which provided them with lead and copper. Anglesey had been the objective of Suetonius Paulinus in his campaign

against the Druids in AD 60–61, interrupted by the urgent necessity of dealing with the revolt of Boudicca in the south-east of the province. Julius Agricola, who had been a military tribune under Suetonius, completed the suppression of the Ordovices as legate in 77, and the construction of the fort began soon afterwards.

The fort conforms to the standard Roman 'playing card' shape, but with one corner now cut off by the A4085; the section running past Segontium is now known as Constantine Road. There seems to have been little connection with Constantine the Great or his father and the name may be based on a false attribution by the ninth-century monk Nennius.

The earliest phase of building from AD 77 into the early second century comprised accommodation for an auxiliary unit of infantry, 1000 strong. The fort was substantially rebuilt in stone by AD 120 and the garrison reduced to 500. This must reflect a change in function. A high-status courtyard house in the middle of the fort may have been the residence of the official overseer of mines in the region. Perhaps the garrison were by then responsible less for internal security than for protection against sea-borne pirates. Nevertheless, Segontium continued to have importance throughout the Roman period and was only abandoned around 394.

Among the visible remains are the headquarters buildings, a strongroom, and barrack blocks. Outside were the civilian settlement (*vicus*), an official guest house (*mansio*) and a Mithraeum. Finds include a legionary sword and a relief showing a British version of the god Mars, with the usual elongated nose and staring eyes.

Some members were intrigued by the massive barrow-like structure on the eastern corner of the fort, walled off from the rest of the site and accessible (or rather, inaccessible) through a locked steel door. Guesses included a Home Guard or Cold War bunker: it is in fact a disused reservoir. When there was an outbreak of cholera in the town in the winter of 1866–7, new works were undertaken to improve Carenarfon's water supply and sanitation. The reservoir was opened in 1868 which coincided with the completion of a public fountain in Castle Square. The disused site was sold in 1994. There is a drop of 15 feet from ground level, which accounts for the locked steel door.

We began a heavily overcast and rainy Tuesday with a visit to the Llanberis Slate Museum located at the foot of Mount Snowdon and part of the UNESCO World Heritage site of Snowdonia. The tailings from 150 years of workings added to the scar of the deep quarry cuttings visible (just) in the precipitous hillsides above us. The weather added emphasis to the dangerous working conditions which the slate workers must have endured, along with diseases like smallpox.

We were at Dinorwig quarry, one of the largest in the area. Others at Penrhyn, the Prince of Wales, Gorseddau, Bethesda and Ogden Valley marked the line of the slate seam formed 500 million years ago when sediments settled to the bottom of the sea and were compressed by geological forces that subsequently raised the seam into an almost vertical position. Formed in layers, it facilitated quarrying in giant steps, including miles of underground tunnels and caverns. The slate having a grain more like wood was suitable for splitting into sheets.

What started with local farmers cutting slates to roof their own buildings developed in the eighteenth century when its industrial

potential was spotted. Early on work was done by hand with horse-towing on rails. Tools were picks and mallets, 'jumpers' (long, weighted iron rods) used to make holes for blasting powder and a 'plug and feathers' (a clever wedge) to split the rock, all a very laborious process. Men dangled on long ropes at the work face and defied any idea of health and safety until after the Second World War. Casualties and death were a hazard of the job – falling off the working steps or being struck by falling rock were not uncommon, especially in wet conditions.

Innovation brought in beam engines to lift and shift slate; compressed-air rock drills replaced jumpers, but this brought dust and with it the silent killer of silicosis. Later those were superseded by the water-powered Kellow drill. Steam engines replaced horses; sophisticated hydraulic hoists, cableways, transporter inclines and railways were introduced. The year 1834 brought the Ffestiniog narrow gauge (1ft 11¾in.) railway, which coincidentally had a profound impact on railways worldwide. Power was provided by a 15.4m waterwheel (the largest in mainland Britain) fed by its own reservoir high above, and quarries were also self sufficient with their own foundries and blacksmiths.

Production received huge boosts during wars with France and the American Civil war, although the First World War was a setback with Germany a major consumer. But industrialisation with accompanied urbanisation had created a significant home market through the nineteenth and early twentieth centuries. At its height Dinorwig employed over 3000 men, shipping worldwide out of Port Penrhyn and Portmadog, and bringing great wealth to the quarry owners (e.g. Penrhyn Castle). Not so the workers who barely earned a living wage and suffered much hardship. They formed their own societies with male voice choirs and football teams. The Caban (canteen) was a focal point for discussion and there was serious industrial action on several occasions. After the Second World War production declined and Dinorwig closed in 1969.

Generations of families worked in the quarry (the oldest recorded worker was over 80) passing down the essential specialist skills. Roof slates had to be precise and had names according to their size … Princess 24×14in., Duchess 24×12in., Countess, Wide Ladies, Broad Ladies, and Narrow Ladies 16×8in. In 1872 a Countess Narrow 20×10in. cost ½d., by 1914 it was 4d., 1967 – 65p and 2007 – £3. Although some machines were used around 60% of the work was still done by hand. With the best grade slate, a skilled splitter could in an hour make 60 tiles as thin as 5mm.

But the process was wasteful with up to 90% of quarried material discarded. Today some production continues in the area, with diversification turning waste into 'by-products' for the building and landscaping trades, and architectural products, kitchen surfaces, snooker tables, restaurant mats and fireplaces keeping the skills alive. Silicate is also now extracted from the dust and used in cosmetics, toothpaste and abrasive powders.

The museum houses a good display of pictures showing processes and equipment through the ages, to bring life and work at the quarry into stark reality. As a finale, a demonstration of slate splitting showed how easy it was to create a roof slate!

Despite the threat of heavy rain, most members of the party made the ascent of a steep hill to the remains of Dolbadarn

Castle, where our Hon. Secretary's introductory talk was drowned out by a particularly sharp shower. The more sensible members of the party took shelter in the lee of the former custodian's hut (the site is now free to visit). Once the rain stopped we were struck by the magnificent views north-west along Llyn Padarn towards Llanberis, and south-east into the heart of the mountains.

On this dramatic site at the foot of the Llanberis Pass, the castle had been established in the 1220s, by Llywelyn the Great, as a drystone enclosure on the hilltop with two substantial rectangular towers, now reduced to low walls. These remains are dominated, however, by the massive mortared-masonry circular tower built in the 1230s. The tower is similar in form to circular towers built at Pembroke and Tretower, and it has been suggested that Llewelyn was building to emulate the castles of the southern Marcher lords. It survives to a height of 14m, built of coursed rubble with a substantial external batter, and has an entrance at first-floor level now reached by a stone stair. If there were ashlar dressings around the doors, fireplaces or windows, these have largely been removed. Above the basement there are two floors, both with fireplaces, but the parapet has been lost.

In the Edwardian conquest of Gwynedd, Dolbadarn was held by Daffydd ap Gruffydd after the death of his brother Llewelyn ap Gruffydd in 1240. It was the last Welsh castle to fall, in 1183, and timber from the castle was later taken to contribute to the construction of Caernarfon. The foundations of a mortared masonry hall survive, part of a reoccupation of the site towards the end of the thirteenth century, but the site was unoccupied and ruinous by the eighteenth century.

Wednesday. It is difficult to be entirely neutral about Penrhyn Castle. One might be offended by the anomalies of the neo-Norman design such as large windows at ground level, yet full of admiration for the carving within, by local craftsman, in both slate and wood. Or perhaps intrigued by the creativity involved in designs introduced from earlier times and cultures, such as Norse symbolism on the stairs and medieval mummers as capitols. And certainly, in our current climate, one might feel uncomfortable about the source of the wealth of the Pennant family, the builders and last owners of the estate. They held sugar plantations and slavery, and were harsh owners of nearby slate mines, the latter still in the long memories of local people.

George Hay Dawkins-Pennant (1764–1840) inherited the estate from his childless cousin Richard Pennant in 1816. Richard had brought together a much-fractured estate, and invested in modernising the ancient hall-house he had inherited. That castellated Gothic house had been completed only thirty years before when Dawkins-Pennant inherited, so why build the castle?

Caernarfonshire, post Waterloo, had serious problems with poverty, unemployment and destitution, so was Dawkins-Pennant opportunistic – anti-abolitionist, he had additional funds of £14,683 compensation for the 764 slaves on his estates in 1833 – or philanthropic, or simply following the current trend to create picturesque fantasy castles? He employed architect and designer Thomas Hopper to fulfil his ambitions.

Many visitors commented that the rooms would make good film sets, including for horror movies; there was something highly theatrical about the interior. (It has been so

used and probably will be again, so the sharp eyed amongst us were correct!)

The offset cloister-like narrow entrance, a late add-on, with its outsized chair, leads to the vast Great Hall resembling the nave of a cathedral, complete with columns and triforium, exceptional stained glass by Willement, and huge lamps in Coade stone in the form of monstrous beasts. Having been dwarfed like Alice by the grandeur of the first room, we then found ourselves in a low-ceilinged gentlemen's club, masquerading as a library. This double room, divided by flattened Norman arches, was a challenge to Hopper, as it incorporated part of the old house. The architectural bookcases and panelled walls are of oak, but the arches are plaster grained to match. The quality of the plaster ceilings would suggest Italian master craftsmen were involved. By way of contrast the drawing room was much lighter, and brighter, with delicate furniture, large Cellini-esque gilt-bronze lamps and rich silk curtains, the tops of which were hidden by 'playful pelmets' in the form of outsize curtain poles complete with rings. The ebony room was dark indeed, and not just because the curtains were drawn against natural light. What was not ebony was ebonised. The highlight for many, because of the scale and bravura, was the main staircase. Hopper's clever use of two stones, pale oolitic limestone and dark grey sandstone made what was a small space magnificent.

The main feature of the bedrooms was, arguably, the beds! The depth of the carving and design, presumably at Hopper's behest, was in line with the quality elsewhere, including on a bed made of slate, a rather sombre, though admirable object, made for, and declined by (it was suggested), Queen Victoria when she and Albert paid a visit.

The domestic quarters were true to form with a warren of rooms for cold and hot, raw and cooked foods. The main kitchen had an impressive rack-and-pinion mechanism mounted within each hob. Reading the suggested menu for a grand dinner did somewhat throw into contrast the menu we had been enjoying at our hostelry!

The Dining and Breakfast Rooms proved perfect, and presumably contrived, settings for a considerable and impressive art collection. The walls in the former were stencilled, which, whilst not uncommon at the time, is unusual in its extent. The Chapel more than rewarded those who found it with its continuation of the elaborate stair's stone-carving style.

Penrhyn has a charming formal walled garden and extensive informal gardens. The bookshop is always a draw for some, but the real highlight for specialist enthusiasts was the Penrhyn Castle Railway Museum, of narrow-gauge railways. The Penrhyn Quarry Railway (PQR), one of the earliest industrial railways in the world, ran close to Penrhyn Castle, and when the castle was bequeathed to the National Trust in 1951, a small museum of industrial railway relics was created in the stable block. The first locomotive donated to the museum was *Charles*, one of the three remaining steam locomotives working on the PQR. Over the years a number of other historically significant British narrow-gauge locomotives and other artifacts have been added to the collection, including *The Fire Queen*.

Conwy is the most enchanting little town in North Wales. A Cistercian abbey was founded here by Llywelyn the Great c. 1198 and parts of it remain, though in 1284 the abbey was moved ten miles up-river by Edward I. The castle is a formidable fortification of the first rank, with sixteen

towers – eight large and eight small, these last forming concentric barbicans at the ends – and the finest set of town walls in the country, with 30 towers if you include that rebuilt by Thomas Telford. There are three gatehouses. None of the medieval buildings remain in the town, which was looted and burnt in the times of the Glyndwr troubles c. 1406, but some Elizabethan houses remain, of which Plas Mawr, the Great House of the 1580s, is the finest town house of its period in Britain.

Later additions to the town include the first suspension bridge in Wales built by Telford in 1826 and the first – and now only surviving – tubular railway bridge built in 1848, in 'a style as near as may be to the adjacent Conway Castle' by Robert Stephenson and William Fairburn, and as a prelude to their masterwork of 1850 across the Menai Strait. The 1958 arch bridge, sometimes denounced as clumsy, pays an elegant compliment to the Tubular Bridge by echoing the camber of the upper line of the iron tubes. In modern times, the A55 road built with EU funds to Holyhead has the first submerged tube tunnel in Britain, after a campaign was waged against a proposal for a monstrous rigid-stayed bridge twice the height of the Castle – a campaign led by Dr Arnold Taylor, our former Chief Inspector of Ancient Monuments, who was threatened with having his pension withdrawn!

We approached Conwy by the tunnel and then across the Telford Cob or embankment across the river, giving a fine view of the eastern end of the Castle. We noted the Mill Gate and the remarkable set of twelve garderobes on the Town Walls, then visited the Castle. The eight round towers are each about 80ft (25m) high. The castle is divided within by a cross wall into an Outer Ward containing the main Hall and Chapel at opposite ends of the same building, with a wine cellar beneath. There is then a middle lifting bridge across a rock cut ditch with the main well set into it; the Inner Ward has four towers with the royal apartments within them; beyond it is a barbican used as the Queen's Garden. A flight of steps leads down to a private harbour – all Edward's royal castles could be supplied by sea in the case of a siege.

We then walked past the Abbey (now parish church) with its three lancet windows and through Lancaster Square with its statue

Garderobes in the town wall at Conwy (J. B. Kerr)

of Llywelyn the Great (c. 1173–1240) to Plas Mawr, a large house built by Robert Wynn in two stages in the 1580s and 1590s. He had served in the wars in the Netherlands under Sir Philip Hoby, one of Walsingham's associates. The house was the headquarters of the Royal Cambrian Academy until recent years, but has now been taken over by Cadw and carefully restored with repaired plaster work and with wall-hangings on tenterhooks and fittings, all to a high quality.

The garden is straight out of Gerard's Herbal. The kitchen details, warming cupboard for the bedclothes, harp graffito on the fireplace, bread oven, bread basket suspended from the ceiling to prevent rats, rushes strewn on the floor and game hanging in the larder, were noted.

The Great Chamber is much in demand for weddings. Caryatids abound, the plaster badges of the Fifteen Royal Tribes and the fruits of a good life – such as strawberries and marchpane (marzipan) – are in evidence. Exhibits show the process of restoration. The roof of the building was repaired 30 years since, but some timbers show disconcerting cracks, though none of engineering significance. The gaps may well lessen as seasoning progresses.

We left by the so-called Bangor Gate, adapted by Telford for the modern road of 1826 and giving a rapid glance along the north-west front of Conwy with its nine towers extending from the Watch Tower, guarding the approach from the hills, to the river – a tenth tower fell into the River Conwy many years ago.

Thursday. After a decade of visiting French chateaux, Beaumaris, despite its name, is surprising and intriguing. No Loire valley princess this, but a formidable castle, well equipped to challenge invaders from the Welsh mainland or the Irish Sea. But why is it so chunky? Was it reduced by warfare? Truncated by a jealous monarch? Robbed to build the nearby town? Nothing so interesting – it was simply never completed. The money dwindled, and the military focus shifted from Wales to Scotland.

Beaumaris is the last in an impressive series of castles built for Edward I by his Master Builder, James of St George. In 1273, on his return from the Holy Land, Edward I stayed at the castle of Count Philip of Savoy, France. Touring the area, he would have admired and envied the sophisticated and accomplished constructions achieved by Master George. Edward managed to secure his services for his own ambitious building programme, and we continue to be awed by the magnificent results of their partnership.

The rapid building of Beaumaris, in 1295–8, was ordered after the recent success in retaking Anglesey. Its design closely resembles, and is developed from, that of Rhuddlan, constructed some 20 years earlier. Rhuddlan was built on a largely level site, relying on its efficient concentric design and use of the river for its survival. Beaumaris is also on a level site, facing the sea, with a tidal moat and its own supply docks. Early castles were usually perched on hills and surrounded by ditches; some stretch upwards, continuing a sheer cliff face; others dominate through their immense size. But they always maximise their position in the landscape. Beaumaris is placed with the confidence and experience of its Master Builder, named for its site – 'beautiful marsh', and indeed manages to be beautiful. Of course, familiarity with the aerial view, concentric design and unfinished state influences this opinion. It does not immediately present as a ruin or ruinous; the substantial remaining structure gives a clear

indication of its strength and purpose, and the mixture of limestone and sandstone used gives it an attractive mottled appearance.

The castle is accessed today from Gunners Walk, through the Outer Gate, which retains all the usual defences of arrow slits and murder holes; it would also have had gates and a drawbridge, and is set in the low outer curtain wall which has twelve small towers. Across the Inner Ward stands the offset South Gatehouse with its two D-shaped towers. Set in the larger Inner Curtain Wall, it was never completed, though the inner elevation reveals evidence of further construction planned, of an extensive range of buildings which would have provided palatial accommodation for royal visitors.

The Chapel Tower would have connected with these buildings, providing private access for the King. The chapel is situated on the first floor. It has a ribbed vault and three lancet windows set above attractive arcading. A third floor would probably have housed a priest and possibly a bell. The chapel hints at the standard of finish, which should have been achieved overall.

The North Gate is massive and imposing. Its five windows would have been repeated on a third storey. Elegant turrets should have embellished its skyline, and even incomplete, it is almost a small castle on its own. Among the many other features to be admired, some of the wall walk, with its six large towers, is accessible, and offers views of the moat and surrounding area. It is unfortunate that Master James was denied the opportunity to implement the buildings and decorative features he had designed. Regrettably, Beaumaris remains forever unfinished.

Arriving at Penmon Priory was initially disappointing. Expecting elegant ruins and cloisters, there was instead an odd collection of buildings – a house joined to a church, and oddest, across the lane, a large, dumpy dovecote. But the visit certainly did not disappoint, nor the history of the site. In the sixth century, St Seiriol established a monastic cell here, near an earlier Holy Well. He was continuing and consolidating pre-Christian beliefs in the sacred properties of water, which attracted offerings and pilgrims. Other cells were founded on the west of Anglesey, and on Puffin Island, known to the Vikings as Priestholm, or in Welsh, Ynys Seiriol.

The tenth-century wooden church was sacked by the Vikings, but the rebuilt stone building of the twelfth century survived early Norman onslaughts. The church was enlarged by the Augustinians in the thirteenth century. When the community was dissolved in the sixteenth century, the buildings became part of the estate of the

The font at St Seiriol's Church, Penmon (M. O'Brien)

Bulkeleys of Beaumaris. Fortunately, the church was spared and has continued in use.

Inside, it helps to know that the small early church now serves as the chancel, and the present nave is a later addition. The interior is plain and peaceful, with whitewashed pews and a beamed ceiling. The outstanding feature of the interior is the Norman crossing arches, with their superb examples of dog-tooth and chequered carved patterns. The decorated capitals of the arcading are also to be admired.

There are two Saxon crosses, much weathered, as they were originally sited outside. But it is still worth closely inspecting their illustrations. One is lopsided, and is supposed to have been altered to form a lintel! The font was also recycled from a cross, and sits on a later plinth. Before exploring outside, it is worth turning to admire the tympanum of the south doorway, with its interesting representation of a dragon.

The hillocky and somewhat unkempt graveyard contains modern graves, some slate headstones, and a few monuments to sailors drowned at sea. This is a reminder of the dangerous nature of the coastline. St Seiriol would have made many perilous crossings from Puffin Island. Now there is a lighthouse and a lifeboat station to reassure travellers.

It is difficult to make sense of the buildings around the church. There have been numerous alterations and additions. There remains a roofless refectory, and the priory must have had the usual facilities to support the monks. The house, which appears to be growing out of the church, was the prior's residence and is still occupied today.

About 100m away is a spring emerging from a cliff behind the church, reached by a path which skirts the monastic fishpond. Known as St Seiriol's Holy Well, it is enclosed by a small post-medieval stone and brick structure resembling an outhouse. This incongruous building now shelters the waters and the earlier stonework from the footfall of pilgrims and tourists.

The dovecote was built around 1600 by the wealthy local landowners, the Bulkeleys. It is shorter than many other examples, with a domed roof almost as large as the walls. It is topped by a small cupola which appears rather dainty for such a chunky building. There is a central pillar of uncertain function; later dovecotes sometimes had a central revolving nest access ladder. Birds entered through the cupola to reach the extensive arrangements of nesting boxes. They were reared to provide food, eggs and fertiliser for the estate.

Only a short distance from Menai Bridge is one of the best-known prehistoric sites on Anglesey, Bryn Celli Ddu burial chamber, or 'The Mound in the Dark Grove'. The name is beguiling and so is the site, which can be accessed via a short walk along a footpath skirting farmland just off the A4080. First explored in 1865 and thoroughly excavated in 1928–9, the site was once thought to be a late Neolithic 'henge' or ritual enclosure, made up of a circular bank (no longer there) around an inner ditch (69ft/21m in diameter), enclosing a circle of upright stones, several of which survive. A platform of white quartz pebbles and hearths were found near the entrance to the tomb, indicating that it may have been a focal point for ritual, especially as a small ox burial was found nearby. The later tomb in its imposing, although only partly restored, mound can be entered via a passage but, if you do so, please mind your head – and it

View through Bryn Celli Ddu, with a votive to right (M. O'Brien)

is not the original stones that cause injury but a modern concrete beam that has been added for safety reasons! The chamber is 8ft (2.4m) wide topped by two capstones. At the back of the chamber was a ceremonial pit near which stood an upright sandstone decorated by incised spirals and serpentine lines; a replica is now in place while the original is in the National Museum Wales in Cardiff. Strangely, according to the museum's notes on the stone, the builders of the tomb deliberately hid it from view. Carving it and placing it there was more important to them than being able to see it. Inside the stone chamber, we found a votive offering placed on an original shelf on the northern side by recent ?pagan visitors.

In the pale grey afternoon we walked down a long line of Monterey pines to approach Plas Newydd, reposing on its long green knoll beside the Menai Strait. One of our members once kayaked along the water's edge here, and saw the otherwise invisible underground boat dock where supplies for the house used to be delivered. The house mixes Gothick with neo-classical and twentieth-century work; the exterior too compromised to be either of great charm or commandingly grand. It is now National Trust, but until recently was still home to the Pagets, made marquesses of Anglesey after Waterloo where Henry Paget commanded our cavalry and lost a leg with famously laconic surprise.

A later glory of the house is the mural of a dream harbour painted for the sixth marquess in the late 1930s by Rex Whistler (1905–44): an elegant capriccio of islands, ships and classical buildings, with a quay where Neptune himself, leaving crown, trident and wet footprints, has evidently just popped ashore, presumably for cocktails. Alas, Whistler was killed soon after D-Day while serving gallantly with Second Battalion Welsh Guards, Guards Armoured, and never returned to retrieve that trompe-l'oeil cigarette left burning at the base of his imagined colonnade.

This being grey October there was not much temptation to explore the gardens (the Italianate terrace putting on a brave last show) or the arboretum. 'By God, sir, I have found the tearoom!' 'By God, sir, so you have!'

On Friday we were back over the Menai Straits to Anglesey via Robert Stephenson's 1850 Britannia Bridge for a day of prehistoric landscapes, tombs and standing stones. For this we were led by the hugely knowledgeable and informative Rhys Mwyn, experienced archaeologist, local guide, broadcaster with Radio Cymru and

musician. Plus a new coach driver, Arwin. As we crossed Rhys pointed out a statue of Nelson, erected in 1873 by Lord Clarence Paget to mark Nelson's comment that 'if you can sail the Menai Straits you can sail anywhere'. It is still used as a navigational aid.

Our first stop was the impressive and beguiling Oriel Môn (Anglesey Gallery) near Llangefni, in the centre of the Island. To get there we crossed the now reclaimed valley of the River Cefni. In the nineteenth century this area was exploited for (poor quality) coal and tended to flood. It is now drained and protected by the Malltraeth Cob (dyke) or Cors Ddyga. Oriel Môn, opened in 1991, covers both the history and art of Anglesey, and is an official repository for archaeological archives. The most prominent display in the History gallery is of the findings from the excavations at Parc Cybi, on the outskirts of Holyhead to the west (Ar YnYs Cybi or Holy Island). There, between 2006 and 2010 Gwynedd Archaeological Trust carried out one of the biggest excavations in the UK in advance of a major Welsh Government development. They uncovered a multi-period landscape from Mesolithic right through to eighteenth- to nineteenth-century farms. Of particular note were a Neolithic timber hall similar to others elsewhere on Anglesey, Bronze Age monuments, and a stone-built Iron-Age roundhouse settlement facing towards Holyhead Mountain (and therefore into the wind). There was also evidence of Romano-British and medieval cemeteries, and a Roman industrial site near the Roman sea defences and watchtower by Holyhead.

Their art collections contain many works by prominent artists, including the late great Charles Tunnicliffe RA, prolific illustrator of natural history, especially birds, and author of *Tarka the Otter* and a number of Ladybird books. He was a long-time resident on Anglesey. They hold temporary exhibitions by contemporary local artists. And they have an extremely tempting shop …

We went on to north-west Anglesey and across to Holy Island, to explore three Neolithic burial chambers at the windswept site of Trefignath, close to the sea. From west to east, these three structures show how the design of these early tombs could, and did, evolve. The most westerly and earliest, dating from 3750–3500 BC, is a box-like chamber; the central one has all but collapsed; the third chamber still has its two capstones supported on five uprights. It is thought that these structures were used over a period of 1500 years. Some accidental discoveries of pottery and human bones were made there in the eighteenth century,

Excavations at the site in 1977–9 yielded stone and flint tools and Neolithic pottery from beneath the chambers, showing that the island's first farmers occupied this place before they constructed the three stone chambers. To late Neolithic eyes, the covered mound at Trefignath must have been a significant feature of the island's landscape.

On then to admire the impressive Iron Age settlement site at Ty Mawr, not far from Parc Cybi, excavated in the nineteenth century by the antiquarian W.O. Stanley and 'consolidated' by the Ministry of Works in the 1920s. Ty Mawr means 'large house' and was the name of the subsequent farm. Here on a slope below a hillfort there are the remains of about 20 roundhouses plus some rectangular workshops or animal sheds. These date from pre-Roman to around fifth to sixth century AD and were probably not all inhabited simultaneously. They show continuity of Iron Age settlement

traditions right through Roman times and beyond, underlining that Anglesey was only lightly administered by the Romans – no definitive Roman road has yet been found on Anglesey. When and why roundhouses finally went out of use is not known. The houses face the sun, south-east, away from the wind, with views of Snowdonia. One house has some internal partitions and another a probable mortar stone *in situ*. Stanley claimed to have found slag in the workshop/sheds and that they may have been slate-roofed, but there is no longer any evidence of this.

By now we needed lunch, so down the road for a picnic at the spectacular RSPB site at South Stack, the most westerly point of Anglesey. Sitting in the sun we had views out to sea and along to the 1809 South Stack lighthouse in the distance. The reserve is particularly renowned for being one of the few places in the UK where choughs breed, and some were indeed claimed by eagle-eyed twitching members.

After lunch it was back over to the main island and down the west coast past the RAF Valley base at Llyn Cerrig Bach where extension of the runway in the 1940s, plus dredging to prevent sand in aircraft engines, uncovered many wetland Iron Age offerings. These are now in the National Museum in Cardiff, and include parts of chariots from southern England, 'killed' swords, jewellery and the famous slave chains, recently seen in the *Nero* exhibition at the British Museum. A little further on Rhys pointed out a Bronze Age standing stone with early Christian inscriptions.

We were fortunate to have our guide Rhys with us when we arrived at the padlocked entrance to Barclodiad Y Gawres, 'The Giantess's Apron'. A few frustrated visitors were waiting, but Rhys had the key, which has to be booked in advance and a £5 deposit paid. The site is on a blowy cliff-top by the sea, and we temporarily 'lost' one of our group on the walk up the path to it. As we looked down we spotted him, undeterred by the howling wind and lashing waves, plunging into the sea! But wild swimming in Cable Bay in wild Wales is not for everyone. Meanwhile in this later Neolithic cross-shaped burial chamber, the drier members who had remembered their torches enabled us to see the decorations on five quite exceptional carved and pecked upright stones inside, which were only excavated in 1952–3. Patterns of zigzags, lozenges, wavy lines and spirals run across these stones and can be compared with those at New Grange and other tombs in the Boyne valley (Ireland). The central part of the structure had been used for ritual, which involved throwing a strangely inedible 'stew' containing frog, toad, snake, mouse, hare, eel, wrasse (a rather colourful fish) and whiting over the embers of a fire, then covering the whole thing with limpet shells and pebbles. More reminiscent of Macbeth's witches' brew than *MasterChef*, it is thought that this stew was not for human consumption.

After stopping off at Llys Llewleyn for tea and biscuits courtesy of Caroline, we drove on through the area of Aberffraw (meaning across the River Ffraw). This was a stronghold of the medieval princes of Gwynedd and Wales; however, the resultant courthouses and a church have not yet been found. On the way back to the Menai Bridge we visited St Caffo's Church to see seven gravestones with early Christian inscriptions dating to the tenth century. These are now in the churchyard, having been moved from the earlier church; the current church is mainly

nineteenth century with some Norman features. The stones are very worn but according to Rhys would have been better shaped than earlier fifth- to sixth-century ones and could at this date have had some ogham inscriptions as well as Latin ones, which is less common in North Wales than the South.

We had spectacular views across the straits before we returned tired and happy, over Thomas Telford's 1826 bridge and to Caernarfon, for our last dinner together. Caroline Raison and Peter Ginn had organised an excellent meeting, of which were all very appreciative, especially after a two-year gap!

A Footnote

Diane Webster

We began our visit to the slate museum by watching the excellent introductory film, *To Steal a Mountain*. What an inspired title – stolen, indeed! Several other quarries and their transport systems were described, including the incline system and steam railway near Abergynolwyn. Michael and I were married at Abergynolwyn station.

In 2006, Michael spent a week working in Aberystwyth and North Wales, and stayed in Towyn with his close friend and former boss, Brian Dix, our former Meetings Secretary. They went for a trip on the Talyllyn railway and Brian remarked casually, 'They do weddings here'. A plan was hatched, and a booking made.

The visit was described enthusiastically and I was promised a visit in December. Nearer the date, bureaucracy intervened and Michael had to confess. 'Actually, we're getting married – is that alright?' Some

The Websters aboard 0-4-0 tank engine *Dolgoch* (1866, Fletcher, Jennings & Co.) (© B. Dix)

fifteen years later, I am still waiting for a proper proposal.

With just two friends, and Brian as our best man, it was a wonderful day. We had the entire train to ourselves, and tried out all the carriages. We were treated to a ride on the footplate and our wedding breakfast was Welsh cakes and champagne at the station.

We stayed with Brian last October and, of course, took a trip again on the train. Brian was there on 28 July 2021, when the announcement was made that the North West Wales Slate Landscape Areas had finally been awarded UNESCO World Heritage Status. Both Abergynolwyn and Llanberis are included. So the ghosts of the stolen mountains can rest in peace. They have their memorial.

Contact information for Members

We have recently had to cancel a monthly meeting, which reminded us how very diffcult it would be to let members know were this to happen again. We could at least contact those whose email addresses we hold; if you have email, but have not told our Administrator your address, please send it to admin@royalarchinst.org.

The RAI office

The Institute's Administrator will usually be at the Society of Antiquaries on the second Wednesday of each month from October to May, between 11 am and 3 pm. The direct telephone number is 07847 600756, the email is admin@royalarchinst.org and the postal address is RAI, c/o Society of Antiquaries of London, Burlington House, London, W1J OBE.

Attending Lectures at Burlington House and Using the Antiquaries' Library

Brian Kerr, Hon. Secretary

Following the reimposition of Covid-19 restrictions in England in December (known as 'Plan B'), the January and February lectures were available online only. With the easing of Covid-19 restrictions, we resumed 'in person' lectures at Burlington House in March, and intend to continue with these for the April and May meetings. We are also continuing to livestream the lectures to members who are unwilling or unable to travel to London, thus increasing the audience for our lectures. Meetings of Council are also now taking place at Burlington House, as are other committee meetings, with a mixture of in-person and Zoom participation,

The Antiquaries' Library is now open from Monday to Friday, 10 am to 5 pm. There is no requirement for Fellows or Institute members to pre-book visits to the Library. The Society does ask that any books in closed access or archives/manuscripts are requested at least a day in advance so that they can ensure they will be able to retrieve them in time.

Further information on Library opening, and access to the catalogues, can be found online at https://www.sal.org.uk/collections/visiting-and-using-our-collections/.

There is now no requirement to complete Covid declaration forms, no temperature checks on arrival, and the wearing of facemasks, though recommended, is optional. There is, however, a QR code for the NHS Track and Trace app at the entrance to Burlington House, and staff, Fellows and visitors, including Institute members, are asked to scan it before entering the building. To keep us all safe, the Society is still making hand sanitiser and masks available in the main entrance, as well as in the Library.

While we have been told by the Government that they do not want to reimpose mandatory restrictions, it remains possible that the above information is subject to change and *in extremis* it may be necessary to cancel meetings if circumstances change or Government guidance so demands. For enquiries, the Institute Administrator's mobile number is 07847 600756.

The Union Chain Bridge: A New Lease of Life for a Border Icon *Sue Shaw*

The elegant Union Chain Bridge spans the River Tweed about five miles upriver from Berwick-upon-Tweed (Northumb.), uniting England and Scotland. When it opened in 1820, it was the first chain suspension bridge in Europe designed to carry wheeled traffic and remains the oldest in the world still in use. Built at a time of rapid expansion of the British road network, it is of world-wide importance in bridge development.

The Berwickshire Merse north of the Tweed is one of the breadbaskets of Scotland. In 1800, it was in the vanguard of agricultural improvement to meet the needs of a rising population. Neutralising acid soils required large quantities of soluble lime. This came from north Northumberland, just a few miles away, also the local source of coal. However, the route from Northumberland into Berwickshire by horse and cart involved crossing the Tweed, either by detouring to the bridge at Berwick, or via a more direct but low-water only crossing at New Water Ford, just north of the present bridge site. The ford was hazardous: a steep descent to river level; the risks posed by tides, floods and a shifting shingle bottom; and another climb up the other side. Every season, horses were lost. In 1802, Parliament had authorised the building of a bridge to replace the ford, but nothing immediate was done.

Suspension bridges were not a new concept, but were narrow and limited to pedestrian traffic. Their potential advantages included an absence of piers mid-channel to obstruct river traffic or to be swept away in times of flood, and, above all, enormous savings in construction costs.

About 1800, commercial pressures in the developing industrial economy and advances in engineering science and material technology encouraged engineers to reconsider their potential. In particular, processes to manufacture malleable wrought iron at scale had been developed in the 1780s.

Between 1801 and 1810, the American James Finley built eight suspension bridges of increasing span, culminating in a bridge at the Falls of Schuylkill, Pennsylvania, which collapsed under a heavy load of snow in 1816. By 1818, no fewer than five suspension footbridges had been erected over the River Tweed or its tributaries.

Much of the credit for the Union Bridge and the design and manufacture of its ironwork goes to Samuel Brown, a retired captain of the Royal Navy.[1] As a naval officer he became convinced of the advantages of wrought-iron chain over hemp rope and began to explore the potential for its use in other contexts including, from 1813, suspension bridges. He established a substantial business manufacturing chain, and experimented to understand its breaking strain. His principal innovative contribution to the Bridge was to design the main suspension chains using multi-bar links, a critical factor in its success. But he was not a professional engineer, and the overall design was a collaborative effort. Professor John Leslie of Edinburgh University checked the mathematics, Sir John Rennie (Snr) designed the masonry towers and Rennie, Robert Stevenson and James Jardine all advised on the integrity of the ironwork.

The masonry tower on the English side (concealed by trees in the photographs) abuts a cliff, higher than itself. At the top and a little to the north is a cliff-edge fort, just visible as a crop-mark in aerial photographs, never yet fully investigated and therefore undated, but

indicating that this is an ancient and strategic place.[2] The proximity of the cliff means the road is forced into a right-angled bend immediately after crossing the river, so that a long-wheelbase vehicle such as a coach cannot cross. In 2016, the Institute's Borders Summer Meeting itinerary did not include a visit to the bridge, perhaps for that reason. (Members who attended the Dumfries Meeting in 2019 will remember the attempt to reach Hermitage Castle, thwarted by similar access problems.)

The Union Bridge was designed for horse-drawn carts and wagons, and its importance as a transport route for lime and coal did not long survive the arrival of the railways, though it has remained a useful and much-loved route for local traffic. In its first two hundred years, it was strengthened and repaired many times. It is now nearing the end of another major restoration project, sponsored by Northumberland County Council, Scottish Borders Council, Museums Northumberland and the Friends of the Union Chain Bridge, and funded in part by the National Lottery Heritage Fund. Work began in October 2020. The ironwork and deck have been dismantled and each component part carefully examined to check whether it is capable of reuse. In practice, the majority of original parts have reached the end of their working life and, notwithstanding some controversy, will be replaced using modern materials, wrought iron now being in short supply. Although the programme of work has slipped a little, the Bridge is expected to reopen in the summer of 2022. It should be good for at least another hundred years.

1 Miller, G. and Jones, S. K. 2017, *Samuel Brown and the Union Chain Bridge*, Friends of the Union Chain Bridge.

2 Lock, G. and Ralston, I. 2017, *Atlas of Hillforts of Britain and Ireland*, http://hillforts.arch.ox.ac.uk/records/EN0553.html

View north of the bridge with its deck partly dismantled (Jim Gibson, © Friends of the Union Chain Bridge)

ROYAL ARCHAEOLOGICAL INSTITUTE NEWSLETTER

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NEXT ISSUE Copy for the next issue must reach the editor by the end of June 2022 for publication in September 2022.

THIS ISSUE'S COVER PICTURE: The main staircase at Penrhyn Castle, by Thomas Hopper; see the Gwynedd meeting notes, p. 21 (© J. Haes)