NEWSLETTER of the INDUSTRIAL ARCHAEOLOGY SECTION of the DEVONSHIRE ASSOCIATION

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Acknowledgements and Submission Guidelines.

Visits/Talks/Walks Reports

1. Field Trip. 'English Natural Ice Co.' Sourton Tor. Bill Nichols. 17th June, 2025

Twelve of us gathered in 'perfect walking weather' at the Prewley Moor car park, on the lane to the South West Water Treatment Works, before Bill led us up towards Sourton Tor and the site of the 'Ice Factory' (Figure 1).

Figure 1. Setting off for the ice factory. Sourton Tor is directly above it on the horizon. We were walking on a section of the King Way. *Image courtesy author.*

In the mid to late 1800s, demand for ice in Britain was surging. Without widespread mechanical refrigeration, ice shipments from Norway dominated the market. Wealthy estates such as Sir Thomas Acland's Killerton House, near Tiverton, had their own icehouses while ordinary markets depended on imported blocks.

In 1875, Truro-based mining engineer James Henderson, then a member of the Institution of Civil Engineers and a former railway surveyor, identified a commercial opportunity on the northwestern slopes of Dartmoor. The area offered a natural spring, consistently low winter temperatures, and convenient access to both a turnpike road and the recently opened railways at Sourton and Bridestowe; an ideal combination for his purposes (however, see later note). In 1874, Henderson petitioned the Duchy of Cornwall for a lease, initially offering £15 annually for 75 acres which was declined. The following year however, he successfully secured a 21-year lease on 5 acres at £10 per annum, plus a royalty of twopence per ton.

The infrastructure consisted of

- **Terraced ponds**: 5 rows of ponds carved into the hillside, each about 3ft deep and 30ft long, subdivided into shorter sections and fed from a single spring.

Figures 2a and 2b. The terraced ponds (there's much to be said for drone photography!). *Images courtesy of author.*

- **The availability of spring water:**

Figure 3. The spring that fed the water to the channels. *Image courtesy author*.

- **Storage chamber**:

Figure 4. What remains of the chamber today. *Image courtesy author*.

A large insulated building was constructed about 60ft by 20ft as an ice house, with a cutting through the north wall of the bank. The exit was onto the downhill slope for wagons which could then easily go down the slope to Sourton Village and the main road.

The setup utilized Dartmoor's natural resources of clean, spring-fed water, and the reputation that this was the coldest place on Dartmoor, the aim being to harvest seasonal ice. Henderson also had a patented method (1877) of compressing snow into denser blocks, although that was not done here as it required a steam engine to drive the machine. Bill believes that the ice was taken by wagon from Sourton village to Lydford, and onward all the way to Plymouth. The railway to Lydford (LSWR) had just been opened in 1874, but only extended by a different railway company to Plymouth in 1876, with a probable transfer of the ice load at Lydford.

Ice production was totally dependent on winter severity.

- **1876:** The ice works were described as "ingenious," but the first winter's yield was modest.
- 1**878–79**: A strong winter yielded a 'large crop'.171 tons went to Plymouth; 20 tons to Exeter.
- **1879–80**: Continued success with a substantial yield of around 300 tons sold.

The company operated until 1882. Its demise was caused by a combination of mild winters (which produced little ice), severe winters (which hindered pond access and ice transportation) and the additional market pressures resulting from the rise of mechanical refrigeration, especially in Plymouth. An attempt to auction off the ice factory proved unsuccessful and so, under the terms of the lease, the ponds were filled in and the area was restored to its previous condition. Much of the site was dug over and opened up by the American Army during the second world war, and any stones left were 'borrowed' for use elsewhere.

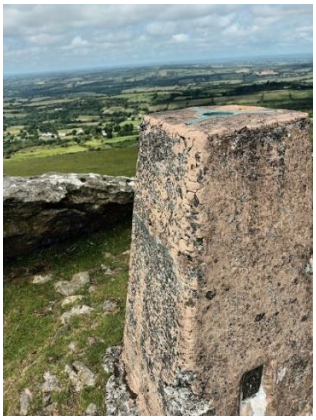
Notwithstanding, this wonderful industrial archaeological site stands as a rare example of pre-refrigeration ice harvesting, set in a magnificent moorland landscape and highlighting the Victorian tenacity for human enterprise.

Supplementary Matters.

Following our investigations of the ice works we continued for a short distance further up the moor until we reached the Tor. From here, Bill pointed out the route of the King Way, a historic drover's route across the northern edge of Dartmoor, believed to have linked the royal hunting estate at Okehampton with those at Lydford and Tavistock. The official route for the Cornwall postal service went via Okehampton over Lewdown to Launceston, bypassing Lydford and Tavistock. However, it appears that, when needed, the postal couriers used this drove road to Lydford and Tavistock as it was shorter and easier than the turnpike main road. Also, just out of site to the south was the route of the Rattlebrook Peat track, a tramway built in the 19th century to transport cut peat from the Rattlebrook Head workings on Dartmoor down to the railway at Bridestowe. It was operated with horse-drawn wagons and followed a winding course across the moor. It was abandoned in the early 20th century as demand for peat declined.

Bill informed us that Prewley Moor Waterworks (where we were parked), while having the intake from Meldon Reservoir, is now primarily a transfer pumping station between the major reservoirs at Wimbleball and Roadford. Water is moved between the two reservoirs as input from the feed rivers vary, and to meet the expected demand elsewhere.

Finally, your author does love a good trig pillar (!) and there is, unsurprisingly, an example on the Tor (Figures 5). Its bench mark on the flush plate (S5606) told me it was at an altitude of 440m. However, the top cap was missing, so I had hoped to look right down the sighting tube to the centre mark located deep within. Sadly, the tube was filled with water and stones (obviously!), so no joy on that one.



Figures 5a and 5b. Sourton Tor Trig Pillar with missing cap. *Images courtesy of author.*

On our return to the car park, we thanked Bill for his expert guidance and deep knowledge of the ice factory, and for highlighting the many other fascinating and historic features of this remote moorland landscape.

To conclude, Bill subsequently provided an intriguing factoid loosely associated with the visit.

In 1881, the first shipment of frozen meat from New Zealand successfully arrived in London aboard the sailing ship *Dunedin*. However, a subsequent 1882 voyage to Liverpool ended in failure when bad weather delayed the ship. It ran out of coal needed to power the steam engine that, in turn, operated the refrigeration system. This resulted in the entire loss of the meat cargo.

[Recorder: Bill Nichols and Colin White] [Back to top]

2. Field Trip. The Rolle Canal and Sea Lock led by Hilary Wills. 4th September, 2025.

Fifteen DA members gathered for this event on a day when the Met Office had warned us to expect a soaking. Thankfully, on this occasion, the forecast could not have been more wrong.

Our tour began at the striking Annery Lime Kilns near Weare Gifford (Figures 6). From there, we followed a path of just over a mile, with the River Torridge to our right and the remains of the Rolle Canal on our left. The walk ended at the Rolle Canal Tidal Lock, where canal and river meet (Figure 7).

Figure 6 a & b. Annery Lime Kiln *(Images courtesy Mike Stannard)*

Figure 7. The point at which the Rolle Canal meets the River Torridge. The remains of part of the tidal lock can be seen in the foreground. *(Image courtesy Mike Stannard)*

In the late eighteenth century, several routes were proposed for a canal to carry Welsh coal and limestone inland from the port of Bideford, in order to make quicklime to improve the fertility of the region's acidic farmland. Ultimately, John, Lord Rolle, commissioned the engineer James Green and, in 1823, construction began on a canal running for about six miles mainly up the west side of the Torridge River valley towards Great Torrington.

Green had recently completed the Bude Canal where, rather than utilising the more traditional locks to negotiate inclines, he had successfully employed *water-powered* inclined planes and small tub boats to overcome changes in water level. He adopted the same methods on the Rolle Canal, which was fully operational by early 1827. For nearly half a century, until it was overtaken by the railway in 1873, the canal proved more profitable than many of its contemporaries. Its success stemmed largely from the steady movement of essential heavy goods: coal and limestone brought inland to produce quicklime where it was needed, while outward cargoes included clay for pottery and timber for shipbuilding. Farm produce was also transported from the inland agricultural areas to feed the growing coastal populations.

It should also be noted that the decline of the canal network was due, not only to the arrival of the railways, but also to changing agricultural practices. Quicklime was gradually replaced by more modern, safer, and easier-to-produce chemical fertilisers – ironically developed, at least in part, through the work of Rothamsted Research at North Wyke near Okehampton (*See Newsletter No10, Event 8*).

Key archaeological features of the canal were: (numbers correspond to map annotations)

- **1.** *The sea lock* and stretch of canal up to Annery Kiln; the subject of this field trip.
- **2.** As mentioned, the *Ridd inclined plane* (destroyed during the building of the Bideford to Torrington Railway).
- **4.** A swing or a lift bridge at Yeo (possibly).
- **6.** *The Beam Aqueduct* built in the grounds of Lord Rolle's residence. It carried the canal at a high level above the steep Torridge valley. Today it has been repurposed as a new entrance to Beam House. It is thought that this aqueduct is referred to as *Canal Bridge* by Henry Williamson in his classic tale of '*Tarka the Otter'*.
- **7.** *Roving Bridge* (otherwise known as a changeline, turnover or even snake bridge) allowed the towpath to cross to the opposite bank while the tow-horses remain tethered to the barges. It is in good condition having been restored as a millennium project by Lord Clinton.
- **9.** *The Rolle Road* was the Canal Company's headquarters. The canal is largely intact here. A Rolle Canal warehouse remains here.
- **10.** *Taddiport*. Here a footpath crossed the canal on a swing bridge. No evidence remains.
- **11.** *New Town Mills*. Here is the last canal bridge: a road bridge. It spans both the river and the canal. The canal is not visible at this point but various hardware artifacts such as water wheels are still in evidence.
- **12**. *Rosemoor*. The headwaters of the canal are within the Rosemoor RHS property and showgrounds. The 'Rowes Moor' lime kilns would have been the final drop off point for lime and coal.

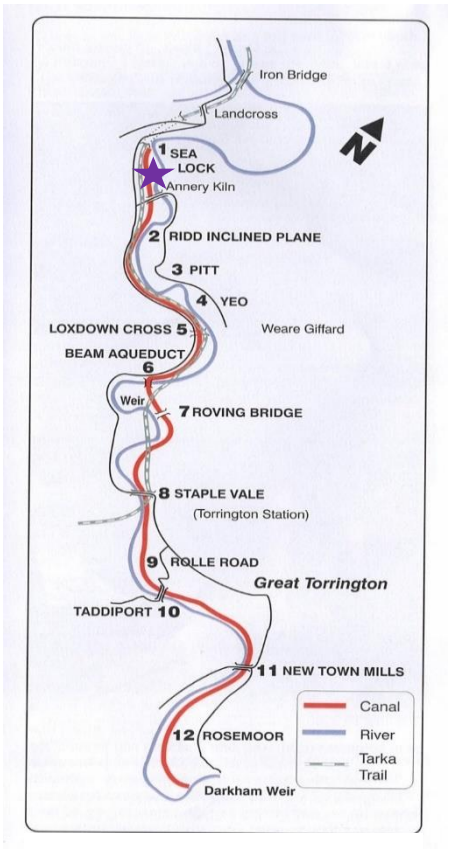


Figure 8. Canal Map *(Image courtesy Inland Waterways Association)*

However, the primary purpose of our visit was to learn of the restoration work carried out on the wharf area and sea lock. This arduous manual labour has been carried out by a small team of dedicated volunteers led by the enthusiastic and determined Adrian Wills. As reported in *Newsletter 11*, Adrian sadly passed away on the 6th August, 2024 following a full day working on his beloved project. His wife Hilary, now carries the torch for this monumental labour of love and she was our engaging and insightful guide for the day.

Adrian and his team began by clearing the sea lock area and was permitted to breach the Torridge in order to flood a 16-acre field to create a saltmarsh habitat (marked as a purple star on the map -Figure 8).

It's probably best to describe the remaining aspects of the renovation and rebuilding works at the sea lock pictorially.

Figure 9. Photo showing almost the full extent of the sea lock. The indentation where the upper gates would be hinged is clearly visible near the far ladder *(Image courtesy author)*

Figure 10. Photo showing some of the equipment loaned or donated by The Inland Waterways Association. In the foreground are two tub boats that would have been pulled by horses up the canal. *(Image courtesy author)*

Figure 11. The Rolle Canal Sea Lock main office has been rebuilt, modelled on original plans. It sits on 8 oak beams which were originally made to be used as lock gate balance beams. The office is now the Rolle Canal and Northern Devon Waterways Society's Museum space. *(Image courtesy author)*

Figure 12 a & b. Limestone and coal, both imported from Wales from which quicklime would be manufactured in the numerous kilns located along the length of the Rolle Canal and spread on the local fields to neutralise the naturally acidic soil. *(Image courtesy author)*

On behalf of the Industrial Archaeology Section of the Devonshire Association we would like to convey my heartfelt thanks to the members of the Rolle Canal and Northern Devon Waterways Society for hosting and supporting our field trip, and especially to Hilary Wills whose knowledgeable and friendly guidance greatly enriched our visit.

[Recorder: Colin White]

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3. The Dartmouth Lumpers and the Coaling Companies in the 1920s. Presented by Jonathan Turner. Flavel Art Centre, Dartmouth. 15th October, 2025.

This presentation was very well attended, with some attendees taking advantage of the South Devon Steam railway as an appropriate means of transport to and from the event.

By the end of the nineteenth century, Dartmouth had become the principal coal port on the south coast, supplying steamships with coal for bunkering, topping up their fuel stores at the beginning or end of their voyages around the Empire and elsewhere. At its height, more than forty ships a week called at Dartmouth to take on coal, which was stored in floating wooden hulks moored around the harbour. The work was carried out by crews of coal lumpers, who waited on the quayside to be summoned.

It was gruelling, filthy, and hazardous labour for men who relied entirely on this trade for their livelihood. Paid by the ton of coal handled, mostly by hand, though sometimes assisted by a manual winch or crane, they worked in gangs of six to eight under a foreman, easily recognised by his bowler hat. Figure 13 shows two such gangs at work in a hulk off Dartmouth's Combe Mud.

Each gang waited on the Embankment or at Bayards Cove and raced the other gangs in their gig to be first to an incoming ship and secure the job. Most jobs involved moving between 200 and 1,800 tonnes of coal as quickly as possible, working a standard 44 hours per week before overtime began. After four to eight exhausting hours, the men returned to tiny crowded cottages near the harbour, around Clarence, Higher, Silver and Lower Streets, and St Saviour's. Here they would wash, eat, and rest before the next ship. The rented cottages had no power or running water. Clearly, they were insanitary and unhealthy hovels.

Figure 13. Lumpers on a coal barge and hulk off Combe Mud, Dartmouth. c.1880 *(Image courtesy Dartmouth Museum)*

However, Jonathan showed evidence from reports that some families managed well, through a combination of natural health, resilience and good humour. A quote from one interviewed lumper stated:

"We were a happy family and had to make our own entertainment. In summer, the older ones took the younger ones out to Sugary Cove to play. We only had one costume between us so we had to take turns to bathe and none of us ever learned to swim."

The main job of the lumpers

Shovellers. Worked in the ship's hold, continuously shovelling loose coal into baskets, a task so relentless it permanently bent their backs.

Winchdrivers. Operated the winch to hoist 250lb baskets safely to deck level, a tense, repetitive job that often led to exhaustion and mental strain.

Planksmen. Balanced along 16in planks high above the water, carrying heavy baskets from hulk to ship in dangerous and nerve-racking conditions.

Carriers. Took the baskets from the planksmen and emptied them into chutes feeding the coal to the trimmers waiting below.

Trimmers. Worked for hours in the ship's hold, redistributing coal evenly in stifling heat and darkness, breathing dust so thick they spat it out long after their shift ended. Often the coal would actually be slow-burning in the bunkers as they shovelled.

Figure 14. Trimmers redistributing coal within a ship's bunker in Sydney *(Image courtesy Dartmouth Museum)*

The Dart Harbour Commission licenced three coaling companies to maintain a coal hulk in the harbour. Competition ensured refuelling costs were kept low for steamers. But, by 1922, one company owned by Commander Evan Reid acquired the other two, creating a monopoly (known as E&R) which severely impacted even further the dreadful working conditions of the lumpers.

Before the First World War, around 200–300 lumpers and twice as many dockworkers made coal handling Dartmouth's largest employer, supporting about 1,000 people. Frustrated by stagnant pay of 2d per tonne and falling trade to Brixham, the lumpers went on strike in 1913 for a rise to 3d, but E&R's Dartmouth Coaling Company diverted ships elsewhere, forcing them back to work. The dispute, however, drew in union organisers including Ernest Bevin, leading to the formation of a local branch of the Dock, Wharf, Riverside and General Workers Union in early 1914. However, war soon overtook their struggle and the younger lumpers left town for a very different sort of fight.

During the war, labour shortages pushed earnings up to £8 to £10 a week, prompting E&R to introduce mechanised cranes (See Figure 15) which replaced much of the manual workforce. In 1917, arbitration averted a strike and established a new pool-and-rota system, where Union-registered men worked in rotation and shared earnings, thus ending the rivalry between gangs and fostering a close-knit community of Dartmouth men.

Figure 15 Floating crane in Dartmouth *(Image courtesy Dartmouth Museum)*

After the war, promises of 'a land fit for heroes' gave way to global recession and fierce competition, especially from America. Shipping to Dartmouth fell sharply from around 1,000 to barely 500 visits a year, and cutting family incomes to about £1.50 a week; this despite the pool-and-rota system. The 1921 census recorded roughly 150 coal dockworkers, suggesting "lumper" was used as a general term for all involved in the coal trade.

Unemployment rose sharply in Devon, where dependence on seasonal tourism left towns like Dartmouth exposed. By October 1921, about 200 residents were claiming the new Unemployment Benefit of around £1.50 a week, rising to 238 folks just a month later. Unions and charities urged relief efforts, leading to public works such as improvements to the South Embankment. By late 1921, many lumpers still lived in overcrowded, unlit cottages without sanitation or running water, surviving on shop credit, scraps of fish, and cheap soup from the town kitchen, as poverty in Dartmouth reached desperate levels.

In 1922 E&R had established a strong position in the south coast bunkering trade and secured their position with the acquisition of Cadeby's operation in Brixham. This meant that they now controlled bunkering operations along the south coast, from Plymouth to Portland, giving them an even stronger position to negotiate with their workforces. In September, the Dartmouth Coaling Company (DCC) offered 50 men direct employment at £1.50 a week with no overtime and reduced piece-work rates, but none applied, and the Union insisted on 3d per ton and retention of the pool-and-rota system to secure a living wage.

The DCC strengthened their position by employing further mechanisation. They locked out the men, closed the port, and refused Union negotiation. They offered only £1.50 – £2.75 a week for just 50 men, while pressuring other ports to continue working. This led to nine months of severe hardship until government arbitration upheld mechanisation and reduced piece rates. They did, however, retain the Union-run pool-and-rota system, although the ageing lumper workforce meant few sons were likely to continue in the trade. Although the dispute was settled, ship traffic to Dartmouth remained low, leaving many families in extreme hardship, with national benefits exhausted and local relief urgently needed. By autumn 1923, the situation had worsened, with dozens of ships laid up and only 108 bunkering that year (Figure 16).

Figure 16. Ships laid up on the Dart in the 1920s. *(Image courtesy Dartmouth Museum)*

The country staggered on, but with unemployment rising to unsustainable levels, it came to a head in the General Strike of 1926, followed by a coal miners' strike. It was a disaster for Dartmouth. Of course, E&R prospered with their lower operating costs achieved through the lock-out. They built a new head office in 1926 and commissioned a new steam tug: the Portwey in Portland in 1927. Even though the writing was on the wall for coal, there was still good money to be made in the final years of the industry.

While the end of coal bunkering resulted in far fewer jobs for lumpers, it also brought an end to a hazardous and unhealthy trade that barely provided a living wage. The desperate conditions following the 1923 slump compelled the council to take responsibility for improving environmental and sanitation standards, prompting the town to expand away from the river and up the hill, fostering the growth of the area called Townstal. The end of bunkering also forced Dartmouth to accept the end of its role as a commercial port, and to focus more deliberately on tourism and leisure, allowing the town to present a cleaner, more attractive face to the world – the one familiar to generations of visitors today.

[Recorder: Colin White]

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4. Talk. 'Reforesting Devon' Sir Harry Studholme Bt. Thorverton Memorial Hall. 14th November, 2025.

Sir Harry addressed the Memorial Hall, packed to capacity despite bad weather.

He began by evoking the pleasure of walking in "natural" woodland, only to reveal that Devon forests have been exploited by humans for millennia, resulting in a forest archaeology far removed from any native Wildwood.

He outlined the plan of his talk: how forests arrived in Devon, how they were managed as part of a rural economy, how the Victorians pursued a revolution in forest management, how two World Wars affected Devon's forests, and a consideration of what the future holds for them.

The earliest trees are found in fossils of the Devonian period (420-360 mya), and developed over vast periods of time, until broadleaf angiosperm trees evolved in a climate much warmer than our own. Progressive, intermittent cooling later produced a series of ice ages. Each advancing ice sheet swept Devon free of trees. During the warmer interglacial periods, some species returned, extending north from refugia on the continent. Each time however, the number of species decreased. The cumulative effect of this sequence of glaciations was to reduce the variety of returning trees, so that after the last glaciation period, around 11,700 years ago, only about 30 "native" species returned to repopulate Devon; those which crossed the land bridge that joined Britain to the continent at the time. This number compares with 900 native species seen in North America and 4,500 seen in China.

For the first 3,500 years, the new growth would have flourished. With the arrival of; firstly Neolithic farmers 6000 years ago, then the Beaker People some 1700 years later, and finally the development of Bronze Age technology, progressive deforestation occurred. This continued through the Iron Age and during Roman occupation, only to be degraded further after the arrival of Saxon farmers. By the time of Domesday (1086), it is estimated that only 4% of Devon was forested.

In the 14th century, a series of crop failures led to widespread famine, resulting in a weakened population which was vulnerable to the black plague of 1349. This halved the Devon population. The resulting change in rural labour and the collapse of the feudal system allowed a new rural economy to develop. A regenerated "ancient woodland" thrived for 500 years, between 1350 and 1850. Though the virgin forests of 5 millennia earlier had long disappeared, their successors were managed to provide essential timber for building, charcoal and firewood. This management relied on the capacity of broadleaf native trees to resprout from stumps, either by cutting down to ground level (coppicing) or above head height (pollarding). The ancient woodlands of Devon, mainly oak coppice with hazel understory, underwent a rotation system of about 20 years, but also leaving selected standard trees to grow over longer periods to provide larger timber. This sustainable system had the added benefit of allowing light through gaps in the forest canopy which favoured a rich understory of plants and wildlife.

Timber trees in Devon were required for Tudor shipping, and faced increased demands in the Civil War for guns, boats and barrels. Increasing awareness of the importance of the nation's timber was recognized in Arthur Standish's monograph, *The Commons Complaint* (1611) and John Evelyn's book, *Sylva* (1664). Timber imported from Baltic countries gradually reduced dependence on domestic timber, as did the increasing use of coal and coke which replaced the traditional need for charcoal. By the end of the eighteenth century, however, a new demand on Devon's oaks was placed by the rapid expansion of the tanning industry to supply an increased demand for leather.

A revolution in Devon's forestry followed in the Victorian period when substitutes for Devon oak bark were found. Cheap coal was distributed on the new networks of railways, and maritime

trade brought sawn hardwood and softwood timber from Canada and the Baltic. With major movement of poor rural people to cities, traditional forest management ceased. Derelict woods found a new role in pheasant shooting.

Figure 16. Sir Harry Studholme
(photo by Mike Stannard)

Also in the Victorian period, Romantic writers such as Wordsworth and Coleridge initiated a new vision of forests as uplifting places of beauty, which encouraged visits by a wider public. Amongst the land-owning classes, exemplified by the Rolles of Bicton and the Aclands of Killerton, improvement of estate landscapes became a passion. This was supported by Devon nurseries such as Lucombe and Pince, and the Veitch dynasty, with exotic trees imported from the Americas and from Asia. In addition to the decorative, a new wave of conifer timber trees appeared, exemplified by the Douglas Fir (1827). Arboricultural societies were founded, and new ideas on a sustainable forestry industry imported from Germany. Old coppice-management fell by the wayside and Devon's forest cover fell to about 5%, half of its present level. At the same time, a growing appreciation of forests for the enjoyment of the wider public was expressed in the establishment of the RSPB (1889) and the National Trust (1895).

Everything changed for Devon's forests at the onset of the First World War. Threatened timber imports resulted in a high demand for the county's broad-leaf woods. As a consequence, many simply disappeared. The vast demand for war materiel exposed a severe deficiency in the nation's timber resources. In order to rectify this after the war, a committee under Francis Acland of Killerton recommended the establishment of a Forestry Commission, which was legislated in 1919. One of its first Commissioners, Lord Clinton of Bicton, planted the first tree in Eggesford Forest in 1919. Agriculturally poor land was purchased: Haldon and Halwill (1929), Bellever (1933), or transferred from the Duchy at Fernworthy (1931). These areas, too poor for broadleaf trees to thrive, were planted mainly with Sitka spruce, larch and Scots pine.

The Second World War saw a return to domestic harvesting, as U-boat attacks disrupted timber imports, although the remnants of ancient woods were relatively protected. After the war, a new energetic generation of foresters in the private sector planted estates such as those of Dartington, the Clinton Devon Estates and Fountain Forestry. Increased public appreciation of ancient woodland was associated with criticism of coniferous plantations, encouraged by writers such as Oliver Rackham, and after the foundation of the Woodland Trust (1972). From 1990 onwards, most planting in Devon was of native broadleaves. The role of the Forestry Commission changed to include public access to forests and ecological research. Haldon forest became one of the county's most visited woodlands.

The upshot of all these developments is that woods now cover a larger area of Devon than they have for at least a thousand years, with trees larger and older than they have been for centuries. Devon's forest cover has more than doubled since 1924 from 4.8% to the present 10%. Broadleaf covers more than 7.5% of the county. The felling of ancient woodland stopped in the 1980s.

The future, however, is uncertain. The Intergovernmental Panel on Climate Change (IPCC) forecasts that the world's climate might warm by 2 - 4°C by the end of this century. While that time is beyond the life span of most people alive today, it is well within the life of an oak or Douglas Fir which would have to endure associated extremes of rainfall and drought. Winters are now shorter and

summers longer than they were a few decades ago, and oaks have just manifested three consecutive years of acorn abundance (mast years) for which there is no known recent antecedent; such is the behaviour of threatened trees reacting to stress.

Within our lifetimes diseases have obliterated almost all elms, and now attack larch, sweet chestnut and ash. Pathological agents that were once controlled by freezing winters are now surviving, especially in the warmer parts of the UK, like Devon. Compounding this is the plague of grey squirrels that gnaw the bark of young broadleaf trees for their sap, and the grazing of saplings by large populations of deer.

The consequence of lack of forest managements is apparent in the calculated experiment of Lady Park Wood in the Wye Valley which, after 80 years of freedom from interference, has become less biodiverse, with the exception of bryophytes. This is paralleled by declining biodiversity in ancient woodlands recorded in national surveys. The present low frequency of coppicing in Devon has reduced biodiversity in Devon woodlands, just as it did in the past.

Sir Harry questioned the current preoccupation with planting native trees, by reminding us that many species were once native at this latitude. They are better adapted to a warmer climate, and have since been introduced to this country. He issued a plea for greater diversity in forestry planting to include conifers like the Douglas Fir, which grows much more rapidly than the oak and stores twice as much carbon.

He issued a plea for active management of Devon forests, letting light into the understory, encouraging biodiversity, complexity and natural regeneration. Managed mixed forests tend to be more biodiverse because they provide a wider range of food sources and ecological niches. They allow forests to develop resilience in a changing world and offering hope for the future.

Sir Harry ended his talk by reflecting that trees were present long before us and will long survive humankind. “Devon’s trees will outlive us humans; the future is forest.”

Sir Harry’s donated talk transcript summarized by Mike Stannard

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Obituary -Graham Wills

Dr Graham Leslie Wills (1948–2024) BSc, MSc, PhD, MRTPI, MLI.

Graham Wills devoted his long career to the conservation of Devon and Exmoor’s natural environment. Born in Ilfracombe in 1948, he described his childhood as “blissful,” growing up by the sea while his parents ran a gentlemen’s outfitters and a guesthouse. Summers spent as a volunteer ranger at Braunton Burrows sparked his lifelong passion for wildlife and conservation.

After gaining a First in Zoology from University College London and an MSc in Conservation at Cardiff, he completed a PhD on the use of ecological data in land-use planning. Following a post at Glamorgan County Council, he began a 25-year career with Devon County Council, eventually becoming County Ecologist.

It was a dynamic period for environmental policy, and Graham played a central role in shaping nature conservation strategy for the county. He helped pioneer innovative practices such as deer reflectors, bat shafts, and hedgehog ramps, and was instrumental in landmark projects including the North Devon Link Road and the acclaimed Tarka Project. His publications – Devon’s Woodlands, Devon Wetlands, Devon Estuaries and Nature Conservation in Devon – remain valued references.

In 1991, Graham joined the Exmoor National Park Authority as Head of Conservation and Land Management, aptly abbreviated to "CALM." Passionate about Exmoor's ancient woodlands, which he described as 'cathedrals of the natural world', he oversaw the transfer of large tracts of moorland into public ownership and secured major Heritage Lottery funding for their restoration.

His deep historical knowledge enriched his conservation work. He led the restoration of Simonsbath Sawmill and celebrated the heritage of Exmoor through his book *The Exmoor Carpenters* (2018). Though illness prevented him from completing his next work on Pinkery Pond, his research and insight will long be remembered.

Even in retirement, Graham continued to inspire others through local projects, walking trails, and voluntary roles with heritage and conservation organisations.

Quiet, wise, and endlessly kind, Graham was valued for his ability to find common ground and his unwavering dedication to the landscapes he loved. His legacy lives on across the woodlands and moors of Devon and Exmoor; places he helped to protect 'for the nation and forever'.

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New Committee Members Wanted

Do you enjoy our events and have an interest in Devon's industrial archaeology – its mines and tunnels, canals, steam railways and engines? If so, we'd love you to consider joining our committee.

We're a friendly group of about six, and the duties are certainly not onerous. What we really need is fresh ideas and new perspectives, especially when planning future events. The committee has remained much the same for several years, and we're keen to avoid becoming tired or predictable.

We meet around six times a year at the Devonshire Association's lovely headquarters at Chitterley, set in the heart of the Devon countryside between Exeter and Tiverton. Meetings always start with fresh ground coffee and biscuits (sometimes even the posh ones!) – what's not to like?

If you're curious, please contact **Richard Pocock** at **richarddpocock@gmail.com** and feel free to come along to our next meeting on **Tuesday 13th January**. There's absolutely no obligation to join if you decide it's not for you.

Some guidelines for members who are considering submitting reports or articles for the Industrial Archaeology (IA) Newsletters.

Colin White (Recorder to the Industrial Archaeology Section of the Devonshire Association)
Email: colin.white1@physics.org

Those of you of an indomitable nature may have read and absorbed the entire twenty-five-page content of the previous Newsletter Issue 11. If so, towards the end of that newsletter, you may have stumbled upon an article I wrote on photographing the night skies above Exmoor's Burrow Farm Engine House. It was an unforgettable evening and I enjoyed writing about it.

I think it would be a good idea to include a similar article at the end of every newsletter; only maybe not composed by me. Without it, we are in danger of the Newsletter being little more than a; 'this is where we went', and 'this is where we're going' bulletin.

As a member of our IA Section, is there anything you would like to write about which other members might find interesting? This as your platform.

You can write anything that tickles your fancy really. Total freedom! But here are some ideas which you can feel free to ignore:

1. I think we'd like the article to be loosely based around things industrial archaeological. It can relate to old or contemporary subjects. Just something that you think might interest our section members.
2. The article might relate an interesting or memorable experience that didn't directly involve our Section (e.g my starry night article from the last edition).
3. Anything educational that you might have come across somewhere that we members may find of interest.
4. Opinions. Just an opinion piece. This is your platform. Get it off your chest. You know you'll feel better for it.

Regarding the format for the submission, here are some things to bear in mind.

1. Word count is up to you. About 1000 words might be taken as a very rough guide. But, as I say: your choice.
2. I don't think we need to necessarily restrict ourselves to our 'mother-county' in this section. After all, Burrow Farm Engine House is in Somerset.
3. Email your contribution to me in any format that works for you: simple email text, or as an attachment in any file format you use.

And some final thoughts.

1. Don't stress over the accuracy of your spelling or grammar. I'm happy to tidy it up. The corollary is, please don't be offended if I edit your offering so that it better blends in with the style of the rest of the newsletter. It's what editors do.
2. We have to be cognisant of copyright issues. So, your composition must be your own words (although limited quotations may be included if relevant, and you credit the sources).
   Regarding the inclusion of images, rules can be complex. If you want to include images from the web or other published sources, check to see if they come under the 'Public Domain' or 'Creative Commons' licencing umbrellas.

3. With regard to your own photographs for inclusion. If you personally took the photographs and they were taken in an area open to the pubic AND they don't include recognisable people (ie probably no faces) then you should be safe.
4. If you are unsure or you think what you want to include does not comply then still talk to me about what you want to include. We may find a way around it (say, by seeking appropriate permissions).
5. This really is hardly worth mentioning but, if you're writing an opinion piece, no personal attacks please on people or organisations. Firstly, it's not sympathetic to the congenial spirit of the Newsletter. And, secondly, we are not 'at home' to Mr. Litigation!

On a slightly different matter, when it comes to reporting our visits and events for the Newsletter and the Transactions, it's usual for any attending committee member to be 'gently persuaded' to write the reports. If I'm attending, I tend to be the default recorder. But it doesn't have to be us. If you particularly enjoyed a visit or presentation, then the committee (especially me) would be so grateful if you volunteered for the one-off task. I mention it here simply because the guidelines as laid out in the list above apply to these event-reports too.

Otherwise, let your creative juices flow, have fun and enjoy the challenge and fulfilments of publishing something pleasurable for our IA community.

And finally, finally, finally…do please let me know what you think of your newsletter; too long; too short; too boring; wrong format. I'd rather hear from you than think no one's reading the thing!

Thanks. Colin White [IA Section, recorder]

colin.white1@physics.org

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