



BOURNEMOUTH NATURAL SCIENCE SOCIETY & MUSEUM

Share our love of science

Accreditation

Grenham Ireland [Chair of BNSS Trustees]

Many BNSS members will remember that in 2015, thanks to a great deal of work done by **Ray Chapman**, our then Curator, we became a museum that was 'Accredited by the Arts Council'. 'Accredited status' gives opportunities to the museum to apply for particular grants and take specimens on loan but more importantly it recognises that the museum is being run to a particular standard. The way it manages its collections, the experience it offers its visitors and the health of the organisation are all assessed.

Last September, we were invited to re-submit our application for accreditation and a number of our trustees and other volunteers, together with advice from our Accreditation Mentor **Kate Hebditch**, have been busy preparing documents for the submission deadline of April 1st.

Whilst this is the immediate goal, the efforts of many individuals and new volunteers continue to be required in order to maintain these standards and complete the actions detailed in our Forward Plan for 2025-2027.

Egyptology News

Bryan Pople and Kate White

Our Egyptology room, after its excellent refurbishment and conservation by **Joyce Navarro** and **Bethany Palumbo**, has a new addition in the form of a backdrop to the Egyptian Boat case and enhanced lighting. The image of a sailboat on a stretch of the Middle Nile comes from American orientalist artist **Miner Kilbourne Kellogg**, who toured Egypt and Palestine for 5 months in 1844, making many sketches and paintings. **Daniel Warburton**, assistant Egyptologist, is continuing his research into the provenance of artefacts in both Egyptology and Archaeology.

Daniel tracked down the origins of the funerary boat, which like the rest of our Egyptology collection, was gifted to the BNSS by the Salisbury Museum in the 1920s.

The boat was excavated from Tomb No 98 Qubbett el-Hawar, the Rock Tomb of Ishemai, who was Sealer to Pepi II (ca. 2284-2274 or 2216 or 2184 BCE), King of Lower Egypt, in a dig initiated by **Lord Grenfell** in 1886. The funerary boat is one of 3 in the UK and measures approximately 120 cm from bow to stern. It shows the deceased travelling by boat to the afterlife, accompanied by six attendants.

Daniel has also correctly identified the excavation date of the Bronze Age cinerary urn in archaeology, correcting the date from 1918 to 1921.

Mishka Brown, another of our young volunteers, became a very effective presenter in the room, learning rapidly with a great zest for the topic. She now reading BA Hons Ancient History at University of Southampton.

Egyptian Boat Case Backdrop (Tony Grant)

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Essay on rare diatoms

Kate White

The Quekett Journal of Microscopy, a publication of the Quekett Microscopical Club, has published an essay by **Debbie Oppenheim** and **Steve Limburn**, BNSS Chair of Microscopy, in its December 2024 Winter issue titled '*A study of *Odontotropis carinata* Grunow 1884 from the Island of Mors, Jutland, Denmark*'.

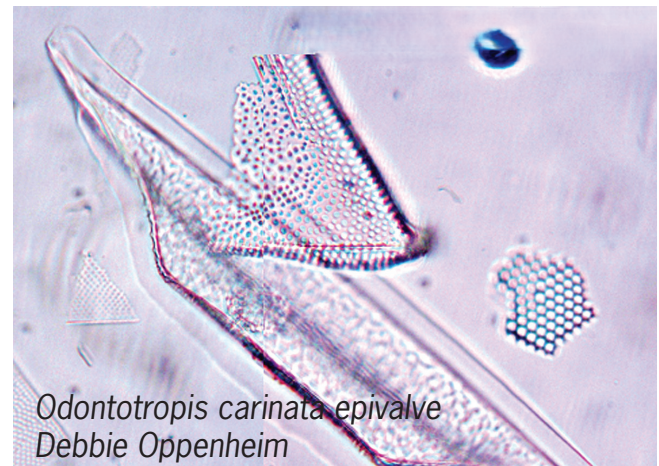
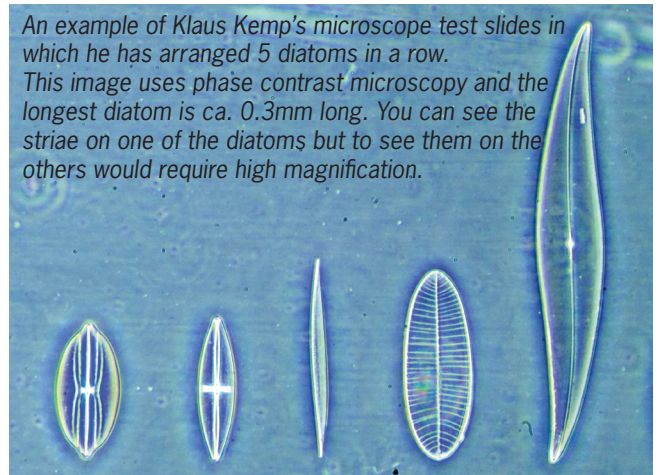
Diatoms are unicellular organisms that are found in oceans, waterways and soil, making up a significant part of the Earth's biomass. Measuring 20 to 200 micrometres in size, they produce 20 to 50 percent of our oxygen and absorb over 6 billion tonnes of silicon each year. Diatoms are used to monitor environmental conditions past and present, and are a main food source for marine organisms like fish and molluscs.

They form diatomaceous earth, a soft sedimentary rock that is used for many purposes, including water filtration and cat litter. Diatoms have a cell wall composed of silica which fit together like two halves of a Petri dish which are known as valves. They are a favourite of microscopists, who use their very fine gradations on the valves to test microscope lenses.

They are also beautiful, and often assembled into stunning artworks by people like the British biologist **Klaus Kemp**, one of the last practitioners of the Victorian art of diatom arrangement.

The essay examines a microscope slide from Steve's personal collection that was created by **Edmund Wheeler** in 1873, containing a fossil diatom with the rare resting spore *Odontotropis carinata* Grunow. The diatom's structure, geographical distribution and palaeoecology is discussed.

The BNSS is an affiliated member of the Quekett Microscopical Club. They hold joint meetings and microscopy demonstrations at local libraries. The next joint exhibition at the BNSS is on Saturday 31 May 2025 from 10am-4pm.



Oaks in Littledown Park

Malcolm Gould

Littledown Park is in many ways a typical urban park but it is also home to some fine old oak trees which are survivors from an earlier period. Starting from the Littledown Centre, which sits across Castle Lane from the Royal Bournemouth Hospital, and heading around the north side of the building you soon find the first tree at the edge of the cricket pitch to the left. Continuing along the path the second tree (pictured) is close to the path.

This tree is a hollow shell with most of one side of the trunk missing. However, it is still very much alive and, perhaps, fortunate to survive the sometimes-overzealous attention of parks maintenance. Hollowing is a perfectly natural part of a tree's life. The centre of a tree consists of dead wood and, not being required to support the tree, is available for recycling by fungi and other organisms.

Towards the north-west corner of the park, between the lake and the miniature railway, are three

more fine old oaks, two very close together. On the west side of the park, close to Chase Side it is possible to see another old tree by peering through the bushes into the grounds of JP Morgan. Within these grounds is Littledown House, which was built around 1780 for the Cooper Dean family, who owned much of the land in this area at the time.

All these trees are classed as veteran by the Woodland Trust. This means that they are mature trees showing the first signs of decay, for example, hollowing or dead branches in the canopy. These trees are of the order of 200-300 years old which means they probably grew

naturally rather than being planted as before the 1805 Christchurch Enclosure Act the area would have been largely heathland. Oaks are typically considered ancient when they reach 400 years and may well survive for many more centuries. More details of these trees and thousands of other ancient and veteran trees can be found on the Ancient Tree Inventory, a website of The Woodland Trust.



Archaeology News

Bryan Popple and Kate White

The archaeology room has recently received two very interesting donations and has also hosted several young volunteers who are now succeeding in academic careers.

Paul Hannah donated an Egyptian papyrus which he obtained in Cairo and had framed here in Bournemouth - a hand-painted reproduction of the image created by Hunefer, a scribe and steward to the 19th dynasty Pharaoh Seti I. The scene is of the Weighing of the Heart Ceremony from the *Book of the Dead*, in which the deceased's heart is balanced against the feather of Ma'at, the divine personification of truth, balance and cosmic order.

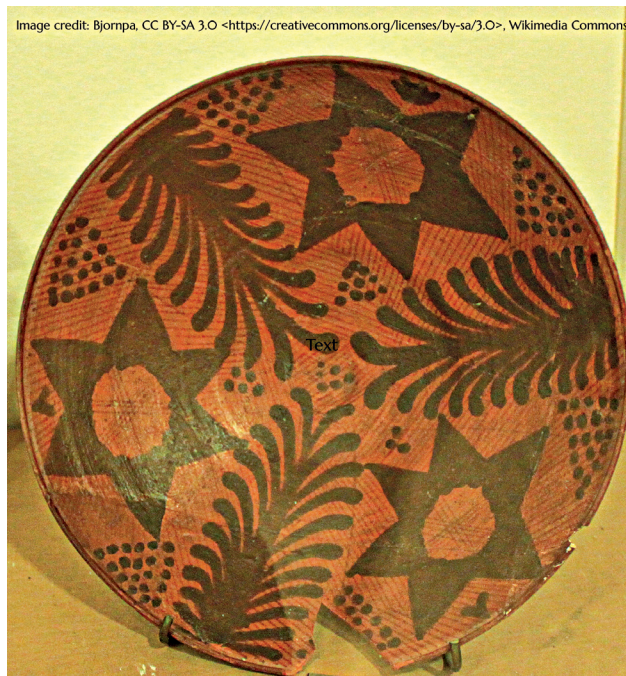
If the deceased passes the test, he/she is allowed into the afterlife. If not, the goddess Ammit, who represents divine justice and retribution and appears as a hybrid crocodile-lion-hippo creature, will eat his/her heart.

Krystyna Hannah donated sherds of Nabataean pottery dating to circa the 1st century CE. She was gifted the sherds in 1995 by one of the directors of the Museum at Petra in Jordan. The sherds are pieces of the very thin and light pottery made during that time, as fine as porcelain. Complete bowls made using this technique still exist, as can be seen in the image.

Gracie Mills assisted in the archaeology room and was especially effective talking with younger visitors. She also learned how to handle artefacts and sketch them. Gracie is now reading History at the University of Sheffield. **Berkan Oram** helped in both the Archaeology and Egyptology rooms and quickly learned about both collections. He's now reading Archaeology at UCL (University College London).

We currently have two volunteers from the Arts University Bournemouth. **Luna Ubide Holmes**, a third year BA (Hons) Modelmaking student, is exploring her interest in art, history and museum conservation, with an eye towards undertaking an MA in Art/Artefact Conservation.

Jessica Stainton, a third year BA (Hons) Design student, is gaining experience in the museum environment in advance of starting an MA in museum studies.

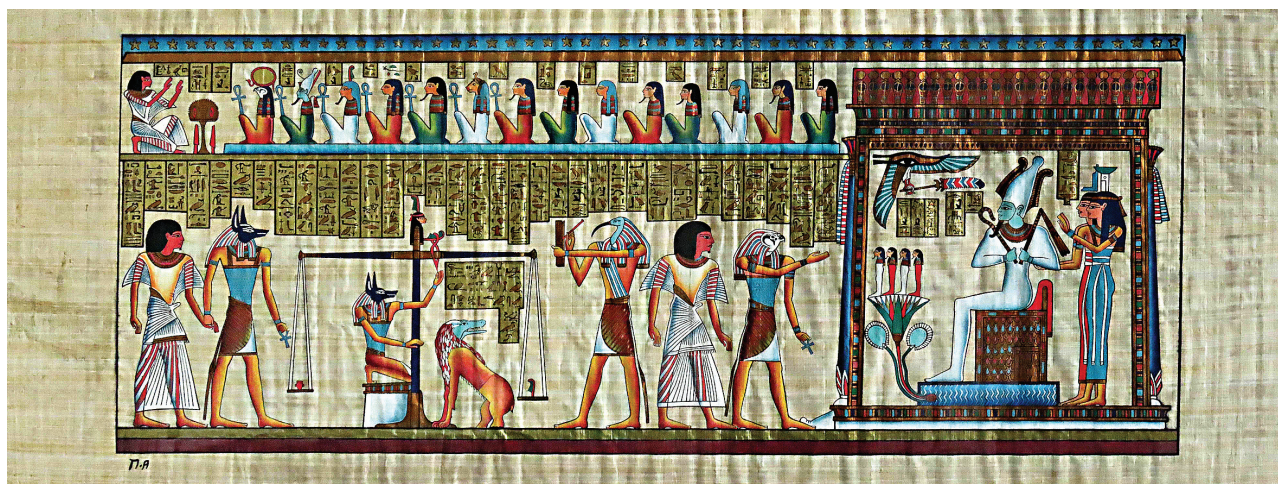


Above: Nabataean pottery bowl from Petra Archaeological Museum (Wiki Commons, credit on image)

Below: Petra pottery case (Bryan Popple)



We have also renewed links with the people at Hengistbury Head, following the lecture in September 2024 by **Hayden Scott-Pratt** and **Mark Holloway** on the Iron Age Roundhouse Project.



Papyrus (Tony Grant)

The Tale Of A Whale

Jacqueline Bainbridge

A reconstruction of Basilosaurus



One of the most important fossil exhibits is the Dent collection of Barton fossils, purchased in 1913. The cabinet holds vertebrae from an Archaeocete whale, often referred to as “Zygorhiza” wanklyni, but Basilosaurus is also used.

A group of Dutch researchers, led by **Dr Henk Jan van Vliet** first studied the whale in autumn 2023, and led to our former Curator, **Ray Chapman** doing further research and an article for the 2022-23 BNSS Proceedings.

In October 2024 Henk and three other researchers visited BNSS for two days to finish gluing fragments of the fossils; measuring the vertebrae and putting them in position.

A paper is in progress, and there are strict rules on not releasing information pre-publication, but Henk and the others are quite excited about their findings.

I was allowed to photograph the fossils for the BNSS Newsletter. Henk is submitting the material cleaned off the fossils for dinocyst (microscopic fossil algae) analysis to give an accurate date.

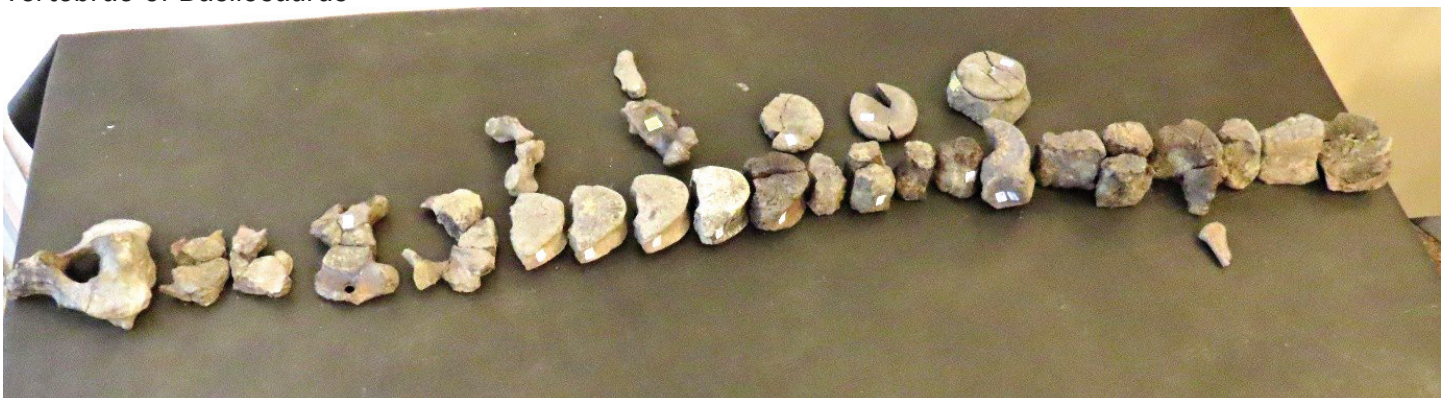
We eagerly await the paper due to be published sometime in 2025.

The group also gave the BNSS a generous donation.

Dr. Henk working on the fossil vertebrae



Vertebrae of Basilosaurus



Remarkable Rocks Some highlights of the BNSS geological collection

Jacqueline Bainbridge

Purbeck Marble is an attractive stone, much used for decorative purposes. Examples are to be seen in Wimborne Minster, Christchurch Priory and Salisbury Cathedral. Virtually all large churches and cathedrals in the south of England have some.

"Marble" is a misnomer – true marble is a metamorphic rock, but the term is often used for limestones with crystalline calcite that can take a polish. Technically it is a biomicrudite – large clasts in a fine-grained limestone mud matrix. The clasts are fossil *Viviparus* freshwater snail shells. The stone is often green in colour due to glauconite, but when the iron minerals hematite and limonite are present this gives a red hue.

Purbeck Marble is exposed throughout the Isle of Purbeck. It is part of the Durlston Formation of the Upper Jurassic / Lower Cretaceous dating from between 140-145 million years ago.

The beds of the marble are 1.5 m thick at most. The usable bed is 50cm. When in the same orientation as deposited it retains its compression strength and at Salisbury Cathedral is able to support the c.6,500-ton weight of the tower and spire. For long elements such as columns it is used "out of bed" i.e. at 90 degrees to the deposition.

Nowadays, columns can be formed quickly with modern lathes and polishing materials, but formerly it would have been a long slow process using sandstone as an abrasive then fine sand to finish. As Purbeck is not a true marble, it weathers badly when used outside as the iron in the stone oxidises and it starts to crumble. The late **Treleven Haysom**, an eighth-generation Purbeck quarryman, produced replacement capitals and bases for Salisbury. These will be polished then Renaissance Wax applied, heated and buffed to give the final finish.

If you would like to see Purbeck marble yourself, small flat pebbles can be seen on the beach at Swanage near the pier. It is not difficult to grind a flat face with "wet and dry" abrasive then polish it with T-Cut or similar polish sold for removing scratches from cars.

Some BNSS members visited the Knepp Estate in West Sussex this summer. I am notorious for picking up stones and found some yellowish limestone with snail fossils.

The Weald is the wrong place for Purbeck Marble, but research showed it was Sussex Marble or "Winklestone". This, as the name suggests, is composed of *Viviparus* gastropods but they are larger and younger, belonging to the Wealden Clay some 130 million years old, but obviously formed under similar conditions. The Sussex marble is no longer quarried so Purbeck marble is used for repairs.

Further reading:

Dorset Stone Jo Thomas (Dovecote Press)

The Cathedral Rocks Stephen Hannath

(Salisbury Cathedral shop)

Virtual Microscope (Open University website)



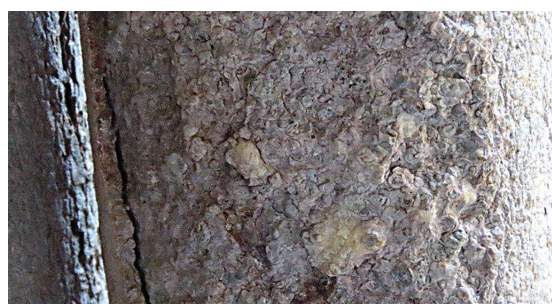
a



b



c



d



e



f

a: The BNSS piece of polished Purbeck Marble

b: Column base in Salisbury Cathedral showing colour variations

c: Rough Purbeck with loose *Viviparus* shells

d: Badly weathered column, Salisbury Cloisters

e: Home-polished pebble, Swanage

f: Sussex Marble, Knepp Estate, West Sussex

The Restoration of Bird Specimens

Jonathan McGowan, [BNSS Chair of Zoology & Assistant Curator]

Over the years, many of our cased birds, some preserved over a 100 years ago by well-known local taxidermists, have not been on display. Ornithology Chair, James Dovey and I set out to remedy this.

I first dismantled some poor exhibits, keeping the preserved birds for future reference, keeping the best of the cases to re-use. Most of the birds for restoration were waterfowl; some taken from the local area. These specimens were well mounted but the interiors needed repainting and vegetation added to brighten them up with natural looking surroundings.

I cleaned the individual birds and spruced them up to look more vibrant, painting beaks and feet where needed. We hope to have these refurbished birds exhibited in the near future.

The Passenger pigeon

Perhaps our most important bird exhibit is the single specimen of the now extinct passenger pigeon. This species was classed as the most numerous birds on earth until it was deemed a pest, and was persecuted to a point where it ceased to exist.

For many decades this poor lonely example of an enigmatic race was cramped up in a tiny bare box with nothing to explain the sad plight of the species. Poorly positioned, it looked drab and unloved.

Late in 2024, I decided to give the bird pride of place - elevating it to eye level with lots of information surrounding it. It would have a new larger box and painted background reflecting the bird's natural habitat and the tree species it depended on.

I first set about cleaning the bird, bearing in mind that it is over a hundred and twenty years old! The specimen itself is an immature male, and whilst missing neck feathers, it is actually in good condition.

As I handled the bird, I carefully spread its tail feathers and was surprised to see colour and eye-like blotches of black and white traversing a grey blue background.

There are photos in existence of wild birds flying, but no paintings of that beautiful, tail pattern! To see a flock of these birds winging their way, low over the prairies of central Eastern USA, would have been awe inspiring. Parrot like in flight the spread tail feathers would have caused confusion to raptor predators, and have been very striking. Our specimen, shows the lovely purple sheen on its neck, and the reddish brown of its belly.

Having originally painted an autumnal scene of red and white oaks, the species on which the birds depended, I needed to add more yellow and green to set the bird apart from its background. With the help of both Jo Crane



In Memoriam

Victoria Richards

Joined BNSS 2000

Passed away October 2024

An obituary will appear in the BNSS proceedings.

Newsletter edited by Sally Grant, Layout and design N. Swann.
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