# BOURNEMOUTH NATURAL SCIENCE SOCIETY & MUSEUM

*Share our love of science*

*Hamamelis vernalis– Witch Hazel 06 February 24*

**Spring 2024**
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**www.bnss.org.uk**
**Charity No. 1165951**

## Visitor Numbers
### Pam Field

We were open two days in Spring half-term and had 535 visitors compared to last year's 123 on only the Tuesday. Like last year we opened three days between Christmas and New Year thanks to finding sufficient volunteers who were available during that period. In 2022 we opened on 27th, 28th and 29th and had 160 visitors during that period.

We changed the dates for 2023 to 28th, 29th and 30th by which we gained a Saturday that was thought might be advantageous.

On Thursday 28th we had 173 visitors. We were delighted with this since that was more than all three days together in 2022 but I thought that was unlikely to be bettered over the next two days. What do I know? On 29th we had 275 visitors and on 30th 469!

This was far more than we expected and emergency calls were made to volunteers on 29th who had kindly agreed to be on standby to help out if necessary. It was necessary particularly on 30th.

Fortunately, we did cope but it was fairly manic from time to time both inside the museum and in the car park.

We did try to obtain information from the visitors particularly whether they had been before and if not how they had heard about us.

The very good news is that there were far more people who had never been before than there were previous visitors. The majority of visitors had found us via Facebook or Google.

It would appear that the additional advertising we were able to do on social media really worked. Looking forward however we need to make sure that we don't over advertise unless we are certain that we will be able to cope.

The further good news is that the donations received over the three days plus the sales income totalled over £1800.

# Portrait Artist of the Year
## Pam Field

You may be aware that since Covid we have been fortunate enough to have our facilities hired to host a number of filming sessions of interviews with our patron Dr Jane Goodall. The companies doing the filming have been many and varied; not only British but American and Dutch also.

The last of the filming sessions was in July last year and was done for Sky Arts who were making the latest series of Portrait Artist of the Year. The format of the programme is that nine amateur or professional artists take part in each programme painting a variety of sitters and eventually a winner emerges who is given a commission to paint a well-known person for an art gallery.

The series that was shown at the end of last year culminated in the winner having a commission to paint Dr Jane Goodall for the National Portrait Gallery. The winner had three sittings with Dr Jane the last of which was filmed in our museum room. I was in the building at the time, and after the sitting was over, I had a look at the draft painting that was done and thought it was okay but realised that there was a great deal of further work to be done as was shown in the final programme of the series.

I have to say that when the finished portrait was uncovered by Dr Jane in the final programme, I was astonished at how well the artist had "caught" her and indeed she was delighted with it.

*Jane Goodall during an earlier visit to BNSS, Credit: Pam Field*

As an additional note, BNSS got some advertising in the programme. I had hoped that we might be mentioned and indeed we were. When the museum was open between Christmas and New Year several people said that they visited because they had seen the programme.

# Are you aware of our Library?
## Brian Tiller (Honorary Librarian)

The library is still a vast store of information even in these days of computers and Google. We have over 1000 volumes which members can study and borrow. The books cover a wide range of subjects from Archaeology to Zoology, including Entomology, Geology and Botany. They are all classified by the Dewey decimal system and arranged on shelves for ease of access. If you have any problems finding the book you require, the library volunteers will be pleased to help.

*Honorary Librarian, Brian Tiller Credit Jill Abbot*

The BNSS library has two sections, the lending library where members can borrow books for three weeks and the reference section where books can be studied but not removed. The reference books tend to be the older, more fragile volumes of historical interest. We also have a large number of oversize volumes which are shelved separately. These are well worth looking at as they include much of interest.

We have a range of Proceedings from various societies including the Dorset Natural History and Archaeological Society, Hampshire Field Club, Society Jersiaise and a full set of our own proceedings from volume one to date. Magazines are available to read including Scientific American, National Geographic, New Scientist and various others. We have a bound set of Nature magazines from 1869 to 2012. These are in the old reference library as there is not room in the main library.

The library committee purchase new books occasionally each year, often on members' recommendation as our budget allows. We welcome members' suggestions of books to purchase, subject to discussion by the library committee. We receive many donations of books from members, most of which we bring into the library. We hope to see more members using this quiet facility in the future.

# Have you thugs in your garden?

## Mark Spencer

*Japanese Knotweed,*
*Credit: Ancatdubh43, Wiki Creative Commons*

In my opinion, the worst three garden thugs are the following:-

**1.** **Japanese Knotweed.** As this is a serious and notifiable weed, it is a well-known pest. It can penetrate and cause severe damage to asphalt, paving, walls and even houses. It is very deep rooted, fast growing and difficult to destroy. On the plus side, it is quite attractive and has edible shoots that taste like lemony rhubarb.

**2.** **Snowberry.** This is terrible thug that has very tough, woody roots, it quickly dominates large areas of land and is difficult to destroy. The only positives, if you're desperate to smother useless, rubble filled rubbish heaps are its attractive white or pink berries!

**3.** **Dwarf bamboos.** Beware, these look quite innocent in pots as a pretty, and often variegated clump of grass-like plants. However, once in the garden they will spread indefinitely, become tangled in parts and in other shrubs or plant roots and are extremely difficult to remove. Only positive is that they give you total ground cover and or dominate nearly all weeds, except perhaps the two above!

At the other extreme, three of the nicest thugs are as follows:-

**1.** Stinging nettles. Despite their stinging qualities, the positives of nettles far outweigh their negative ones. Nettles are healthy, edible plants being high in minerals and vitamins. They can be used to make beer or wine, string, rope and even clothes! Also, nettles are vital food plants for the caterpillars of butterflies, such as the Peacock, Red Admiral and Small Tortoiseshell as well as a number of moth species

*Dandelion,*
*Credit Greg. Hum, Wiki Creative Commons*

**2.** Dandelions. Seen as common and persistent "weeds", they are excellent, early and long-flowering nectar plants for many types of insect. Flowers can be used to make wine and their roots roasted as a substitute for coffee!

**3.** Ivy. These can have a detrimental effect on buildings, especially when near roof areas as they can lift tiles etc! When overgrown on young or weak trees, they can cause them to be blown over in high winds. However, if safely grown on strong large trees, dead trunks or concrete posts, they are very important for wildlife. They provide very late nectar sources as well as nesting and hibernation sites and food for birds.

*Snowberry,*
*Credit: H. Zell, Wiki Creative Commons*

*Ivy flowers,*
*Credit H. Zell,*
*Wiki Creative Commons*

**In conclusion,** many plants can be considered thugs in gardens, but many have positive qualities. If grown near borders with neighbours however, consider the inconvenience and even financial cost due to potential damage!

# Giant Pterosaurs
## Jacquelene Bainbridge

Professor Dave Martill has recently retired from Portsmouth University but is continuing his work of 15 years with pterosaurs in the Cretaceous Kem Kem beds of Morocco. He started with an introduction to pterosaurs. The first specimen was discovered in the late Jurassic Solnhofen Limestone of Bavaria Germany and described by Cosimo Alessandro Collini in 1784. Earlier a few fossils found in Oxfordshire were thought to be bird bones.

The first use of the word "Pterodactyl" was by the anatomist Cuvier about 1801 without him seeing the specimen. He recognised it as a reptile different to anything seen before, the name meaning "wing finger." Pointed teeth led to their "fearsome" reputation even though they were crow sized. Later animals were found in the UK, Germany, and the USA. Most of the Cretaceous pterosaurs can be considered gigantic. They first appeared in the Triassic but none of these have been found in the UK yet. There are examples from the Lower Jurassic – Mary Anning found the first remains in 1829 of Pterodactylus macronyx described by Buckland as having a 1.45m wingspan. It was mostly head and wings with small legs and would have been

James Scott Bowerbank (1797 -1877) was the first to claim giant pterosaurs and named Pterodactylus giganteus from the size of a few jaw tips and some teeth. At the time it was the largest known pterosaur with a possible 4m wingspan. The Cretaceous Greensand near the Cambridge fens contained fossiliferous phosphatic nodules with numerous pterosaur fragments. Some jaw pieces were 10–20 cm long, from which a 22-23 ft wingspan was calculated. Emphasis shifted to the USA with the "dinosaur rush" with railways giving access to the western US states. Pteranodon was found in Kansas 1870 and became the archetypal giant flying reptile. In 1901 Seeley published "Dragons of the Air". Pteranodon with its pointy head with prominent crest became iconic. In the 1970s Douglas Lawson was working on Cretaceous river system strata in Big Bend Texas and discovered Quetzalcoatlus. Size estimates varied but 9m is now regarded as the correct wingspan. It would just have been able to open its wings in our hall!

Africa is still almost unexplored palaeontologically. Morocco is better due to extensive phosphate mining. In 2003

*Simplified reconstruction of the pterosaur assemblage Kem Kem Group river system, Credit Artwork: Emily Pilavachi, Article available under Creative Commons,* ***https://link.springer.com/article/10.1007/s12542-022-00642-6***

a paper published in the Journal of the Geological Society of London described the first pterosaur from there, almost complete skeletons with long necks and 4-6m wingspans, bigger than Pteranodon and almost the size of Quetzalcoatlus. It is not known whether the pterosaurs survived to the end-Cretaceous extinction. It appears that diversity decreased, with just a few types remaining until becoming extinct at the K-T event. Pterosaurs occupied different ecological niches during their life cycle.

After the questions, Dave looked at two plaster casts that had been at the back of the Geology storage for some time. I had been reluctant to discard them as they had been given to Justin Delair by Martin Lockley, a reptile expert. Professor Martill confirmed that they were pterosaur footprint casts, and worth keeping.

# Unmanned Aerial Systems at the Ordnance Survey

## Margaret Ross

James Morrison, Head of Unmanned Aerial Systems (UAS) Pilot at the Ordnance Survey, discussed the arrival of the drone or Unmanned Aerial Vehicle (UAV) first for research purposes 8 years ago and now employed operationally.

This has enabled their mapmaking to be much more responsive to changes, more economical, and safer for the surveyors on the ground. In less than a decade, these UAVs have been reduced in size, originally almost that of a mini car, to ones that can easily be carried in a pocket.

They also now have longer flight times, rechargeable batteries and improved safety features. These UAVs are used in conjunction with planes and the traditional surveyors on the ground, but particularly in dangerous situations, such as on cliff edges or following accidents, allowing updated maps to be produced in a matter of hours.

An example of this was following a local cliff fall, when updated maps were available within three hours, resulting from a 30-minute UAS flight then the computer processing to produce up-to-date maps for the emergency work.

The regulations governing the flight of the UAVs and the training of over 28 pilots in their use for surveying were also discussed.

*Three types of drone used on their launch pad, Credit James Morrison*

*Surveying aircraft and drone, Credit: James Morrison*

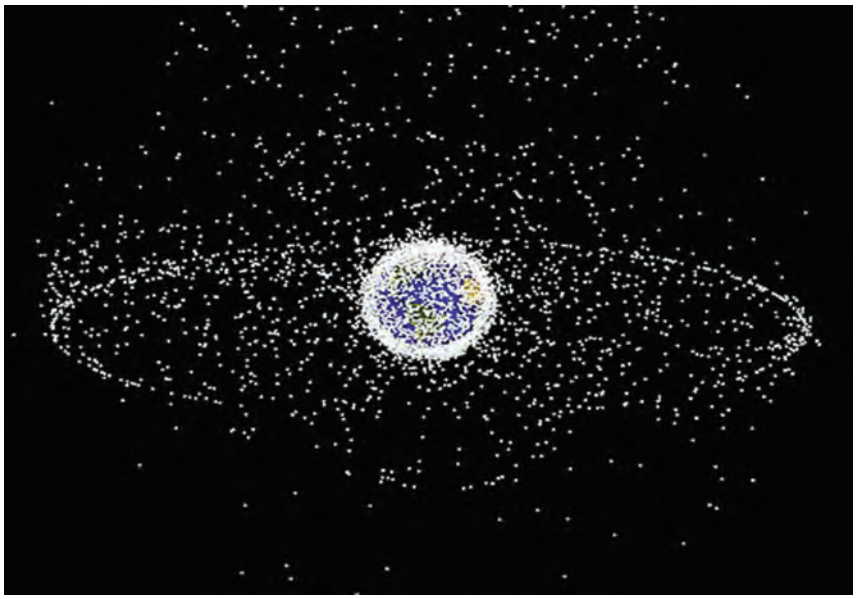
# Left in Space

## James Fradgley

We welcomed back Dr Lilian Hobbs, who gave this talk. Firstly, she covered debris on the Moon, where there are now 183 tonnes of stuff left behind or landed there, including from the Apollo missions where everything not needed for the return to Earth was thrown out, including human excrement. Gene Shoemaker's ashes have been left there as well.

In Earth orbit there are more than 23,000 golf ball or larger fragments, an estimated 670,000 larger than 1 cm, including exotics such as Ed White's glove (which burnt up on re-entry), and bits of 32 nuclear reactors; also an estimated 128 million in the range 1 mm to 1 cm. In 2007 a Chinese and a Russian satellite collided, increasing the number of objects by 70%, and in 2009 an Iridium satellite collided with a dead Russian satellite, creating about 1,500 bits of debris.

Some 26,000 objects are being tracked and near misses are common. There are an estimated 6,000 tons of objects, and more than 50% of Low Earth Orbit (LEO) near misses involve Starlink satellites. Fylingdales in North Yorkshire tracks anything in LEO larger than a coke can. We are starting to look at how we might clear all this up, and proposals include nets, harpoons, and lasers. It has been proposed there should be a $235,000 fee for orbital use per satellite.



*A computer-generated image representing space debris as could be seen from high Earth orbit, Credit: NASA*

# What I did on my holidays – the Great Orme Copper Mine

Jacquelene Bainbridge

Llandudno is a Victorian seaside resort in North Wales on a wide bay flanked by two Carboniferous limestone headlands, the Great and Little Ormes.

The Great Orme is by far the larger at 207m (679ft) and a popular tourist destination with a picturesque tramway to the summit. When I went with the Manchester Geological Association in the early 1970s, there was an old quarry with the spoil heaps of a copper mine worked out by the 1850s, but nice little specimens of copper minerals could be found, mainly the green copper carbonate malachite in dolomite rock.

*Copper containing Green malachite in dolomitised limestone outside the mine,*
*Credit: Jacque Bainbridge*

In 1987 when the site was considered for car parking, one of the diggers broke through to old mine workings. Archaeologists excavated many thousands of tons of waste rock to uncover over five miles of ancient copper mining tunnels, estimated to be about half of the mine's extent.

*Inside the mine with narrow passages following the ore,*
*Credit: Jacque Bainbridge*


*Great Orme, near Llandudno N Wales*
*Credit: Google Earth*

These were later dated to the Bronze Age c.4000 years ago with finds of bone tools and stones used for crushing the ore. By 1600 BCE the mine was so productive that all other British copper mines closed as they could not compete.

About 2000 tons of copper were produced. The site has now been cleared and since 1991 has been open to the public who (wearing hard hats) can walk through 200m of the narrow tunnels which were dug by hand following the ore seams.

Some of the tunnels are so narrow that the workers must have been small children. Analysis of the ore has shown that, at its peak, this mine was the source of most of the copper which was used throughout Europe, together with Cornish tin in the production of bronze axes, tools, jewellery, and other items.

The entrance seems straight out of the "Flintstones" and the sheer size of some of the workings is impressive. Outside are shelters with displays of copper smelting and casting.

An informative film is shown in the visitor centre with displays of mining tools and implements manufactured from the ore and finds from local excavations. A very interesting and enjoyable experience which showed how sophisticated early people were.

# It's all about Us.

## James Dovey

**Book review of '*Ten Birds That Changed the World*' by Stephen Moss**

A catchy title, but what's this book actually about? This extensively researched book delivers a wealth of fascinating historical facts and shows a deep love for birds.

The Raven, Pigeon and Bald Eagle chapters show how birds have been woven into man's myths, legends and storytelling and thereby shaped our society. On a material level we see how we've cherished, used and abused them. With the Dodo, Moss explores the subject of extinction and how once it was heresy to even entertain its possibility.

The Emperor Penguin, through its rapidly diminishing breeding grounds, is an allegory for the wider climate crisis we face and the Turkey is a good example of how mankind consumes in vast quantities. In Darwin's Finches taxonomy and evolution are explored.

The next three birds hit the reader hardest. Through the Guanay Cormorant and its by-product ('brown gold' / guano), William Gibbs, during the 1850s, became one of the wealthiest people in the UK. However, this natural, finite resource, producing massive increases in crop yields, sparked the search for man-made superphosphates and the development of farming's present model – high input, high output… ocean's of pesticides, herbicides and fertilisers. It's allowed Earth's population to explode but the soil, long-term, can't cope.

By the early 1900s, the Snowy Egret's feather plumes were worth, by weight, more than gold. How? Why? Marie Antoinette had kick started the desire for feathers as adornments for ladies and a worldwide industry was born killing many other waterbirds in their millions but starting conservation movements worldwide.

In 1958, the Tree Sparrow was demonised by Mao Zedong as one of the 'Four Pests' and 'total war' was waged killing up to one billion. It was calculated one sparrow would eat 4.5kg of grain per year so every million sparrows killed could feed 60,000 people. Whilst the calculation was probably accurate, it ignored the fact that during the breeding season these birds fed their chicks on countless millions of insects including vast numbers of locusts. The result was the rice harvest totally failed and led to the Great Chinese Famine (1959-61) in which 15 - 55 million people died – the greatest man-made disaster in human history.

This book is about ten intriguing birds and their relationships with man but, for every fact about the birds, far more is revealed about human nature. Homo sapiens emerged about 300,000 years ago, the new kid on the block - the last of the hominins.

We are remarkable, very intelligent, no doubt but over the last few hundred years we've developed into the most destructive, entitled and probably ephemeral of species and this thought-provoking book tells you a tale or two as to how it all happened.

*Tree Sparrow from Birds of Great Britain and Ireland A.G. Butler 1907*

# BNSS COACH TRIP - KEW THURS 6TH JUNE

This year we shall be travelling to **THE ROYAL BOTANIC GARDENS, KEW a UNESCO World Heritage Site**. A day trip to these world famous gardens by rail etc. has become rather expensive BUT by arranging our own transport and group entrance fee it can be offered at a reasonable cost. To allow for comfort, spaces are limited to 40 on a 49 seat coach.

The total cost is **£48**, which includes coach transport from **BNSS,** entrance fees AND Cream Tea token. You can make your own arrangements for lunch (picnic or use the venue cafes).

**Departure time is 8.30 SHARP! and return time to BNSS is approximately 6.45 pm.**

**Please sign the foyer list ONLY if you are certain of attending.**
**Also see the note regarding mobility requirements.**

**Payment is due by Tuesday May 7th at the latest.**

Payment on-line: **Bournemouth Natural Science Society**
**Reference: COACH-24**
**Sort Code: 09-01-29**
**Account No: 15727330**

**OR**

Make cheques payable to: **Bournemouth Natural Science Society**

Send to: **39 Christchurch Road**
**Bournemouth BH1 3NS**

(please write "**COACH-24**" on reverse, along with names of all passengers)

**OR**

**By Credit Card in the BNSS Foyer (see greeting volunteer)**

If you pay on-line from your bank or Credit Card, **please confirm payment by email** to the Treasurer: *gerry.duggan@gmail.com* with subject COACH-24.

Please include names of all coach passengers in your party in your email.

Also, if possible **please sign-up with names of passengers on the form in BNSS Foyer** if paying on-line, or alternatively request the Treasurer to sign up on your behalf in your confirmation of payment email.

**Please Note**: Due to the cost of coach hire there is no refund for no-show – the coach leaves at 8.30am. There will be approx 5 ½ hours at Kew with a comfort stop on the journeys.
Kew is a very large site which requires good mobility and other passengers cannot be expected to provide assistance.

# Jo Crane - Volunteer of the Year 2023


Each year the trustees have the difficult decision to choose someone to receive the 'Volunteer of the Year' award. Difficult because we have many volunteers who make significant contributions to the success of the Society.

This year the trustees chose someone who has made contributions in a number of areas over several years and wish to recognise that. The success of our Audio-Visual system is down to Jo Crane's many hours work to ensure the system functioned after installation.

He has also devised and organised several annual coach trips. More recently, he has installed new lighting to the Egyptology Room cases to great effect. It is a well-deserved award.

*Picture credit: Jim Gardner*

# Society Challenges

## Grenham Ireland

The Society achieves a lot each year most of which can be read about in the BNSS Proceedings which you will shortly receive. However, its activities are being run by a decreasing pool of active members supported by volunteers. We have a number of vacant posts for which no-one has stepped forward eg. Chair of Assembly and Chair of Astronomy and there are other roles which long standing officers wish to vacate or share duties with others. If you can offer any time, please talk to a trustee of other officer to see how you could help.

# Ray Chapman

We are sad to report the recent death of our Curator, Ray Chapman. Ray has made an immense contribution to the BNSS over many years leading us in many ways and will be a great loss to the Society and very difficult to replace. If any member would like to share their memories of Ray, please send them to ***contact@bnss.org.uk*** for the attention of Hilary Barton.

Alternatively, you can leave a message of condolence for Ray's family at:
***https://www.funeraldirector.co.uk/funeral/raymond-chapman/***

# Dates for your Diary

Spring Open Weekend **6th & 7th April 10am- 4pm**
bring your family or friends or volunteer to help on the day

**Saturday 27th April**
Photo Event, talks and results of 2023 photo competition
**Thursday 6th June**
BNSS Coach Trip to Kew Gardens. Details available in house or via the website, or see page 8.
**Saturday 15th June**
Joint Microscopy exhibition with Quekett Club
**Saturday 22nd June**
Garden Party for members and guests. Plant swaps. Tea and cakes.

Newsletter edited by G. Ireland & J. Abbot, Layout and design N. Swann.
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Email: ***contact@bnss.org.uk*** Tel: 01202 553525

# BNSS Photo Challenge

## Tony Grant

The following six photographs are from scenes taken between 100 to 130 years ago of the BCP and surrounding area.

We would like members and volunteers to go out and photograph these scenes as they are today. If you take part and upload your photos to the link below, you are giving BNSS the right to use your images for exhibiting, research, and promotion.

*0001 is Christchurch somewhere.*

*2731 is Bournemouth Square.*

*2751 is also in the vicinity of Bournemouth Square*

*2956 is Church House Ashley Cross Parkstone. (now demolished)*

*3029 is the Cat & Fiddle, Hinton Admiral.*


*3056 is the Haven Inn across the race at Mudeford. (this is a really busy road)*

Please send your photos in ***jpg*** format to:

***https://drive.google.com/drive/folders/1zYPHKf_5bgjlT2fa6dg-2jwbhlSpbAOz?usp=sharing***

Tap the + button (bottom right) to create a new folder with your name (forename & surname) to upload your photo(s) by dragging and dropping. You can upload photos to this website until the **15th of April 2024**