BOURNEMOUTH NATURAL SCIENCE SOCIETY & MUSEUM

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Newsletter
Summer 2022

In this Issue

Group of Great Bustards on Salisbury Plain near Enford.
Credit: Sally Grant

A Beautiful Day on the Plain (courtesy of the Great Bustard Group)

James Dovey

Two parties from BNSS went up to see the Great Bustards on the 25th of March & 8th of April. The starting point was Enford village hall in the northeast of Salisbury Plain. There was as a blue-sky day for the 14 on the 25th. We first stopped at the 1st floor container hide overlooking croplands in open country. This is the favoured habitat for this large bird. They eat all kinds of cereal & vegetable matter, and occasionally voles & mice. No nest to speak of, just a trampled spot hidden by the growing cereals. 2 to 3 olive brown, streaked and blotchy, well camouflaged eggs. No Bustards seen here today. The Corn Buntings were loitering on the fence wires & sheds.

Our next stop allowed us to watch these very sexually dimorphic birds on the brow of a distant hill. Only seven to start with. More walked into view. Then a flock flew in. There were 40+. A deliberate, measured gait. Very regal. The courting cock birds turn their plumage inside out. A mass of white. Impressive. In the sky the falling lark gave us a backdrop of incessant rolling notes. Between us and the Bustards the slow, low, effortless gliding of a female Hen Harrier. Purposefully meandering in hunting mode. She caught the eye and wouldn't let go. Mesmerising. She's another ground nester, laying white eggs – usually unmarked.

A quick stop at their museum. A great stuffed cock bird is in residence. We take note. Back to the village hall and an open playing field before us. A packed lunch in the sun. Many Red Kites were seen that day and as we left for home one exited a nearby tree being attacked by a crow. A large, angular, zigzagging presence just above. A striking shape. It had been a sun-drenched, idyllic day, out and about with the Bustards.

Blackadder!
Jonathan McGowan

The Northern Viper, or Adder (Vipera bearus), is a well known species, one of many European vipers, and is the most northerly distributed species occurring up into the Arctic Circle. The further north one goes, the more likely reptiles are to be darker. Black individuals warm up faster than light ones, so it is an aid in cooler regions. This dark colour does not become dominant, because a black snake is more obvious than cryptically marked lighter individuals, making predation more likely, so there is a balance to be met.

Around Purbeck and the harbour totally black specimens are common in some areas. Some still retain red eyes and white lips whilst others lack any red or white pigment and are totally black. These individuals are often larger than normal especially the females. Others are very dark with the markings just visible. Some have a blue underside. We have other individuals here around Poole harbour living in marshland around the reed beds, being slightly smaller, dark black or blue black or pinkish silver, with or without visible zig zag markings and with a bright yellow tail. They are silky to look at and to the touch.

The adder gives birth to live young rather than laying eggs as most reptiles do - indeed most vipers give live birth, wherever they live on earth, as a way of ensuring offspring are born. Egg laying is very risky as eggs may not warm up enough for embryonic development, and predation of eggs would be detrimental to the species' existence.

Many people never see adders, they are quick to flee at the first sight of people so careful stalking around hotspot areas during the cooler mornings is best to observe them, or sitting and waiting at basking sites is more productive. They are venomous of course so much care must be taken. Adders should never be touched unless by an experienced handler, for conservation or education reasons. Disturbing them or catching them alters their behaviour and could be detrimental to their health. All venomous snakes would prefer not to use up their venom on a person or dog and use it to disable their prey, but many species will strike if they feel threatened .

Unfortunately many adders die during the many heath fires that are deliberately started. Our heathlands are under more pressure than ever before and we must do all we can to protect them, even expand them. Blackadder is a genuine English surname! And the TV comedy series, Blackadder, used a real black adder at the start.

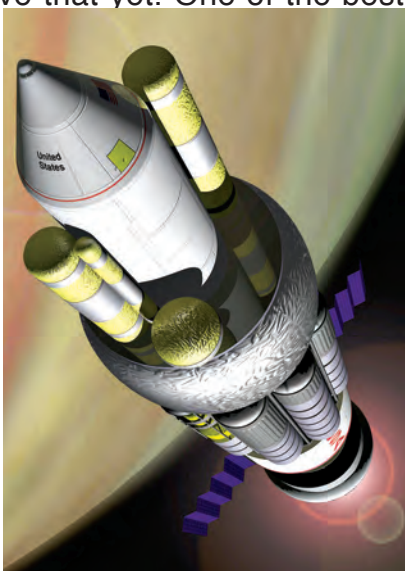
Two colour forms of adders:
Left: *A brightly marked female adder, a healthy individual from Dunyeats heath, Broadstone.*

Above right: *Melanistic adders, such as this one, may have blue tints in them. This male is from Hartland moor, Wareham. Credit: Jonathan McGowan*

Crazy Interstellar Rockets
James Fradgley

Dr Julian Onions gave us this fascinating talk. First, he defined specific impulse and how various devices from gunpowder to ion rockets stack up. The idea of atomic rockets arose in the 1950s and 60s, e.g. with the Nerva engine. They're far better than chemical rockets but do have a potential radioactive pollution problem. NASA decided to stick with chemical rockets.

One of the ideas that could be very worthwhile is the Project Orion rocket, but it involves nuclear explosions in the engine. The idea of nuclear bombs behind the craft were developed by Freeman Dyson in particular, but would be horrendously radioactive. Project Daedalus by the British Interplanetary Society involved nuclear fusion (DT fusion), but we don't have that yet. One of the best ideas is the Bussard Ramjet, which scoops up hydrogen fuel as it goes along. There are lots of other fusion possibilities.

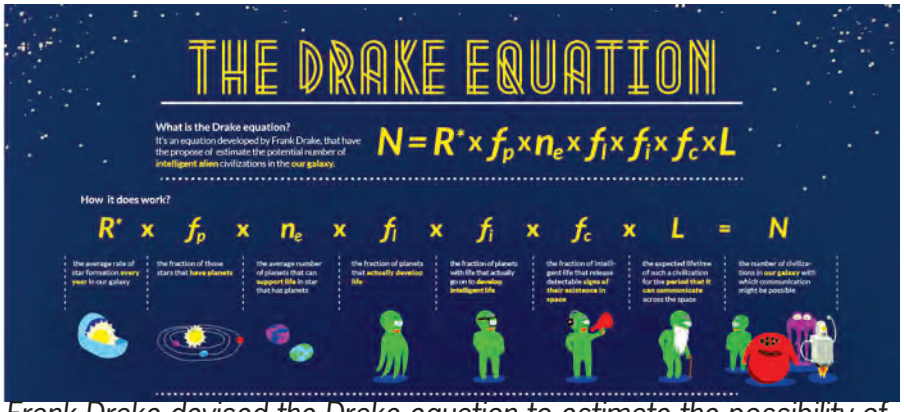


Project Starshot involves a microchip and a large solar sail propelled by lasers: it needs a huge amount of energy to power the lasers if it is to achieve 10% of the speed of light. Photon drives have also been mooted, again nuclear powered, but they would have quite a low acceleration.

Lastly, we looked at warp drives, called Alcubierre drives which need negative mass or energy. They may be impossible but would enable faster than light travel. The best bet is probably Project Orion type rockets operating in deep space to make interstellar travel possible. It certainly needs to be a nuclear powered rocket of some sort.

Artist's conception of the NASA reference design for the Project Orion starship powered by nuclear propulsion.
https://commons.wikimedia.org/w/index.php?curid=224077

Life in the Universe
James Fradgley



Frank Drake devised the Drake equation to estimate the possibility of detecting life outside Earth. Credit: Luciano Ingenito, CC by-nc-nd 4.0

Firstly, we looked at why are we so interested in this subject, our cultural background to this question and The Drake Equation. Then we covered the development of the universe & our galaxy, including how we get to have the chemical materials and environment available for life to exist, including appropriately placed stars.

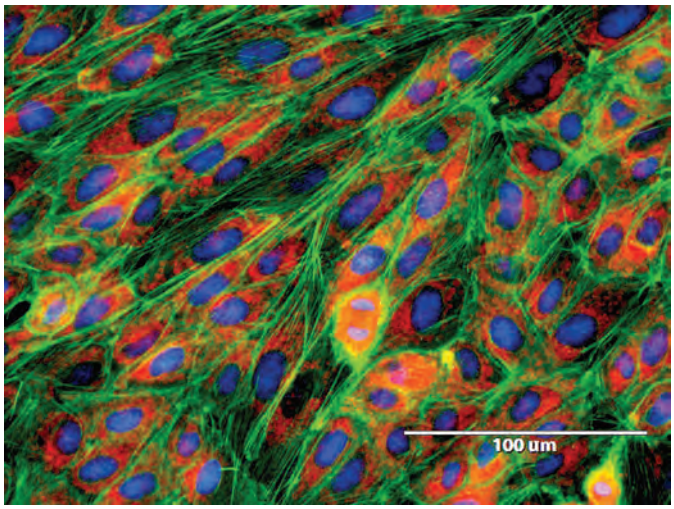
Local astrophysical requirements included the need for stability, what we've found with exoplanets, what sorts of stars are appropriate, the effect of the Moon, bombardments, and impacts. Early biological needs looked at how quickly life arose on Earth, how complex life may have developed, including biological and environmental constraints on its development. Planetary stability and environment went through the Moon and tides, plate tectonics, temperature stability, especially snowball Earth, major volcanism, and impact events. Other biological phenomena looked at why the 'Cambrian Explosion' was when it was, mass extinctions and climate needs.

Finally, the discussion ended with a view on the likelihood of complex life elsewhere, taking us back to the Drake Equation and review each of the terms. The conclusion was that simple life is possibly widespread, whereas intelligent or complex life is unlikely to exist elsewhere in the Milky Way.

Cultured Cells in Biomedical Research -
Grenham Ireland

Dr Edward Burnett from the UK Health Protection Agency started by explaining the difference between two types of cell cultures. Primary cell cultures are freshly isolated from a tissue, whereas cell lines can be grown continuously - indefinitely if they have become immortal - or eventually stop growing after a certain number of cell doublings. He explained the many applications for using cultured cells instead of animals, the different cell types that can be grown, and the history and important pioneers of cell culture. Cells can be kept frozen in liquid nitrogen indefinitely or thawed and used in experiments.

Such cell banks, including the European Collection of Authenticated Cell Cultures, are important for research worldwide. One cell line HeLa was crucial for the early production of Polio vaccine. But the example of HeLa also illustrated the importance of quality control in cell banks to ensure cells are not contaminated with bacteria, mycoplasma (the smallest free living self-replicating organism) or even other cell types.



He explained how some specific cell lines used in published research have been found not to be what was originally thought and instead are now HeLa cells! Anyone wishing to follow the HeLa story could read Rebecca Skloot's very readable book "The Immortal Life of Henrietta Lacks".

Kidney cell line whose different cell components have been stained: actin cytoskeleton (green), mitochondria (red) & DNA (blue). Credit: E. Burnett

Made in Poole
Jacqueline Bainbridge

Jo Amey is known as "The Tile Lady" for good reason. She studied ceramics at Bournemouth and Poole College of Art and for her final year thesis researched architectural ceramics on local buildings. Many of these tiles were made by Carter and Co. of Poole.

Jo brought many examples of her extensive collection of tiles for us to see and was very interested to see the recently uncovered fireplace in the Museum Room at BNSS. She has photos and intends to research the unusual colour combination.

A group of tiles from the uncovered fireplace in the Museum Room at BNSS. Credit: Jacqueline Bainbridge

Carter and Co. began in 1873 when Jesse Carter bought James Walker's bankrupt brick and tile company and added a range of decorated wall tiles. After a slow start business gradually improved and by the 1880s Carters were competing at a national level, which coincided with a local building boom. In 1895 they acquired the Architectural Pottery at Hamworthy and also their contacts, including William de Morgan.

Jo has researched the whereabouts of numerous remaining tiles, often on and in local pubs, with fine examples still to be seen in the "Ladies'" of the Russell-Cotes Museum and Art gallery. It was fascinating to see the various uses of Carter's products and try to identify where they were from.

Unfortunately, many examples, especially on pubs, have been removed or lost. Of those which survive in situ, most are painted or panelled over. Luckily, due to the efforts of Jo and her colleagues at the 'Tiles and Architectural Ceramics Society', some of these are now protected. The ideal situation would be to incorporate any tiles in a new building, but removal with care is a good alternative.

Stour Valley Park
Mary Thornton

Landstory has been commissioned by the Bournemouth Parks Foundation to support the delivery of a Stour Valley Park. The vision is to create a regional park that utilises around 25km of the lower river Stour from the National Trust property at Kingston Lacy through farmland, built up urban areas and saltmarshes right down to the coast at Mudeford. The initial project aims are to improve access for recreation, to enhance the river for wildlife and to tie this into a health and wellbeing agenda.

Simon Brown founder and CEO of Landstory described how they have engaged with 16 project partners, from large organisations such as the National Trust and Natural England to local farmers and citizens. They are working on a community engagement strategy to ensure that this project is driven and shaped by the people who live and work in the Stour Valley as well as proposing how it might be achieved and administered. For more information see *https://www.stourvalleypark.uk/*

On the positive side is the increasing desire of both individuals and councils to see the health and wellbeing of people improved through greater access to nature while enabling wildlife to co-exist and flourish. What must be overcome is a lack of committed interest, lack of political will to see the Park into existence and little money to upgrade or install facilities.

White Mill Bridge over the Stour near Sturminster Newton
https://www.stourvalleypark.uk

Wild Woodbury
Mary Thornton

This exciting new project was enabled by a novel financial backing from a committed environmental campaigner. It is the first community rewilding project in Dorset. 170 hectares of arable farmland at Bere Regis were acquired in 2021 to specifically cease agricultural cultivation and allow the land to naturally regenerate. Dorset Wildlife Trust have appointed **Rob Farrington** as their project manager to engage with the local community and develop a large scale rewilding to enhance the natural biodiversity of the farmland.and he gave the talk.

Mixed grazing animals, including cattle, ponies and pigs, will be introduced to the area to kick-start natural processes and encourage a mosaic of habitats. Some land drains may be broken up and ditches filled in to retain water on site, restore natural hydrology and encourage wetlands to establish. Some supplementary tree planting may be needed to encourage a greater diversity of species on site.

A community orchard is also proposed for the project, as well as space to grow food sustainably, But these plans may change through community consultation. The project team are hoping to engage with the community for input into its site plans and vision, train local volunteers to help on site, and provide high quality space for communities to access nature.

Dorset Wildlife Trust - view of Court Farm.
https://www.dorsetwildlifetrust.org.uk/news/wild-woodbury-announced-new-name-dorset-rewilding-project

Open Garden and Photography Competition
Eleni Dimitriou and Jill Abbot

On 19th March we welcomed members and friends into the garden. The weather was sunny if a little breezy. The camellias were looking splendid, while the tree trail proved to be of interest to many. Covid numbers were still high, so it was good for people to come and go in the lecture hall, maintaining safe distancing. Refreshments were ably provided by Jacque and her helpers, with excellent cakes – irresistible.

Eleni had mounted an exhibition of the winning photographs in the 2021 Photographic Competition and had also created a stunning slide show of all the entries.

At 3pm we gathered for the presentation of the 2021 Photography Competition prizes, with Eleni announcing the winning photos. We received 159 entries from 30 adults and 5 Young Explorers. Following the presentations, the prizewinners assembled in the garden for a group photo.
(Junior photographers had received their awards at the February Young Explorers meeting.)

In 2021 we re-established our BNSS Photographic Competitions (last held in 2016) and for the first time included our Young Explorers. We had three categories for 2021 - Landscapes, Plants and Fungi and Wildlife. Prizes were awarded for 1st, 2nd, 3rd places and Highly Commended within each category.

Our Judges were **Stephen Clarke**, Photographer and lecturer at Chester University, and **Pete Mc Kinley**, Photographer and Operations manager at Arts University Bournemouth. They made their selections based on the following criteria:

- Inspiration to Others
- Technical Execution (focus, difficulty) and,
- Artistic Merit (colour, light, composition).

The mission of the Photography Competition is:

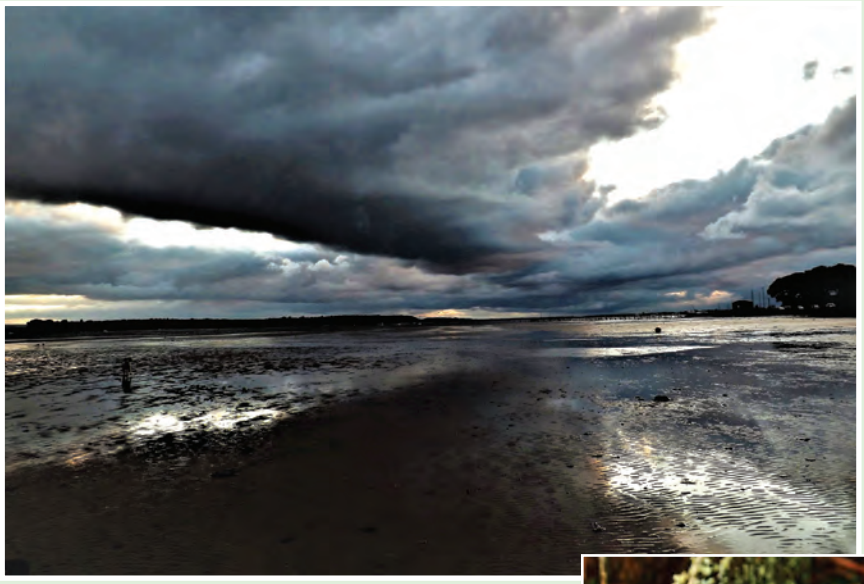
- *To shine a spotlight on the beauty and wonders of the natural world around us*
- *To raise the awareness of local nature and wildlife in a wider audience*
- *To establish an ecological culture through the art of photography*
- *To encourage our local community to value the environment in which we live*
- *To capture scientific phenomena on camera*

A photobook with all the competition entries is available for viewing at the museum. If you wish to enquire about ordering a photobook of the 2022 competition, please inform the photography section via email: *photo@bnss.org.uk*

Details of the 2022 Photographic Competition will be announced later in the summer.
Categories will remain the same as 2021. All entries must be from Dorset and the BH postcode area and will be subject to Terms & Conditions. You must be a Young Explorer to enter the junior competition. The deadline is November 30th 2022.

The Adult Winners of the BNSS Photographic Competition 2021

The Young Explorer Winners of the BNSS Photographic Competition with Steve Limburn



Landscapes:

- **1st place, Nigel Mackenzie,**
- 2nd place, Becky Greenwood,
- 3rd place, Zebedee Parker,
- HC, Jana Faris.

Plants and Fungi:

- **1st place, Keith Beswick,**
- 2nd place, Richard J Commins,
- 3rd place, Deborah Karen McLeod
- KC, Sally Grant.

Wildlife:

- **1st place, Alister Gooding,**
- 2nd place, Richard J Commins,
- 3rd place, Alister Gooding,
- HC, Ann Pardy.

Clepsydra, Calendars and Culture in Roman Britain
Bryan Popple

Alex Meyer, Associate Professor in the Classics Dept. of the University Western Ontario in Canada, and a friend, gave the Zoom talk. Alex is a Latin calligraphist who started working at Vindolanda in 2002. His interests are in space and time in classical antiquity. This has led him to research the ways people perceived time, and to a focus on Roman clocks and calendars.

The Vindolanda calendrical clepsydra. Credit: B. Popple

The talk focused on an artefact discovered at Vindolanda in 2008 by Bryan and his digging partner Kate Sheehan Finn. Vindolanda stands a mile south of Hadrian's Wall, the northern frontier of the Roman Empire from 85 AD into the 5th century

The Vindolanda fragment, or as he now calls it, the Vindolanda calendrical clepsydra, is a small piece of copper alloy measuring 83mm x 22mm, the size of an index finger. It is part of a larger form called an annulus, a ring-shaped object, which would have measured 35cm in diameter. There are writing on the fragment, including 'September', 'K' (for Kalends, the first of the month), 'N' (for nones, the 9th of the month), and 'ID' (for the Ides, which in September is the 13th).

There is also 'AE', indicating the equinox, between the 22nd and 25th of September. There are holes along the centre, each hole representing two days.Initially, Alex thought the fragment was part of a calendar. However, in 2017, another calendar fragment was found at Hambledon in Hampshire. This said 'August' on the top, and included the same markings as the Vindolanda fragment, excluding the equinox. The holes on it were for every day. This suggested perhaps military or agricultural use.

Deeper research indicated that both fragments might be part of something more complicated: a water clock or clepsydra ('water thief'). In a water clock, the annulus sits on a bowl of water; time is marked as the water drains out through a hole at the bottom. These were in use throughout the Roman world, particularly in bathhouses. Alex found mention of a sulphur spring near a tower with a basin and altar not far from Vindolanda which may have been used for healing, similar to a building near Hambledon. So, a fragment that looked like a calendar is actually a water clock and has brought to light more aspects of Roman Britain. And, serendipitously, the lecture introduced Alex to Tony King, Professor Emeritus of archaeology at University of Winchester, whose work in the Hambledon area has revealed similar artefacts.

Calshot: a place in time
Robin Hewitt

This talk was given by **Colin van Geffen** who is a local historian and has been a Custodian of Calshot Castle. The castle was built by Henry VIII as an artillery fort to protect the sea passage to Southampton. It served as a base to combat smugglers in the 19th century.

Calshot. Credit: Colin van Geffen

In 1913, the spit became a seaplane station and it was used as a base for anti-submarine patrols during WWI. Winston Churchill made his first flight in a seaplane in 1913 at Calshot, and it was used as a base for the famous Schneider Trophy races in 1929 and 1931. T. E. Shaw (better known as T. E. Lawrence) was involved in the organisation of the 1929 team.

In WWII, Calshot was used for flying boat maintenance, marine craft accommodation and training. Seaplane tenders from the base rescued around 500 soldiers from Dunkirk in 1940. The airbase finally closed in 1961.

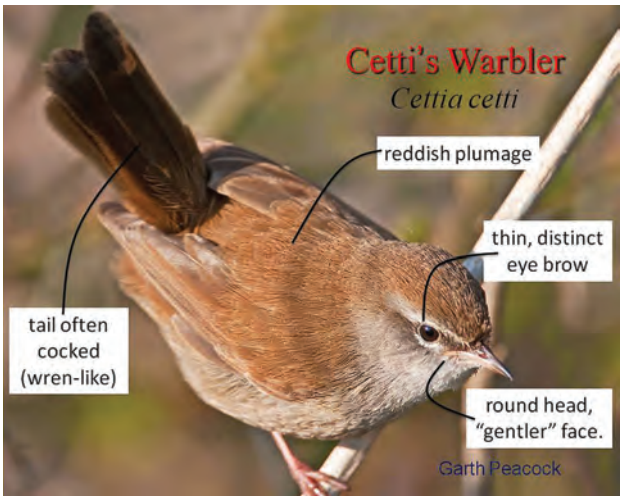
Colin described how the spit has been revitalised in more recent times to provide various leisure facilities, including an indoor ski slope, a rock climbing facility and a velodrome. We also learnt about some of the hazards present in the offshore waters. In 2015, the car carrier Hoegh Osaka ran aground upon the nearby Bramble bank sandbar, and, in 2011, over 80 unexploded WW mortar bombs were washed up onto Calshot beach and subsequently detonated offshore.

Warbler Workshop: The Talk
James Dovey

We learnt from **Tony Fulford** that there are 11 common species of warbler that breed in Dorset. Most are migratory but some are resident, or increasingly so. There are several major groups. Perhaps the best known is the Phylloscopus, more commonly referred to as the leaf-warblers. The Chiffchaff & Willow Warbler are good examples.

Because Warblers are usually '……little, brown and hard to see' Tony told us the best way to identify them is to listen to their unique and recognizable songs. And yes, we can all do it….. with a little effort! Tony's recordings of the 11 birds were then played, accompanied by some great photographs courtesy of Garth Peacock.

I listen intently to the bird I know best and the one we won't encounter on our fieldtrip to Hengistbury Head – the Dartford Warbler. This, when flying and at a distance, is a dark almost black looking bird. When close, however, it's got a unique combination of colour and design. Visually it's the stand out warbler. The summer male has burnt red, chestnut flanks, beady red eyes, a long tail, and spiky crown. The song that I got an instant grip on, and perhaps the easiest to learn bar the Chiffchaff, was the Cetti's. Just like the wren, it's hard to believe the volume for such a little bird. Loud, clear and melodic.



Anyway, we're told to listen to the textures of sound and describe them that way …..'sharp', 'rich', 'pure', 'soft, 'tinkling' …. And yes, I'm going to start listening this Sunday!

Warbler Workshop: the Walk

We meet at 7am on Easter Sunday. It's going to be a blue sky day. Tony Fulford is taking us on the fieldtrip section of his exploration into bird song at Hengistbury Head. The bins go up each time a small bird is seen. Great expectations. There are a lot of Greenfinches here! A Cetti's Warbler (14cm) is heard but not seen, perhaps the most recognizable of the warbler songs. Loud, clear, a little explosive. We head toward the shore. Half a dozen Black-tailed Godwits, their ginger Summer coats, on neck and breast, glowing in the sun.

A Blackcap (14-15cm) is heard and seen. A jaunty, musical warble with a definite end. Then a Chiffchaff (11cm) heard but not seen. Tony tells me he participates in the BTO's Breeding Bird Survey. Each year it monitors the population changes in 117 UK breeding species. About 90% of Tony's ID comes from songs and calls, at least with the passerines (birds that have feet adapted for perching…. including all songbirds). If you don't 'master' audio and rely on sight the quality and quantity of work you do will diminish significantly.

We then head toward an enclosed area. The sign says CHOG (Christchurch Harbour Ornithological Group). People are warned to keep out. We encircle it. We're staring at the tops of the pine trees. Then I realize we're looking at nesting Herons. The chicks won't hatch till May but powder blue eggs are probably ensconced. Little Egrets abound. They breed later than the Herons. Their grating, gutteral, cries impress. Two kestrels mating. There's a lot happening in this little area. We move on.

Toward the end we saw several, appropriately named, Whitethroats (13-15cm).. They're one of the easier warblers to visually identify. With Cristin & Dan I hear and then see a Cetti's - a plump, large look-alike wren (9-10cm).. It's close by. For me a little victory. They're becoming more common. We got four warblers today. Perhaps a little early in the year. We were hoping the Sedge Warblers might have arrived. The highlight of the day though, at least for me, is when we're all on a footpath leaving CHOG's area. Two cock finches, the Linnet & the Green in front of us. Two stunners in their best breeding colours. We stop and stare.

Videogames for those with severe physical challenges

Margaret Ross

Dr Mick Donegan, the 'SpecialEffect Charity' Founder and CEO, explained why he created a charity with a primary focus on access to videogames for people with severe challenges and the ways in which the charity has been welcomed by games developers from all over the world to help them to make their hardware and software more accessible to all. He used case studies to illustrate the transformational impact that access to video games can have on the quality of life of those his charity does its best to help.

Case studies demonstrated how SpecialEffect(‡) used innovative technology to meet some of the communication, control and mobility challenges experienced by people with even the most severe physical challenges, resulting from severe injury or illness, to those born with major mobility and communication problems. Examples included the use of gaze-controlled technology for communication by people in intensive care.

Mick continues to be driven by a passion to capitalise on whatever technological opportunities might be available to reduce the gap between the potential and performance of all people with severe physical challenges to enhance their quality of life as much as possible, as effectively as possible.

‡ www.specialeffect.org.uk

SpecialEffects Charity work, illustrating using equipment both for children and adults. Credit: Mick Donegan

Remarkable Rocks: Cotham Landscape Marble

An occasional series showing highlights of the BNSS geological collection

Jacqueline Bainbridge

Everyone's first reaction (including mine) to seeing their first piece of Cotham Landscape Marble is "is it real?" It is a completely natural example of a stromatolite formed by cyanobacteria aka "blue-green algae". Stromatolites have been forming since early times – 2,600 million years or more, and there are rare living examples in Shark Bay, Western Australia.

It is probable that free oxygen was added to the early atmosphere by the photosynthesis of these and algae. Cotham "marble" is a limestone not a true marble. It was first described from the Rhaetian (Late Triassic) of the Cotham area of Bristol in 1754. Mats of cyanobacteria bound the layers of limy sediment, then worms and algae grew upwards to form hedge and tree-like structures, giving the appearance of a landscape with ploughed fields.

The Cotham Formation, about 200 million years old, is still exposed in cliffs and foreshores of the Severn Estuary. Other stromatolites tend to be layered mounds, suggesting that the conditions when the Cotham limestone formed were unique.

BNSS Cotham Landscape Marble. Credit Jacqueline Bainbridge

BNSS News
Pam Field

Happily things are becoming more "normal" at the museum. During the Easter Holiday period we were open to the public on Tuesdays 12th and 19th of April. The weather on 12th was helpful to us as it was rather damp and we had a total of 125 visitors. It was like pre-covid times! However the weather on 19th was not so much in our favour and the count reduced to 62.

New emergency exit signs have an extra green light.

Since then it has been decided that the museum will be open to our volunteers on Mondays as well as Tuesdays. This will enable the volunteers to do work on the collections that would not be possible when the general public are in. This arrangement has been running for a few weeks and has been very well utilised. In addition, the intention, going forward, is to use any of the Mondays that are designated as Bank Holidays or in school holidays as a second open day for visitors in those particular weeks.

It is also hoped that if we can find sufficient volunteer stewards that we will, as we did last year, open for three days each week during the school summer holidays. That will probably be Mondays, Tuesdays and Saturdays although the final decision on that has not yet been made. Keep an eye on the website for up to date information.

Maintenance has continued on the house and the House Manager, Anne Jolliffe, has commented "We have managed to get 12 windows open in various rooms, which involves repairing rotten window sills and the pointing round them, to improve ventilation in the building. We have upgraded fire exits signs. We are due a five year electrical inspection and looking to upgrade some of the meters and to install low energy lighting where possible".

The New Chair of Assembly
Andy Davis

Firstly, I should thank you all for the opportunity to help with the running of the BNSS by appointing me as Chair of Assembly for the next year. I am expecting there to be interesting days ahead as I become more familiar with the sections and their needs.

On moving back to the region in 2020 after an absence of some 30+ years I needed a volunteering project to keep my mind sharp, that involved a scientific element, was creative, and involved my own skills and interests.

I retired in 2017 following 40+ years working in industry and the NHS. My early years encompassed radiation chemistry and hazardous safety management before I discovered the world of Medical Physics in the NHS. My time in Medical Physics was interesting and rewarding, covering radiation safety and diagnostic x-ray image quality.

From childhood I have had an interest in the sciences, particularly chemistry and physics, as well as the natural sciences. By my middle teens I had blown up a few things in the garden shed, released several creatures into the house, and discovered microscopic pond life. Later on I channelled my microscopy interests into public outreach via Natural History events and some school work.

In the end I settled for pursuing microscopy, photography, and astronomy outside of work, along with walking, archery and reading.

I am looking forward to being able to contribute positively to the future of the BNSS as a whole. Alongside the Assembly work I am endeavouring to set the foundation for digitisation of the largely untouched photographic slide collection as well as helping expand the Photography Section in conjunction with the Photography Chair, Eleni Dimitriou.

Joint Meeting with the Quekett Microscopical Club (QMC)
Grenham Ireland

The last Saturday in May saw QMC members welcomed to BNSS together with members of the public for a meeting and exhibition of all sorts of microscopy. Andy Davis supervised microscopes set up for children with tardigrades, Daphnia and Foraminifera.

I had live marine plankton with active copepods and nauplius stage crustacean larvae. Jacque Bainbridge had a number of geological displays including insects in amber, crinoid "star" ossicles and quartz crystals.

Steve Limburn tested our microscope knowledge with a display of microscopes from his collection and we had to decide what each was used for. QMC members had displays of polished rocks containing fossils, peels of sedimentary rocks, slides of textiles, live pond life and a huge number of fascinating old slides.

Steve's microscope quiz.
Credit: Pam Field

Thanks to our volunteer stewards, the museum was open to the public. We had a steady stream of interested visitors whilst QMC members had an opportunity to visit the Museum. The talk in the afternoon from "From the micro to the nano world" was given by **Dr. Ramin Boroujerdi** (Bournemouth University) and told us about advanced microscope techniques used by chemists to study nanoparticles which are used in biological sensors.


Joan Bingley former President of the QMC with visitors.
Credit: Pam Field

Brain Teaser – "The Pie Conundrum"
James Fradgley

I have a favourite restaurant, and have ranked the dessert pies from long experience on a scale of 6.

The Apple pie always scores 3
The Blackberry pie scores 2 - 56% of the time, 4 - 22% of the time, and 6 -22% of the time
The Cherry pie scores 5 - 49% of the time, and 1 - 51% of the time

Your task:
When offered any two, which should I choose to get the highest probable score in each of the 3 cases, i.e. Apple vs Blackberry, Blackberry vs Cherry, and Apple vs Cherry?

Then, having been offered Apple or Cherry, what should I choose if the waiter rushes up and says they also have Blackberry?

[The solution will appear on the BNSS website one month after publication of the Newsletter and be posted on the noticeboard at BNSS]