



BOURNEMOUTH NATURAL SCIENCE SOCIETY & MUSEUM

Share our love of science

Russell-Cotes birds migrate

James Dovey

During August 2024, the Society secured a donation of 28 taxidermy items, most of them cased, from Russell-Cotes Art Gallery and Museum. Jonathan McGowan and I visited the Hampshire Cultural Trust at Winchester to assess the specimens. They were judged on suitability, pest damage and overall condition including light damage. They appear to have been well maintained with minimal deterioration and are in good condition.

This collection contains some species we don't have, and includes birds that are the focus of present-day conservation and reintroduction projects in the southern counties of England, which is important to us. With this significant addition of birds and improved storage facilities we aim to improve our offering to the public and our members over the coming months and years.

A pair of Wiltshire Stone Curlews. These dry-country waders are summer visitors and breed on chalk downland and arable farmland. They are still rare in the south of England.



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www.bnss.org.uk
Charity No. 1165951

BNSS Photography Competition 2024

Tony Grant

Closing Date is 30th November 2024

Remember to send in your entries to photo@bnss.org.uk as soon as possible.

You can submit up to 3 entries for each category, Plants and Fungi, Landscapes, and Wildlife and each category will be awarded 1st, 2nd, 3rd and Highly Commended for both Adult and members of the BNSS "Young Explorers" group.

All entries must be taken within Dorset or Hampshire during 2024, and you must be a "Young Explorer" to enter that section of the competition.

*****NEW for 2024*** for Young Explorers only is a Nature Video Competition.**

Please read carefully the Terms & Conditions before submission. Full details can be found here: <https://bnss.org.uk/photography/photography-competitions/photography-competition-2024/>
As in previous years we will print a Photobook with the winners and all the entries to the competition. There are still some Photobooks available for 2023.

Email all your photos and any enquiries to: photo@bnss.org.uk.

August Opening 2024 Pam Field

Thanks to our brilliant volunteers we were able, once again, to open the museum during August on Saturdays, Tuesdays and Wednesdays. Unfortunately we could not open on two of the Saturdays one because the date clashed with the Air Show and one because there was a previous museum booking. In total we opened for 11 days.

I am delighted to report that our publicity efforts since last year were rewarded by an outstanding number of visitors. In total we had 2,629 visitors this year which compares very favourably with the attendance of 1,289 over 13 days last year. The highest attendance was 340 on a single day and the lowest was 131. The weather was believed to be a factor that could account for the difference. However, it is clear to us that we should not consider any additional publicity for the foreseeable future as the numbers this year were as many as we could possibly cope with over three days each week. We would need far more volunteers if we were to open on more days.

All of the visitors were asked if they had been before and the number who were new to us vastly outnumbered those that had been before. Of the total number of 2629 visitors 1853 were new to us. That was excellent news.



We also asked new visitors how they found out about the museum. The replies were generally "on line" either Google or Facebook or by personal recommendation. A very small number were "just passing".

Our volunteers, whether or not they are members, deserve a great deal of credit for our success this year. We have also been fortunate to have a number of student volunteers some of whom had been with us in previous years and others that will hopefully be back with us in the future.

We will now start thinking about our open weekend on 26th and 27th October. Watch this space...

Upton Country Park (UCP) Sally Grant

BNSS had a stand at the Upton Country Park Wildlife Adventure Day on the last day of July 2024, alongside the likes of Dorset Wildlife Trust, RSPCA, and Butterfly Conservation etc.

Grenham, Jacque and Pam brought microscopes and specimens as well as a few shop items to sell. Our visitors: children and adults alike, enjoyed examining tiny creatures



BNSS Stand at Upton Wildlife Nature Day

through the microscopes and on the attached monitor, and a few Lucky Dip parcels were sold.

As Pam, Tony and myself all help out with the moth trapping at UCP, we were strategically positioned alongside the UCP Wildlife Team Volunteers stand, so that we could help with both. We were joined by UCP volunteers Nick, Bob, Barbara, Martin and John.

We had set three light traps out the evening before, and with the night being very warm, transitioning into the hottest day of the year so far, we had the best catch of 2024. A total of 86 species of moth were recorded, some of which were displayed in our moth habitat for visitors to see at close quarters. These included 9 eye-catching Jersey Tigers, a striking pink and green Elephant Hawk-moth, and 5 species of Footman. We also identified a micro moth which was new for UCP; a Black Gelechia (*Gelechia nigra*).

I subsequently presented a talk to BNSS about the "The Flora & Fauna of Upton Country Park". If you missed it and are interested in knowing more about the activities the UCP Wildlife Team, Annual Reports can be read/downloaded here: [Holes Bay Nature Park - Upton Country Park, Poole.](#)



Dinosaur hunting on the Isle of Wight

Jacqueline Bainbridge



The Wealden Beds at Compton Bay

In January 2023, we had a talk by Megan Jacobs, visiting researcher at Portsmouth University, on the dinosaurs of the Isle of Wight, which made me determined to visit the sites. A great deal of the Island's spectacular dinosaur material has come from the Lower Cretaceous Wealden Beds exposed at Compton Bay. I first went in winter but was thwarted by tides, weather and roadworks. In July, I was finally able to get there by bus from Shanklin.

Compton Bay is a wide bay, with the clays and sands of the Wealden to the east. The lower part is the Wessex formation. About 130 million years ago, the area was the alluvial plain of a seasonally flooding river. The sands and clays are packed with plant debris and are the main source of fossils including fish, crocodile turtle and dinosaur bones. Many dinosaur species were found here, including *Iguanodon*.

A lot of interesting items can be found. Large chunks of fossil wood with sparkly iron pyrites are very attractive but decay quickly. Of interest are black beech mast and hazel nuts which look modern but come from the 8000-year-old gravels on the cliff top known in the past by locals as



*Above:
Natural cast of dinosaur foot-prints - boot for scale!*



*Left:
"Noah's nuts"*

"Noah's nuts". A short distance along the beach are large slabs of grey sandstone – these are natural casts of large dinosaur footprints. Rather surprisingly many people did not see them until they were pointed out. There is always the chance of finding your own dinosaur material. This usually is in the form of dark brown pebbles with a "honeycomb" texture. It is difficult to identify them as the bone has been eroded out of the cliff then rolled about and worn by the waves. They may not look much but it's my very own dinosaur! I even bumped into Megan leading a private tour as I was leaving.



*Above: My two days' haul (l - r) was a chunk about 3cm cubed (which is probably *Iguanodon*), a crocodile scute and possible rib fragment*

Forensic Entomology Grenham Ireland

The talk by Kat Brown (University of Portsmouth) was a joint talk with Quekett Microscopical Club over Zoom. It was fascinating but not for the squeamish since it was about the use of insects to estimate the time since death! In the UK, most research is done using rabbits. We heard about the 2 waves of insects which converged on animal and human corpses. First the green and blue bottles then the beetles. The flies lay eggs which hatch after about 16 hours into larvae which consume the flesh of the corpse then turn into pupae for about 9-14 days. However, the environment plays a role in the time taken for development although the larval mass itself can reach high temperatures.

It is important to be able to identify the species of flies since they have different rates of development and by measuring larval length and details of their mouthparts, bristles and spiracles under the microscope this can be achieved. The pupae had been a bit of a "black box" before Kat studied 1500 pupae and detailed their different stages of the development, as the larva changed into the adult fly, recognising 23 characteristics which allowed any pupa to be pinned to a 12-hour window.



We also learnt about other techniques to study developing flies including histology, scanning electron microscopy and DNA techniques. A new technique which allows live imaging of pupae was optical coherence tomography. This is a recent technique used to image the human retina in some opticians and may in future be used to accurately stage pupal development thus giving a more accurate time of death.

Polyphenism Andrew Planet

I started by explaining what a polyphenism is, and defined it as genomic expressions in individuals of the same species exhibiting different external or internal morphological and physiological traits because of environmental factors—otherwise known as phenotypes—to a degree of genetically predetermined exactness.

An example is that of peppered moth caterpillars expressing different colour camouflaging polyphenism:



caterpillars that fed on green coloured willow branches were themselves of a matching green colour whilst those feeding on dark brown branches of birch mirrored that other colour. I presented examples of plant polyphenism exhibiting alternative phenotypes, such as the Chameleon Vine *Boquila trifoliolata*, the only known botanical plant mimic whose leaves take the form of other plant species growing nearby.

I talked about violence in the natural world, citing the back ankle spurs male platypuses develop to defend territory, the female Jacana bird—larger than the males—who also have spurs on their wings with which they fight other females over territory and male stag beetles who also fight for territory and subsequent mating rights when victorious. I asked whether the tendency for violence in humans is innate or learned behaviour and indicated through brain scan images how the plasticity of neural connections in human brains distinctively changes relative to anti-social behaviour, murder or paedophilic acts.

With all the latter having reduced neural mass and patterns, I ventured to ask if these are types of an evolved ancestral internal polyphenism as other primates also engage in the same anti-social behaviour. To support this idea, I used the example of polyphenism in the Desert Locust *Schistocerca gregaria* who expresses both solitary living and gregarious phenotypes involving widespread changes in behaviour, physiology and morphology. They also express relatively alternating internal neural structures which I used as an analogy in my proposition that ancestral human neural structure could have had its own neural polyphenism.

Poundbury: The Good, the Bad and the Ugly

Sally Grant

John Hubbard delivered a very informative and interesting talk on the experimental community of Poundbury, an extension to Dorchester. With reference to "A Vision of Britain" by Prince Charles, John explored how the Prince, now King Charles III, worked with lead architect Léon Krier to realise his dream based on his own 10 principles of design.

Existing buildings have been renovated and mature trees incorporated into the new layout. A range of materials such as Portland ashlar, flint, painted stucco and bricks in a variety of colours have been used to good effect: Describing how different styles; Victorian, Georgian, Classical, Gothic Revival and Vernacular are aesthetically blended together, John stated that each phase still retained its own character.

He explained that whilst a large building may look identical externally, some may conceal six apartments whereas others may be a single mansion. There is no outward distinction made between more affordable housing and homes in excess of £1 million.

Pavilion Green, Poundbury by John Hubbard



Poundbury Street, by John Hubbard

Enhancing the village feel there is a minimal use of obtrusive road signs and good use of street lighting, whilst garages and covered parking areas are largely concealed at the rear of properties. The key focal buildings again mix Classical with early Gothic revival, although John is of the opinion that some of these buildings are too large and metropolitan and out of scale with their surroundings and that they could be of a more modest size. He added that the imposing Duchess of Cornwall pub in Queen Mother's Square looks more like a bank.

John observed that there is no main high street, the retail outlets are scattered in small groups around the town, and whilst they are potentially within walking distance, this, along with the explosion in internet shopping since Covid, has led to low footfall for most shops. As a consequence, several premises have since been re-configured as offices and service companies. In conclusion, John felt positively about Poundbury, describing it as well-intentioned, strongly beneficial and somewhere he would be happy to live.

In Memoriam

Michael Russell Broadey, BSc, MIE, MIED
(7 Mar 1934 – 1 May 2024, aged 90)
Joined BNSS 2002

Rosemary Ellen Broadey,
(née Hutchings B Comb Stds)
(1 Aug 1938 - 19 July 2024, aged 85)
Joined BNSS 2002
President 2004-2005

Obituaries will appear in the BNSS proceedings.

Dr Jane Goodall DBE- her life, work and legacy

a talk presented by Jasmina Georgovska, Director of Outreach, Jane Goodall's Roots & Shoots programme, the Jane Goodall Institute UK

Margaret Ross & Sally Grant

Dr Jane credits her mother with allowing her to dream big, so when in 1957 palaeoanthropologist, Dr Louis Leakey offers the 23-year-old, an opportunity to carry out research on chimpanzees in Tanzania, she accepts immediately.

In 1960 she and her mother, an author, travelled to Gombe where her mother set up a local clinic, whilst Jane spent each day patiently watching the chimpanzees. Initially wary, eventually an alpha male, who Jane named "David Greybeard," started trusting her. This enabled her to observe the whole troop, leading to her breakthrough discoveries.

Humans were thought to be the only animal to use tools, but Jane witnessed chimpanzees preparing twigs and using them to retrieve insects from their holes. This caused a stir as the discovery had been made by an untrained young woman, who controversially identified each chimpanzee by name and not by number. She also observed that chimpanzees were not solely vegetarians.

Her work resulted in further funding from the National Geographic Society and photographer Hugo van Lawick was sent out to document the chimps. He and Jane later married, and his photographs and films of this young woman studying the chimpanzee troop attracted worldwide interest. Encouraged by Dr Leakey, Jane wrote up her results as a dissertation and was subsequently awarded a Ph.D., without first obtaining another degree.

Dr Jane has received more than 40 honorary degrees and many other honours over the past six decades. She was honoured as a Dame of the British Empire and

appointed as an UN Messenger of Peace. She has been painted by many artists, had roses (one in the BNSS gardens) and orchids named for her, and there is a steel portrait installed in Bournemouth Central Gardens.

Jasmina spoke of Dr Jane's legacy including her environmental and humanitarian programme Roots & Shoots, empowering young people of all ages to undertake projects of their choosing to benefit the community, animals and the environment. The programme is now active in 70 countries. Addressing our Young Explorers, she explained Dr Jane's analogy of how a tree can grow from a small seed, but eventually has the power to push through rocks and walls. Dr Jane believes that young people of the world can overcome obstacles in order to remedy the problems inflicted by humans on planet Earth.

Jasmina listed Dr Jane's five reasons for hope: the commitment of young people; how the human brain can overturn the decline of the planet; the resilience of nature; the indomitable human spirit and, recent addition the power of social media for good.

Jasmina explained that the Jane Goodall Institute UK established in 1977, is one of the 24 Institutes bearing Dr Goodall's name.

She ended her talk with a video of an orphaned chimpanzee named Wounda – a chimp on the brink of death, but saved by the great JGI team at the Tchimpounga Chimpanzee Rehabilitation Centre. When fully recovered, Wounda was released into a protected area with other rescued chimps, and went on to become a mother of a baby significantly named "Hope."

Jane Goodall Institute <https://janegoodall.org.uk>

Jane Goodall's Roots & Shoots <https://www.rootsnshoots.org.uk>



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