BOURNEMOUTH NATURAL SCIENCE SOCIETY & MUSEUM

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Display Lighting in the Egyptology Room

Jo Crane

BNSS are very fortunate in having many remarkable objects on display in the Egyptology Room. In recent years considerable investment has taken place to ensure that Tahemaa's mummy and case have been properly cleaned and conserved as well as displayed in a modern illuminated case. However, it was clear that the myriad of significant smaller objects in the room were hard to see in the existing gloomy and often cramped cabinets.

Joyce (Egyptology Chair) relined the cabinets and rearranged the contents. I then started a project to properly illuminate all the room's collection using modern LED lighting. The installer of the lighting in Tahemaa's case was consulted and, with mutual agreement, most of the equipment was purchased from them.

Rather than using spot lights like many museums, it was decided to use low profile, high efficiency diffuse LED strip lighting.

This would result in even illumination with minimal heating and no harmful emissions. Various forms of strip and mountings were carefully selected in order to produce the best distribution of light while minimising reflections and glare.

The lamps operate at a flicker-free low voltage and each cabinet can be dimmed independently. The end result has transformed the atmosphere within the room and the ability to study and enjoy all the fascinating and important collection.

Museum Curation
Ray Chapman (BNSS Curator)

One of the many tasks involved in running a museum is Curation. This is the care and conservation of the museum's collections from entry to the museum throughout their existence. Objects can be acquired from many sources, from visitors, members, other museums and societies and by purchase (although that hasn't happened for as long as I can remember).

The process starts with the Object Entry form where all of the details of the object and the donor are recorded together with any documentation involved. Before completing this, certain criteria have to be established; is the donor the owner, are there any copyright issues, do BNSS actually want the object, what is its condition, is it legal, (this applies to butterflies and eggs depending on their age of collection and ivory or objects containing ivory as well as human objects). If the object meets the criteria, the donor is asked what they would like us to do with it; put it on display, put it in store (depending on space requirements), use it as a teaching aid or put it for sale.

The object is then checked for pest infestation or other damage and held in temporary store. It is then agreed between the appropriate section chairman and the curator whether we want to keep the object in the collections or just use it for teaching or handling. If the former, then the Accession Register has to be completed. This is the first time that the object(s) is allocated an identification number together with its description and other relevant information. Next the object has to be located somewhere, either on display, in a cabinet or stored. This is arranged by the chairman of the section and the curator. It is essential that the location is secure.

To enable it to be tracked and checked in the future, the object has to be added to the appropriate collection catalogue. When we started preparing for Accreditation over ten years ago, we discovered that only two Collections had catalogues, two had rudimentary catalogues and the others had no catalogue information. This meant a lot of work going through each collection and recording the information on a database or spreadsheet, allocating object numbers related to the Accession number together with information of donors, size, binomials and common names, location found, location kept in the museum plus other criteria. The object could now rest safely and be seen by visitors. Our Accession Register dates back to 1906 but was not always filled out so we have the problem of identifying which object relates to which number, many are untraceable, and if none exists, generating a new number.

Checking butterfly case for pests

The exercise of applying for and obtaining Accreditation was a long and painful journey, the reason for applying was to obtain the status of a 'proper' museum and also to enable the applications for grants from various organisations. The Accreditation rules are set by the Arts Council England supported by Collections Trust. There are nine mandatory procedures and twelve optional, all of these had to be adapted as procedures to meet BNSS requirements. Additionally, the Arts Council specify their own requirements related to customer interaction, housekeeping, care and custody of collections, management, Emergency planning, documentation, forward planning, and many other topics. These requirements resulted in the preparation of some twenty three documents to be followed by the museum.

Accreditation lasts for three years and then has to be renewed. Currently, the Arts Council is running late due to Covid and although our next session is due it has not yet been asked for. In addition to all of the above, Curation involves Pest control, this is the checking for insect larvae that may damage the specimens. Insect traps are placed throughout the building and the cabinets to trap the larvae to measure the amount of infestation through the building. If excessive, then action can be taken to clear any infestation. Likely areas for infestation are the butterflies and other insects, the stuffed birds, carpets and papers. The fossils are also regularly checked for pyrite decay caused by high levels of relative humidity. The non-organic collections also need to be checked for any deterioration caused by the environment and dehumidifiers have been placed in some areas of concern. There is a necessity to keep the museum clean and tidy by checking the cabinet drawers for dust and dirt and ensuring that corridors and pathways are kept clear. I am sure that this all sounds incredibly bureaucratic but if followed it should enable us to function competently in the future.

Dragonflies
Grenham Ireland


Southern Hawker Credit: Peter Allen

Peter Allen began his talk describing the 27in wingspan of the monster dragonflies which might have been around 300 million years ago when oxygen levels were higher compared to Nannophya pygmaea the smallest known dragonfly, mostly found in Southeast Asia.

He then related the differences between the Zygoptera or damselflies and the Anisoptera or dragonflies whose fore and hind wings differ in shape and the whose eyes meet in the middle of their head. These compound eyes consist of about 30,000 omatidia or visual units each with a lens and light sensitive cells. He discussed how the larvae, voracious predators themselves, will eventually crawl up a water plant stem and emerge in a final moult as the adult dragonfly.

At first males are similar to females in colour but they may then develop a different colour and pruinescence as they mature after which they return to the same area of water to establish a territory and defend it vigorously. We learned about their unique reproductive structures and behaviour. Pairs can often be seen in the so called 'heart-shaped wheel' in which the male grasps the female's head with his claspers whilst she bends her abdomen to his ventral thorax where the sperm are stored in a secondary genital apparatus.

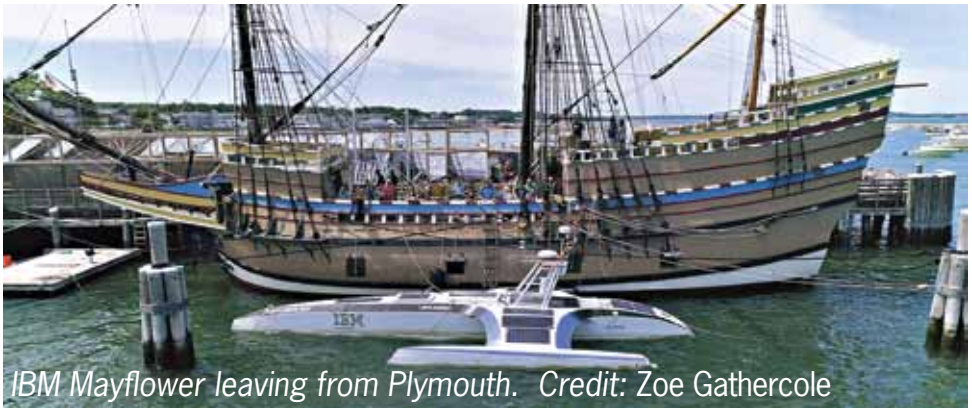
Peter then turned to describe many of the species that can be found locally in Dorset using his own photographs and their preferred habitats as shown in various distribution maps.

The Mary Celeste of today - AI travels on the Mayflower
Margaret Ross

This Zoom talk in August given by **Zoe Gathercole**, Software Engineer, IBM Research UK. The *Mary Celeste* sailed for a while with no crew or passengers in 1872, whereas the Mayflower sailed in 2022 across the Atlantic from Plymouth to the USA again with no human or remote control, using Artificial Intelligence (AI). The Mayflower Autonomous Ship is a first-of-its-kind.

On its inaugural journey, the ship commemorated the original Mayflower by following its transatlantic route, with one crucial difference being that this modern Mayflower gathered critical ocean data, with not a single person on board. This data could help us understand the impact of climate change and pollution, as well as how to better protect our oceans. Not only must the ship follow maritime law, make crucial split-second decisions, reroute itself around harsh weather environments, but also collect and analyse vast amounts of ocean data – using a combination of sensory technology, real-time machine learning and analytics, and a state-of-the-art decision engine.

The idea for this unique "Eco Ship" started in 2016, and it took three years to build, using mainly off-the-shelf open source software and RaspberryPi equipment. It was designed to undertake various scientific experiments on its Atlantic Crossing including monitoring tides and sea levels, associated with the phases of the moon and recording and analyzing onboard samples of seawater every 15 minutes, associated with the exact location using satellite navigation. On approaching the America Coast, a distress message was identified by the Mayflower, passed back, but the suggestion re-route the Mayflower to help was jected by the U.S coast guards who said that they could deal with situation directly themselves. It is possible it was felt that the lack of any water, food, or accommodation on the Mayflower might not have been ideal!



IBM Mayflower leaving from Plymouth. Credit: Zoe Gathercole

Extracts from Bright's Guide to Bournemouth (1890)

Sue Newman

Having been approached to compose a short piece for this newsletter, especially something regarding the ecology as it existed in past times, I offer you from my personal library a description of the flora of the nascent Bournemouth as it was over 130 years ago.

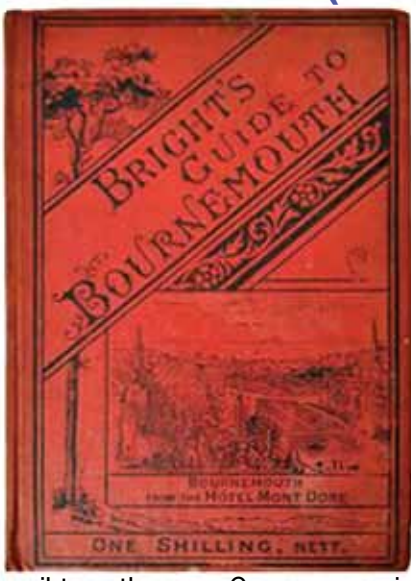
"Bournemouth stands amidst a group of gently undulating hills and valleys, but the soil being formed for the most part of sand and gravels of the somewhat barren Bagshot Series, its flora is necessarily . . . in a measure restricted, so as to justify to some extent the remark of casual visitors of being 'destitute of wild flowers' . . .

"The heaths, the gorse and the bracken have universally established themselves above all other competitors, upon the open moors . . . we have recently found growing in the centre of our district, Menziesia polifolia (St Dabioc's heath), a strictly West of Europe plant . . . but for which this is the only locality recorded in England. Still confining our attention to the damp, peaty soil, we must introduce our readers to a class of plants of peculiar interest alike to the botanist and the biologist; we allude to the Insectivorous Plants, that have attracted so much notice in consequence of the observations of the late Mr Darwin and others; for the study of which Bournemouth is most advantageously situated, possessing as it does, within a narrow compass, examples of each family growing in England: viz., Drosera, Pinguicala, and Utricularia.

"Drosera rotundifolia (round-leaved sundew), and Drosera longifolia (oblong sundew), are common about Bournemouth . . .

"Jasione Montana (Common Sheep's-bit) occurs abundantly; and growing on sandy soil on the East Cliff is Jasione littoralis, a small and probably degenerate variety. In the same locality, Psamma arenaria (Sandgrass, Maram or Sea Matweed) should be noticed, forming small hillocks, and binding the sandy

Drosera rotundifolia
(Credit: Michael Gasperl – Creative Commons 2.0)



soil together. . . Carex arenaria (Sand sedge), a plant of similar utility, is likewise to be found growing on the sandy slopes of the cliffs. Numerous other sedges may be found, as the Cotton sedge (Eriophorum polystachyum), Cyperus fuscus, Scirpus palustris, Scirpus Uniglumis, Scirpus fluitans, Carex paniculata, Carex muricata, Carex stellulata, Carex punctata, Schoenus nigricans, etc etc,

"Ferns are not particularly well represented, though within a moderate walk, several species of Shield Ferns may be collected; as also Anthyrium (Asplenium) Filixfoemina (Lady Fern), Osmunda regalis (Royal Fern) which occurs at Parkstone and Christchurch."

"The following list includes a few of the Flowering Plants occurring in the immediate neighbourhood" (see lists above right).

Greater Centaurea
Corn Marigold
Ox-eye Daisy
Succory or Chicory
Harebell
Centaury
Marsh Gentian
Nightshade
Figwort
Foxglove
Goosewort
Viscid Bartsia
Red Bartsia
Toadflax
Round-leaved Linaria,
Pointed Linaria
Lesser Snapdragon
Self-heal
Skullcap
Wood Sage
Scarlet Pimpernel
Bog Pimpernel
Purple Spurge
Wood Spurge
Sweet Gale
Creeping Pillwort

Wood Anemone
Lesser Celandine
Small flowered Ranunculus
Spearwort
Marsh Marigold
White Waterlily
Yellow Waterlily
Climbing Corydal
Common Fumitory
Bladder Campion
Red Lychnis
Corn Cockle
Ragged Robin
Stitchwort
Lesser Stitchwort
Sandspurry
St. John's-wort
Slender Hypericum
Marsh Hypericum
Trailing Hypericum
Dwarf Mallow
Broom
Spotted Medick
Bird's-foot Trefoil
Bird's-foot
Hare's-foot Clover
Rough Clover
White Melilot
Tormentil
Silver Weed
Cinquefoil
Bramble
Willow Epilobe
Common Bryony
Mossy Tillæa
Pennywort
English Sedum
Biting Sedum
Goldenrod
Knapweed

Not many wild flowers, then? I leave behind the erudite, punctilious and somewhat florid High Victorian style of the writer, whilst admiring his great attention to correct punctuation, and suggest a search party from the Botany group undertakes to find any of these plants still clinging on.

And please note, I have spared members copious descriptions of the forms and functions of many plants mentioned, especially the sundews and entirely omitted the pines, which were not native to Bournemouth. Readers can only take so much! William Dolomore was the author of this chapter in the tourists' typical contemporary reading material. I wonder who he was?

The Bournemouth Plant Beds
Jacquelene Bainbridge

The BNSS has a sizeable collection of plant fossils from the Eocene period (about 50 to 42 million years ago). This area was then a delta between the open sea of the main Hampshire Basin and rivers from the west bringing in plant debris. Bournemouth was at a latitude of 40-42 degrees north, about that of Southern Spain now. Due to the Mid Eocene Climatic Optimum period of global warming, the vegetation was a mix of temperate and tropical.

The fine silty sands are very friable but preserve detailed impressions of leaves. These are not always easy to identify – some that have been belong to Acacia, Eucalyptus, Araucaria ("monkey puzzle" and Norfolk Island pine) and the Vietnam Swamp palm (Nipadites) Nipa fruits were abundant just east of Boscombe pier.

Our specimens were recovered from the cliffs at Alum Chine in 1909 by BNSS members. The cliffs are no longer in a natural state and covered by vegetation which slowed natural erosion. Due to this it is no longer possible to collect leaf fossils. Some were reported from Hamworthy, but it seems that these too can no longer be found. We are lucky that our earlier members had the foresight to collect this valuable evidence of ancient climate and botany.

Impressions of leaves on pipe clays near mouth of Durley Chine

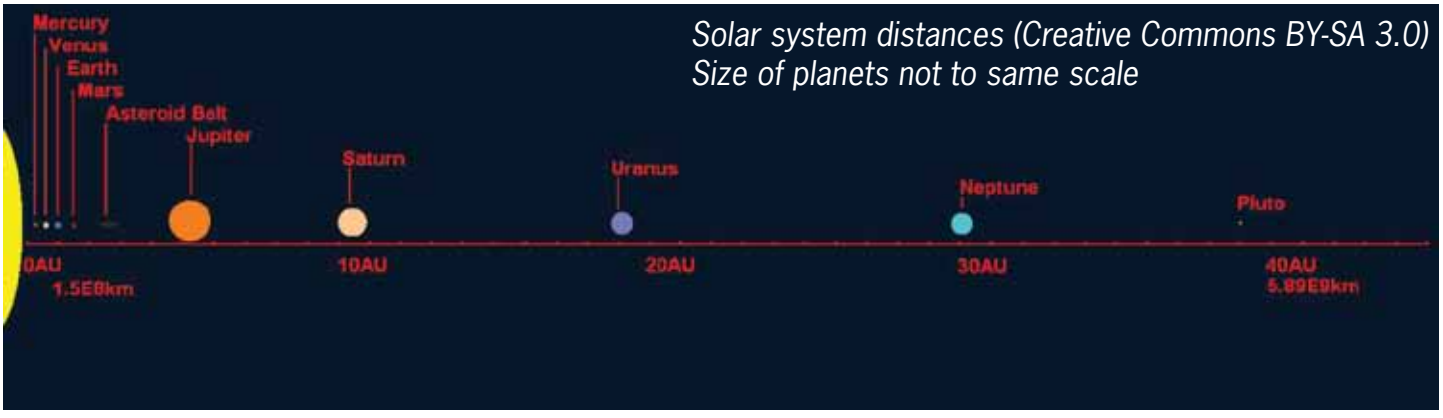
Solar System Walk
James Fradgely

Kate Earl arranged a walk on July 11th from Bournemouth pier to Boscombe pier, which is a distance of 1.6 miles, showing the solar system to scale as we walked along the promenade. The weather was fine but a bit windy.

Some 15 people attended. The sun was represented to scale by a beach ball, and as we reached the relevant distance for each planet, Kate produced things that showed the relative size of each planet. It showed very well how tiny the planets are, and how much empty space there is in the solar system.

The walk ended up at Boscombe pier, which happens to have the Neptune pub there, which is a nice location to end the walk with the planet Neptune and a drink. Kate had put a lot of work into preparing things to show physically or on her laptop, and at each stop Kate gave us a lot of information about each planet.

The whole show was much appreciated by those attending, even if they did have to walk back to Bournemouth to pick up their cars!



Solar system distances (Creative Commons BY-SA 3.0)
Size of planets not to same scale

Essential Tree surgery
Jill Abbot

The three mature birch trees close to the East boundary were found to have suffered from age, extremes of heat, drought and cold since they were last surveyed in 2018. One was found to be dead with the two others ailing. For safety's sake the central tree has been taken down retaining a tall stump for wildlife.

Agreeing with my original concern, the tree surgeon confirmed that the two remaining trees may well have a very limited life remaining. They will need to be monitored. The Indian bean tree (below) was also reported to be looking stressed and some dead wood was removed.

Dull statistics but good news
Pam Field

As in previous years it was decided to open the museum to the public for three days each week during the month of August. Attendance was variable and although my thoughts have previously been that it depends largely on the weather that did not prove to be the case this year.

The total number of visitors this year was 1289 as opposed to 792 in 2022. Happily, there was also a substantial increase in donations and sales compared to last year. In addition to the statistics that we kept for 2022, this year we included data that shows that over 60% of people visiting had never done so before and many of the new visitors indicated an intention to return with other family members. This bodes well for the future and clearly shows that the additional publicity that we are doing on Facebook, Instagram and other systems is having the desired effect.

The trustees owe a debt of gratitude to those members and volunteers who have supported us during the month. Without your valued assistance we would not be able to open for so many days.

Upcoming Events

26th September – Assembly & Quiz (In house & Zoom)

28th & 29th October - Open Weekend (bring your family and visit the museum)

9th December – BNSS AGM & Assembly (In house & Zoom)

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