



7TH FEBRUARY 2020

Student Spotlights

Discover the next generation

Public Speaking and Poster Competition

**COME AND LISTEN TO THE NEXT GENERATION
OF NATURAL HISTORIANS SPEAK ABOUT THEIR
RESEARCH!**

THIS DAY EVENT TESTS STUDENTS' ENGAGEMENT
SKILLS; SEEING HOW WELL THEY CAN SHARE THEIR
RESEARCH WITH THE AUDIENCE.

OUR SPEAKERS AND POSTER PRESENTERS ARE
AT DIFFERENT STAGES OF THEIR STUDIES, AND
RESEARCHING ACROSS A BROAD RANGE OF
NATURAL HISTORY.

TODAY'S PROGRAMME:

09:45-10:00	DOORS OPEN
10:00-10:10	WELCOME TO THE SOCIETY BY JOE BURTON & LEANNE MELBOURNE
10:10-10:30	RAINY, HUMID, AND MUDDY: NOTES ON NESTS AND ECOLOGICAL INTERACTIONS OF BUMBLEBEES IN SOUTHEAST ASIA CHAWATAT THANOOSING (1)
10:30-10:50	HOW MUSEUM COLLECTIONS CAN HELP WITH SAVING WALLACEA'S LARGE UNGULATES SABHRINA GITA ANINTA (2)
10:50-11:10	LIFE AMONGST THE DEAD: BEETLES IN UK URBAN BURIAL GROUNDS MEG CATHCART-JAMES (3)
11:10-11:40	TEA BREAK
11:40-12:00	IS FLOWERING IN GREENLAND ADVANCING? USING HISTORICAL RECORDS TO INVESTIGATE RESPONSES TO CLIMATE CHANGE MAUDE GRENIER (4)
12:00-12:20	UNDERSTANDING THE BACTERIUM <i>XYLELLA FASTIDIOSA</i> LOUISSE PAOLA MIRABUENO (5)
12:20-12:40	SAPROXYLIC STEPPING STONES - INVESTIGATING HABITAT CONNECTIVITY FOR DEADWOOD INSECTS STEPHANIE SKIPP (6)
12:40-13:40	LUNCH
13:40-14:00	ORNAMENTAL PLANTS: OUR FUTURE INVADERS? TOMOS JONES (7)
14:00-14:20	"SLUGS COUNT": UNDERSTANDING SLUG SPECIES IN UK GARDENS IMOGEN CAVADINO (8)
14:20-15:00	POSTER SESSION AND TEA
15:00-15:30	WHAT'S ON THE MENU? PLASTIC INGESTION ANIMALS IN THE RIVER THAMES AREA ALEX MCGORAN
15:30-15:50	PRIZE GIVING
15:50-17:20	DRINKS RECEPTION

TALK SESSION:

1. RAINY, HUMID, AND MUDDY: NOTES ON NESTS AND ECOLOGICAL INTERACTIONS OF BUMBLEBEES IN SOUTHEAST ASIA

CHAWATAT THANOOSING NATURAL HISTORY MUSEUM & IMPERIAL COLLEGE LONDON

Bumblebees are important insect pollinators, they forage pollen and nectar of flowering plants as their essential resources. Flower-rich grasslands and heathlands are their suitable habitats in the temperate; while tropical montane forests are habitats for bumblebees in Southeast Asia. Currently, the knowledge about their food plants in this region is insufficient. The accessibility of tall tree flowers for observation in the tropical forests can be limited, compared to the temperate habitats. Thus, storing pollen grains from bumblebee nests are sought as evidence to trace back their food plants.

Here, I will talk about my exploration for bumblebee nests behind the mist of Doi Inthanon Mountain, the highest peak of Thailand, during the rainy season. Two bumblebee nests of different species, *Bombus breviceps* and *B. montivagus*, were found under muddy substrate in an agricultural area and the pollen samples were collected. This is the first discovery of the nests of these two species in Thailand. The preliminary result shows that the pollen morphotypes from these nests are different. This is a pioneering step for elucidating the ecological interactions of bumblebees and their food plants in this region.

2. HOW MUSEUM COLLECTIONS CAN HELP WITH SAVING WALLACEA'S LARGE UNGULATES

SABHRINA GITA ANINTA QUEEN MARY UNIVERSITY OF LONDON

The Wallacea region in Indonesia, named after Alfred Russel Wallace, is an archipelago that hosts exceptional endemic vertebrate diversity, including iconic species such as anoa (*Bubalus* spp.; dwarf buffaloes) and babirusa (*Babyrusa* spp.; "deer pig"). As the local government plan to accelerate economic development in the area, these species have been threatened by habitat loss and further increase of hunting pressure.

To assist conservation efforts of anoa and babirusa, I aim to use their DNA to assess how the anthropogenic disturbances in the Wallacea affect their long term survival. In particular, I am interested in using DNA derived from museum specimens, that have been collected by naturalists throughout the 19th-20th centuries. By comparing the genetic make-up of individuals that lived prior and after major deforestation in different populations, we can identify populations that were most affected by deforestation, and forecast which areas in the Wallacea are the most suitable for conservation efforts.

3. LIFE AMONGST THE DEAD: BEETLES IN UK URBAN BURIAL GROUNDS

MEG CATHCART-JAMES UNIVERSITY OF READING

In increasingly fragmented and built up urban areas, burial grounds form some of the last bastions of grassland, ancient tree, deadwood and old hedgerow habitats in the UK. Local councils are responsible for looking after urban green spaces, yet many don't define burial grounds as such. This means that their unique nature is not recognised, and they aren't afforded the sensitive management they need to protect and enhance wildlife.

There is very little published research on the ecology of UK burial grounds, and with my PhD project I aim to rectify that. By measuring the richness of wildlife species in urban burial grounds, understanding the environmental factors that promote that richness, and the management needed to achieve or maintain it, I hope to reveal more about the true ecological importance of these green spaces. The places where our loved ones sleep their final rest are profoundly important to so many people - and perhaps, to many species other than humans too. During this presentation I'll introduce you to some of my graveyard-dwelling, 6-legged friends and their role in my project.

4. IS FLOWERING IN GREENLAND ADVANCING? USING HISTORICAL RECORDS TO INVESTIGATE RESPONSES TO CLIMATE CHANGE
MAUDE GRENIER UNIVERSITY OF EDINBURGH

Temperature is important for the timing of plant flowering and fruiting. In the Arctic, temperatures are rising at twice the global rate. What effect does this have on Arctic Flora? Historical records, such as pressed plants, have previously been used to investigate the advancement of flowering time and the sensitivity of certain species to warming. The Arctic is vast, and compared to other countries such as the UK, relatively unrecorded.

In this talk I will present my recent work on this question, digitising and analysing over 5,600 herbarium specimens across 122 years from the Royal Botanical Gardens in Edinburgh and the Museum of Natural History of the University of Copenhagen.

5. UNDERSTANDING THE BACTERIUM *XYLELLA FASTIDIOSA*
LOUISE PAOLA MIRABUENO UNIVERSITY OF READING & NATIONAL INSTITUTE OF AGRICULTURAL BOTANY - EAST MALLING RESEARCH

Xylella fastidiosa is most notoriously known to cause Olive Quick Decline Syndrome in the South of Italy, Citrus Variegated Chlorosis in Brazil, and Pierce's disease of Grapevine in California in the USA. *X. fastidiosa* also affects many other plants such as cherry, peach, lavender, oak and coffee/ However, this bacterium does not cause diseases in all of the plants it has been detected in.

In my research project, I am trying to find out why *X. fastidiosa* may live happily in some plants but cause disease in others. By means of computational biology, I am aiming to understand the molecules that interact with the plant immune system and the evolutionary history of the bacterium.

6. SAPROXYLIC STEPPING STONES: INVESTIGATING HABITAT CONNECTIVITY FOR DEADWOOD INSECTS
STEPHANIE SKIPP UNIVERSITY OF EAST LONDON

Everyone knows what a bird box is, but how would you feel about having a beetle box in your garden? There are thousands of insect species that need decaying wood to survive – we call these species 'saproxylic'. However, over the past century, the ancient woodlands that hold such habitats have been severely depleted. As a result, many saproxylic insects are under threat.

I will be speaking about my research which aims to understand how much habitat saproxylic species need. I am also investigating new ways to introduce extra habitat into areas where insects require an added boost. One method is the 'beetle box' which is a hollow structure mimicking a hollowing tree. These are placed into forests and filled up with nutritious decaying wood. We have installed beetle boxes into specially selected nature reserves in an attempt to provide extra habitat resources for one of the most restricted beetle species in the UK, the endangered violet click beetle.

7. ORNAMENTAL PLANTS: OUR FUTURE INVADERS?

TOMOS JONES

UNIVERSITY OF READING & ROYAL HORTICULTURAL SOCIETY

Plant hunters have been introducing plants to the British Isles from all over the world for centuries; mostly as ornamental plants for gardens. A small number of these have escaped gardens and become invasive, meaning that they have a detrimental impact on native biodiversity. So, should we be worried? Well yes, because invasive species are one of the main threats facing the natural world and climate change could facilitate more plants to become invasive. Are those future invaders currently growing in our gardens?

This challenging question is the topic of Tomos' PhD, and gardeners are crucial to his approach to finding an answer. In a gold medal winning exhibit at the RHS Chelsea Flower Show, he explained the issue of invasive plants and how gardeners can help by identifying ornamental plants showing 'invasive behaviour'. Tomos will discuss his experiences from RHS Chelsea, how gardeners have contributed to his research and how climate change might allow potentially invasive plants to escape our gardens. It will be of great interest to gardeners and those interested in environmental issues.

8. "SLUGS COUNT": UNDERSTANDING SLUG SPECIES IN UK GARDENS

IMOGEN CAVADINO

ROYAL HORTICULTURAL SOCIETY & NEWCASTLE UNIVERSITY

Slugs and snails are notorious horticultural pests, widely detested by gardeners. However, not all species of slug and snail found in the UK are plant pests, with many playing important roles in breaking down decaying material and recycling nutrients into the soil. In home gardens, the presence of slugs is usually recognized by feeding damage, with the culprit species not identified, and little is actually known about which slug and snail species are present in UK gardens.

By identifying what species occur in UK gardens, we can map the spread of invasive species and try to understand the garden features that may influence this. Data provided by the public can also be used to identify locally abundant pest and non-pest species, allowing control methods to be targeted to problem species, reducing negative impacts on other wildlife. Through the RHS Cellar Slug Survey, we are asking the public with access to a garden help us track down two slug species. This allows us to monitor the decline and spread of these species throughout the UK, whilst conveying an important message about the different roles slugs play in gardens.



POSTER SESSION:

1. **DO WE REALLY NOTICE ENVIRONMENTAL CHANGE?
INVESTIGATING THE IMPACTS OF SHIFTING BASELINE SYNDROME**
LIZZIE JONES ROYAL HOLLOWAY & INSTITUTE OF ZOOLOGY, LONDON
2. **CAN HUMANS DISCRIMINATE INDIVIDUAL ANIMALS BY THEIR VOICES?**
SABRINA SCHALZ MIDDLESEX UNIVERSITY
3. **AFRICAN SAVANNA ELEPHANT (*LOXODONTA AFRICANA*) DAMAGE ON LARGE
TREES IN A FENCED RESERVE: KARONGWE PRIVATE GAME RESERVE, SOUTH AFRICA**
KATIE THOMPSON BOURNEMOUTH UNIVERSITY & ZOOLOGICAL SOCIETY OF
LONDON
4. **A CENTURY OF BUTTERFLY AND SOCIAL WASP TRENDS FROM NATURAL
HISTORY COLLECTIONS**
GALINA JÖNSSON NATURAL HISTORY MUSEUM & IMPERIAL COLLEGE LONDON
5. **RELATIONSHIPS AMONG MERCURY LEVELS, EGG MORPHOLOGY AND OFFSPRING
TRAITS IN A LONG-LIVED SEABIRD, THE COMMON TERN.**
ANDREA PARISI INSTITUTE OF AVIAN RESEARCH 'VOGELWARTE HELGOLAND' &
MIDDLESEX UNIVERSITY
6. **ON THE VERGE: CAN ROADSIDE NATURE RESERVES SUPPORT LEAF AND PLANTHOPPERS
OF CONSERVATION CONCERN?**
JAMES ROWLAND HARPER ADAMS UNIVERSITY



PLENARY TALK:

WHAT'S ON THE MENU?

PLASTIC INGESTION BY ANIMALS IN THE RIVER THAMES AREA

ALEX MCGORAN

NATURAL HISTORY MUSEUM & ROYAL HOLLOWAY

WINNER OF THE 2019 LINNEAN SOCIETY STUDENT CONFERENCE

The Thames is reported to be heavily contaminated by plastic, with thousands of items rolling along the riverbed. Despite this pollution, the Thames Estuary is a diverse habitat full of wildlife including over 125 species of fish recorded in the tidal Thames. Recent research, however, indicated that fish are ingesting plastic, mainly fibres. But are they the only aquatic species in this catchment being contaminated and can they be used as a reliable indicator species for plastic contamination?

Two species of brachyuran crab (*Eriocheir sinensis* and *Carcinus maenas*) were sampled from Erith, Kent in the upper Thames Estuary. Their gills, gastric mill and digestive tract were examined separately to determine the amount of plastic contaminating these crustaceans. Almost all the crabs sampled had ingested plastic, many containing tangled balls of plastic made up of over 100 fibres. Does this volume of plastic have an impact on the fitness of the crabs and are both species equally affected?

Stranded megafauna are a common occurrence in the UK and the Thames is no exception. What can these animals tell us about plastic pollution in our waters?



THE PRIZES:

Best talk: £80

Runner up: £50

Best poster: £50

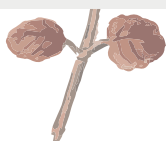
Runner up: £30

THE AUDIENCE VOTE:

Don't forget to vote for your favourite talk and poster using the voting slip attached.

When voting, ask yourselves these questions:

- Was there a clear structure?
- Was the format interesting and engaging?
- Do you feel like you understood the key messages and content?
- Do you feel inspired to find out more?



WE WILL BE TWEETING THROUGHOUT USING:

#LINNCONF2020 @LINNEANSOCIETY