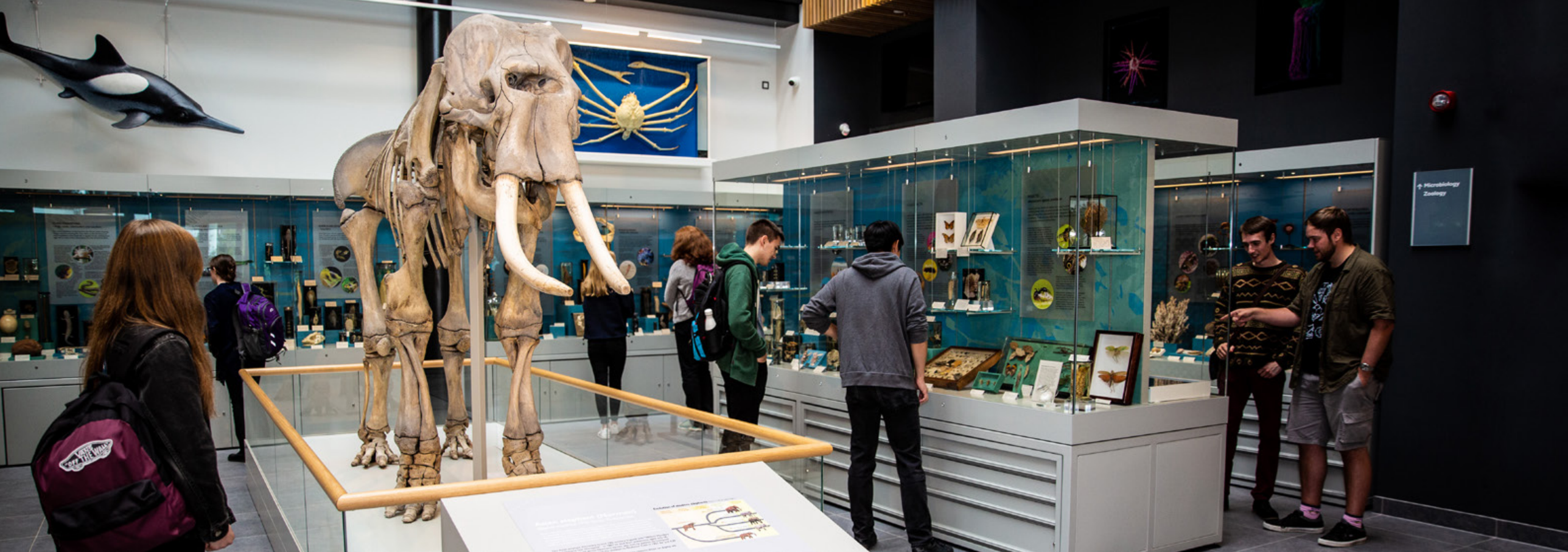
Museum & Collections

School of Biological Sciences

University of Reading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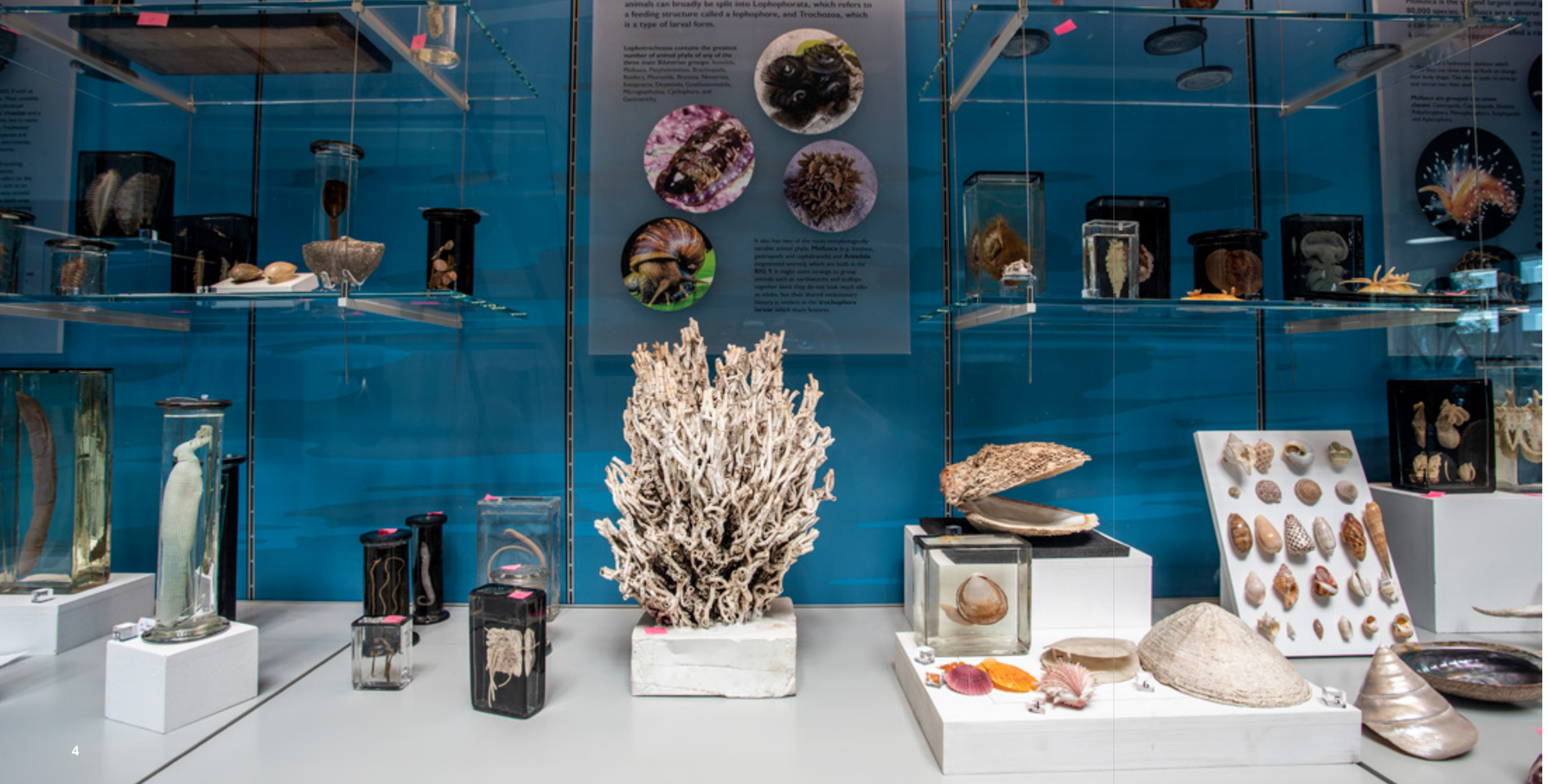


Our Museum & Collections

Strolling through campus it could be easy to walk past a much-loved museum, unaware of the treasures which lie behind its doors. For students of the School of Biological Sciences, however, the Cole Museum of Zoology is the jewel in the crown, with many volunteering to care for its precious collections.

The Cole Museum and its specimens are widely used in teaching, particularly in zoology modules and in final year projects in palaeontology, evolution and anatomy. More than a hundred years since it was founded, it remains a tremendous source of inspiration to both students and academics.

The University holds a fantastic geological collection of minerals and rocks, which is in the process of being transferred across to the Cole Museum, where it is already being used for research. It contains fossils covering the beginning of bacterial life on Earth, through to the first multicellular animals, displaying the diversity of marine life during the Cambrian and Ordovician period. The fossils include plants, invertebrates and animals, including dinosaurs that are used to teach the Life on Earth and palaeontology modules.

The Herbarium (RNG) is an active research and teaching facility, containing around 410,000 specimens of flowering plants, conifers, cycads, ferns, lycophytes and non-vascular plants. Founded in 1897, it is an amalgamation of collections from Reading and Southampton. The herbarium holds extensive collections of dried plants, especially from the UK, Europe and the Mediterranean and temperate South America. The herbarium is used to teach a range of undergraduate modules and to support the MSc in Species Identification and Survey Skills. It is a major research resource and has a high proportion of modern specimens that have been used for DNA extraction.

The Cole Museum of Zoology

For over 100 years students have studied zoological subjects at the University of Reading, using the Cole Museum. It remains a source of inspiration to students, staff and the local community, and is an important resource for object-based teaching.

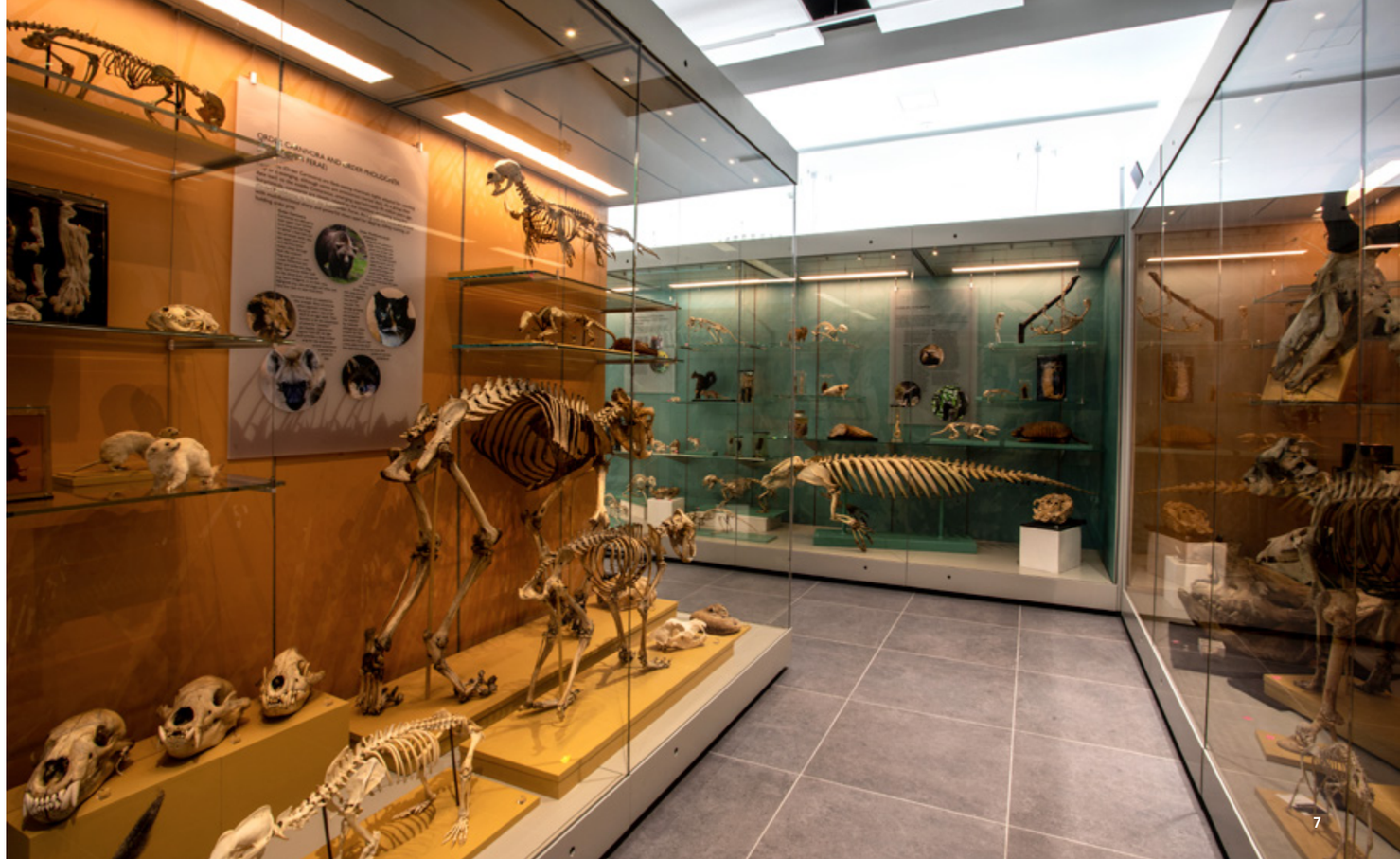
The collection was started in 1907 by Professor Francis Cole to teach zoology, with specimens rather than just books and lectures. It contains over 3,500 animal specimens including complete skeletons, whole animals in fluids, taxidermy and fossils.

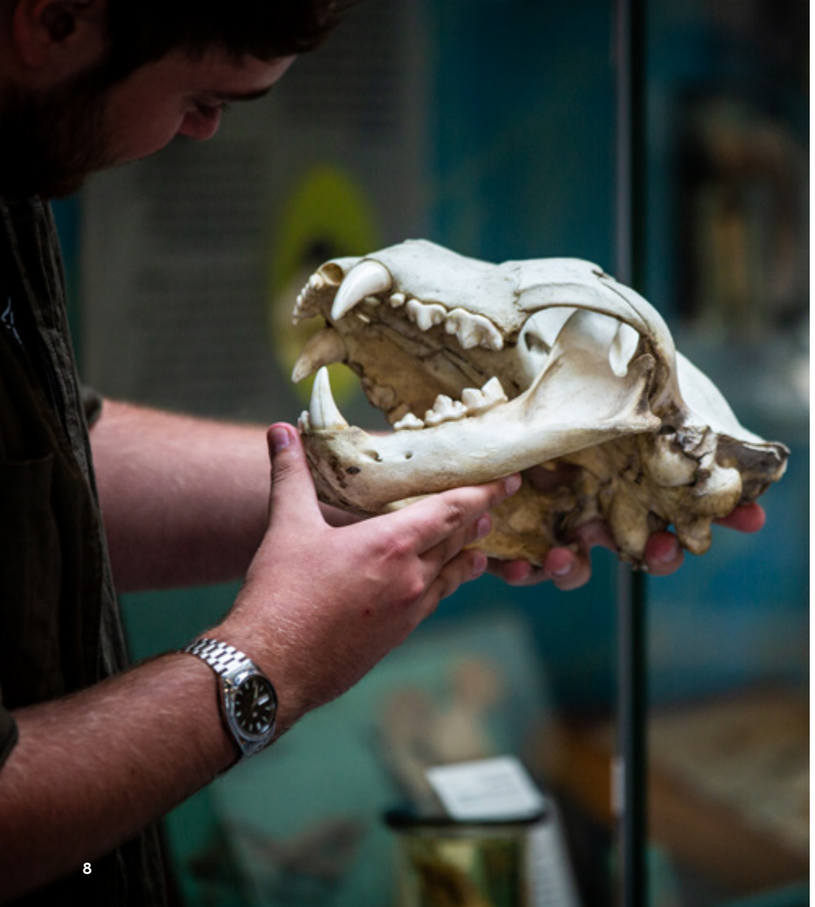
The Cole Museum was redesigned and moved in 2020, during the covid pandemic, into the new state-of-the-art Health & Life Sciences building. The new display is focused on animal diversity, evolution and adaptation, that is used to support taught undergraduate modules and research.

Professor Amanda Callaghan has been curator of the museum since 2005, and is passionate about maintaining its relevance.

> “Since I’ve taken over, it’s been my mission to integrate the museum far more in teaching and offer students closer access to the museum,”

Many students get excited about coming here and using the specimens. In most museums they are behind glass and you can’t access them, so the students really do benefit from it.





Volunteering

Our student volunteers are our lifeblood. Volunteers help with cataloguing fossils, shells and insects, maintaining our spirit collections, and when needed, packing and moving items. Volunteers also train to be tour guides, supervising school groups, and entertaining visitors from far and wide.

Volunteering at the Cole Museum

Our volunteers take their zoological knowledge out to the wider community by running "pop-up museums" at University events. Previous volunteers have gone on to work at natural history museums throughout the country, including London, Oxford, Portsmouth and Bristol.

> "Being able to observe so many specimens really enhances my understanding in my zoology studies."
>
> ***Grace***

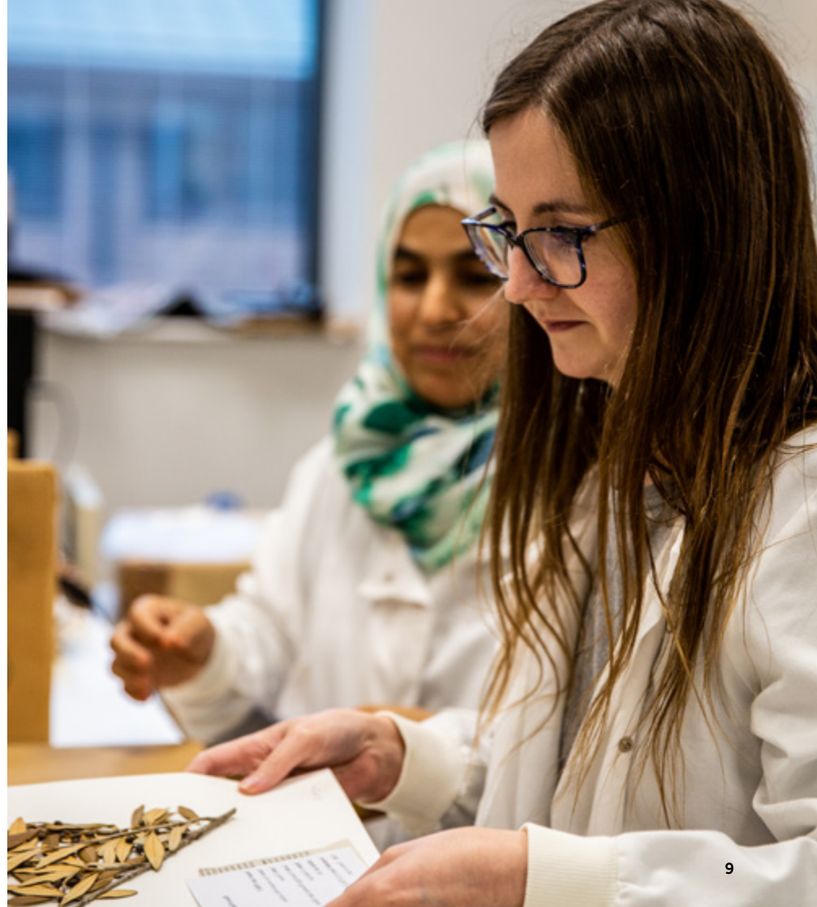
> "I find it fascinating and look forward to the sessions every week. I also find the experience very helpful with learning my taxonomy."
>
> ***Arabella***

Volunteering at the Herbarium

Our volunteers help process new specimens, catalogue current specimens, and check for insect pest attacks. Established volunteers also help with social media and outreach activities. Our volunteers are helping move, pack and label new Herbarium boxes, rehousing the entire collection.

Previous volunteers have gone on to PhDs, jobs in environmental consultancy and in other herbaria and museums.

> "Volunteering at the Herbarium has allowed me to gain additional plant knowledge via discussions with current PhD students, and exposure to the materials themselves, which has reinforced the learning during the Part 1 Plant module."
>
> ***Gemma***



Fluid Preservation

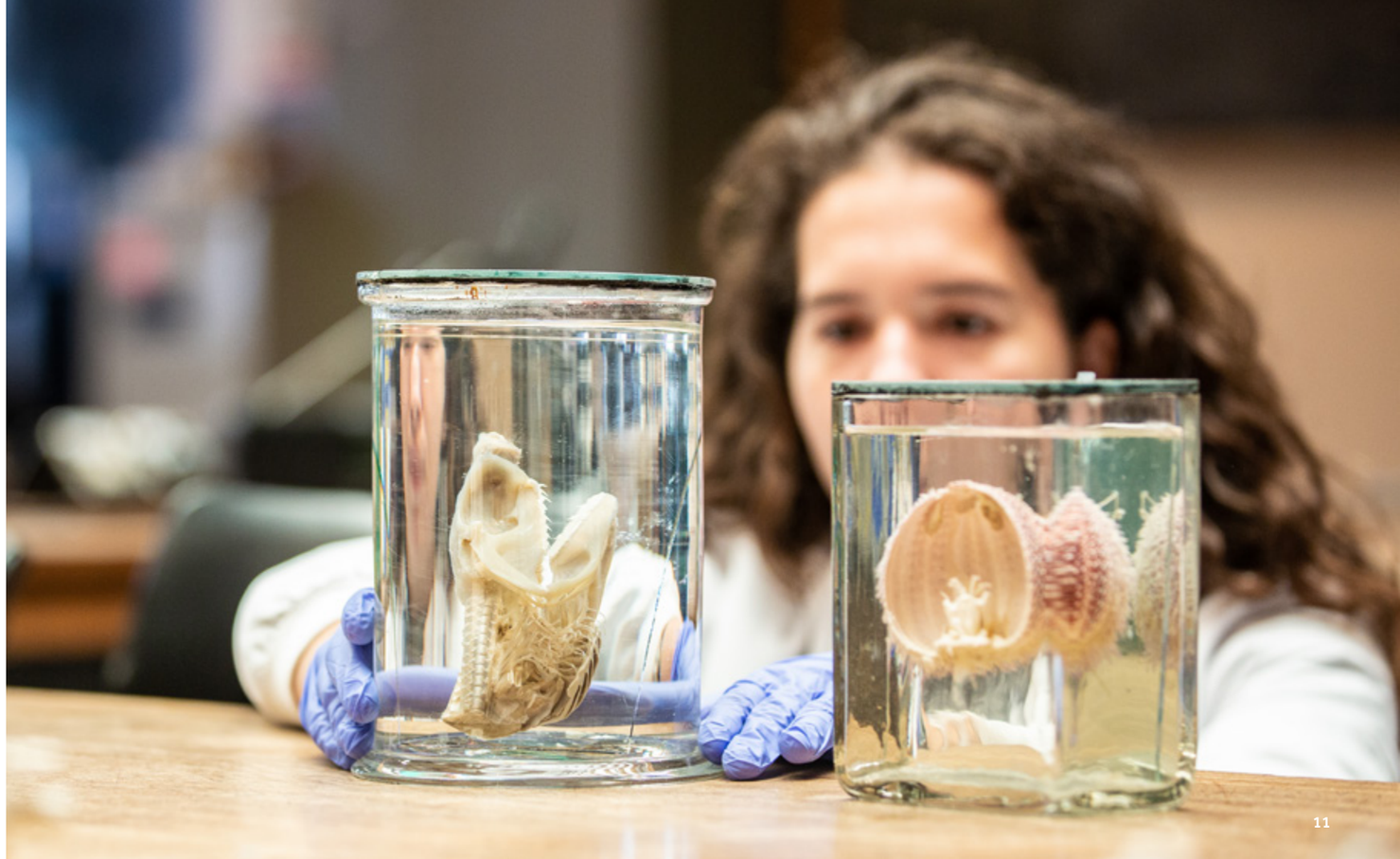
We hold over 2000 zoological specimens preserved in fluids, this includes whole animals and dissections. Whether the specimens are on display, used in teaching or stored for future use, they all require constant maintenance.

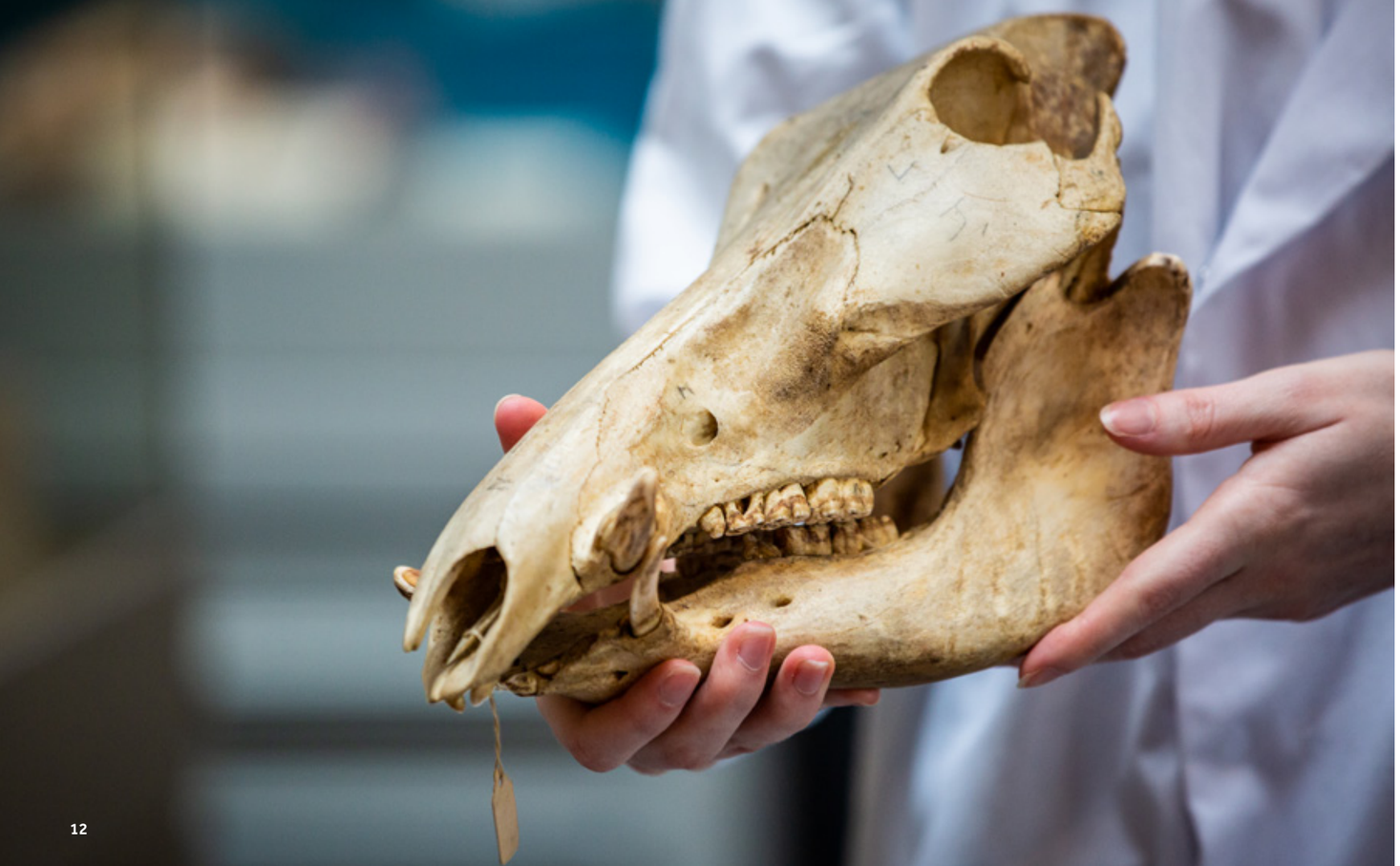
Volunteering with our fluid preserved collection is a fantastic opportunity for students to learn a wide range of specialist skills and to develop expertise within a supportive environment.

Our structured training program enables students to safely carry out conservation work on fluid specimens, which is not widely taught elsewhere.

> “Volunteering in fluid preservation has been the highlight of my university experience so far. I’ve learned so many new and rare skills.”
>
> ***Holly***

> “I believe the skills I have learnt will provide me with the extra edge I need when applying for further education and future jobs.”
>
> ***Micaela***



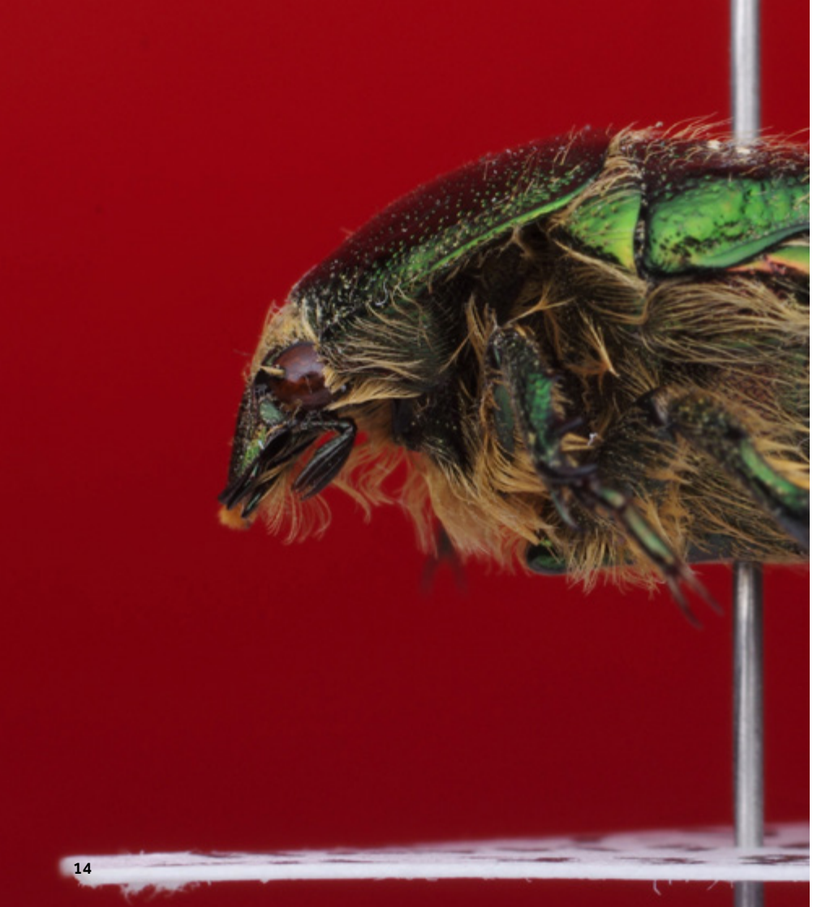


Teaching and Research Specimens

Recent zoology projects have included elephant specimens in worldwide museums, morphology of monkey and dog skulls and a paper on the collectors of our mollusc collection.

Zoology graduate Rashmi Mistry undertook her final year research project studying the Ichthyosaur in the collection, presenting her work at the Society of Vertebrate Paleontology in Utah in 2016.

> “Working in the Cole Museum has been an amazing experience; I have learned so much and gained a new interest and appreciation for fossils. To have access to such a vast collection has been a unique and wonderful opportunity. I have acquired many new skills from the experience, which I will be able to apply in other workplaces and opportunities in the future.”
>
> ***Rashmi***



Italic Insects

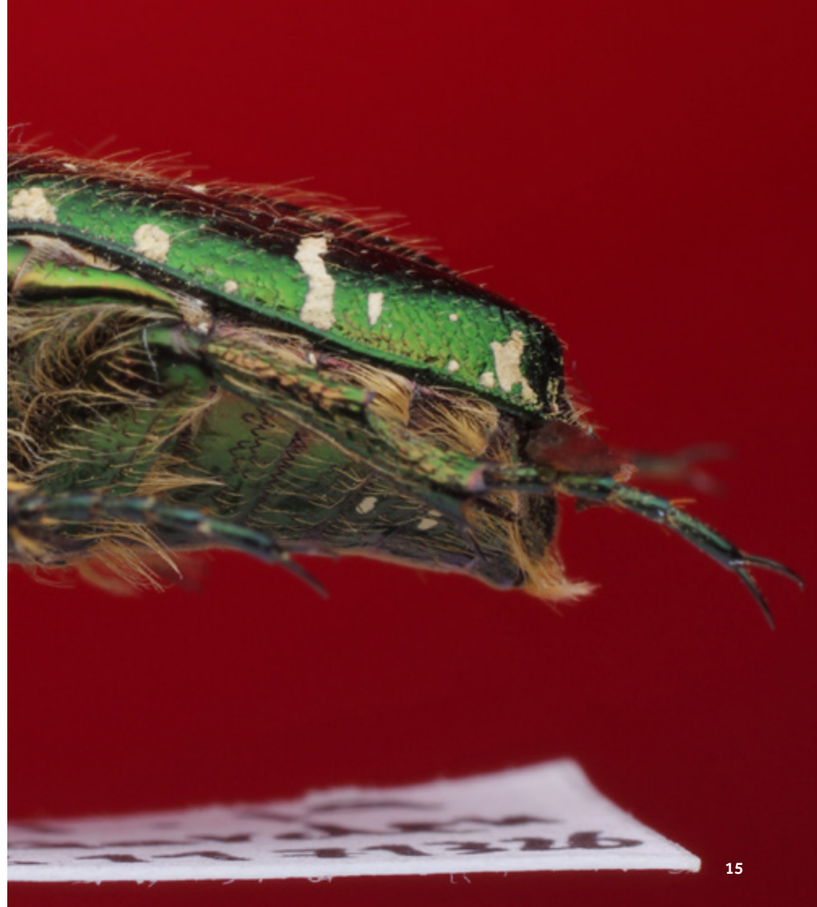
The vital role played by insects in ecosystems is increasingly appreciated, as is their capacity to inspire wonder, while new research has highlighted catastrophic collapses in insect populations.

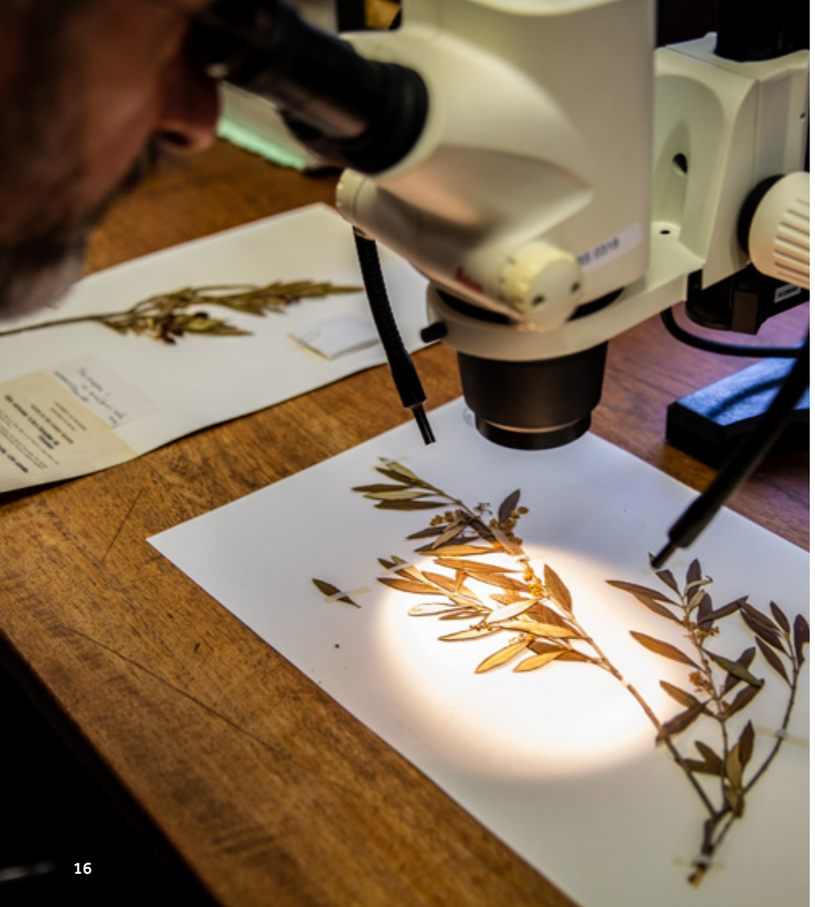
In this light the ITALIC project (Integrated Teaching and Learning Insect Collections) was launched in 2021, with funding from the university's Teaching and Learning Enhancement Projects scheme.

ITALIC volunteers are developing a new teaching focused collection of insect specimens, curated by and for students, and they will also be looking to enhance use of the Cole museum's existing insect collections in undergraduate teaching, research and outreach.

> "It has been amazing to see how the ITALIC project has developed - and it's all thanks to the dedicated team of truly passionate volunteers, drawn from multiple levels of study across different departments. I have no doubt that this project will result in a fantastic entomological collection that can be used for future teaching engagement activities!"

CREDIT: With thanks to Dawid Martyniuk - BSc Zoology student who has kindly supplied the image here and on the front cover.





Herbarium

The herbarium was founded as part of the Agricultural Botany teaching of University College Reading in 1897, but expanded substantially in the 1970s when the Botany Department moved to the Whiteknights campus from London Road. It was one of the main European centres for the writing of Flora Europaea, the first continent-wide flora in the world. Later it became the European base for a checklist flora of Morocco, under the guidance of Stephen Jury. Also, home of Catalogue of Life, under Frank Bisby and later Alastair Culham the current herbarium curator.

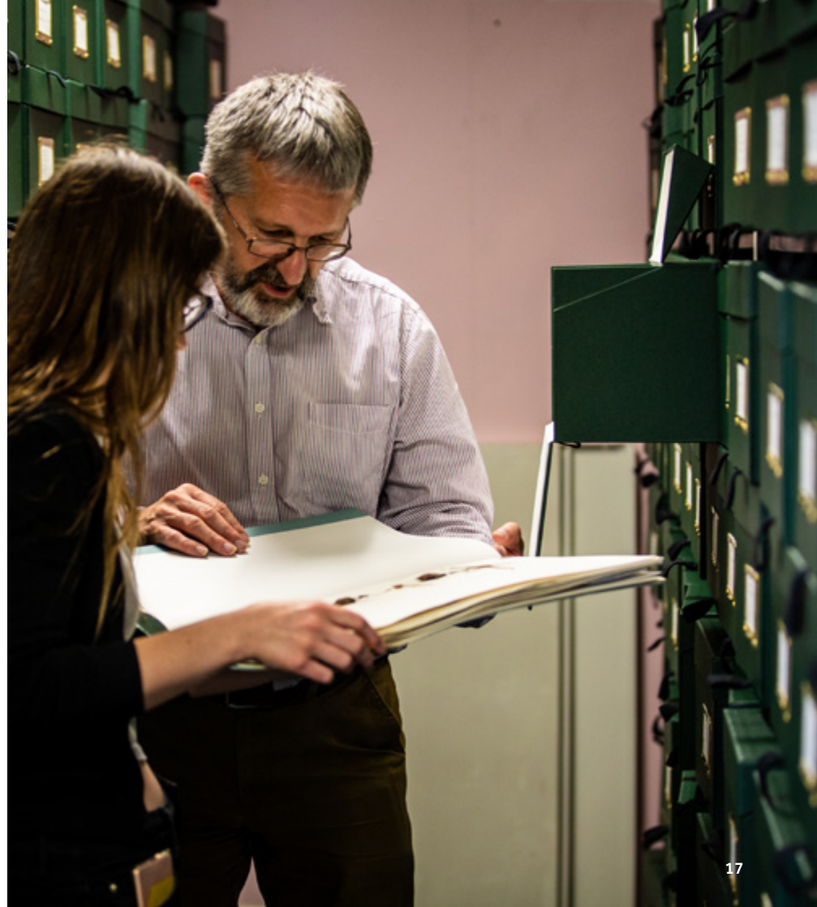
The herbarium provides hands-on experience of plants from as far south as the British Antarctic Territories and north to Canada and Siberia; in one room you can visit the world's flora.

Pre-dating the University, our historic collections including that of a famous female scientist of the Victorian era, Katherine Murray Lyell. Her fern specimens include some collected by the famous evolutionary theorist, Alfred Russell Wallace. We also hold many Type specimens, those on which the application of a scientific name is based, and still discover and name new species on a regular basis.

Our more modern collections are used to support teaching and in biological research including DNA sequencing. Specimens in excess of 80 years old have yielded good DNA. More than 1000 scientific papers have used the herbarium here as a source of material.

The collection still gains new specimens, generally linked to current research projects, but sometimes to fill important gaps in our teaching collection.

We are part of an international community of herbaria, listed online by Index Herbariorum. We are the 10th largest UK herbarium and fourth largest still in a University.



Flying Start

Reading Alumnus Rob has always been drawn to working in museum collections. When he was searching for a University he knew he wanted to gain as much experience with collections as possible. For him, it was the Cole Museum of Zoology that set Reading apart from the crowd.

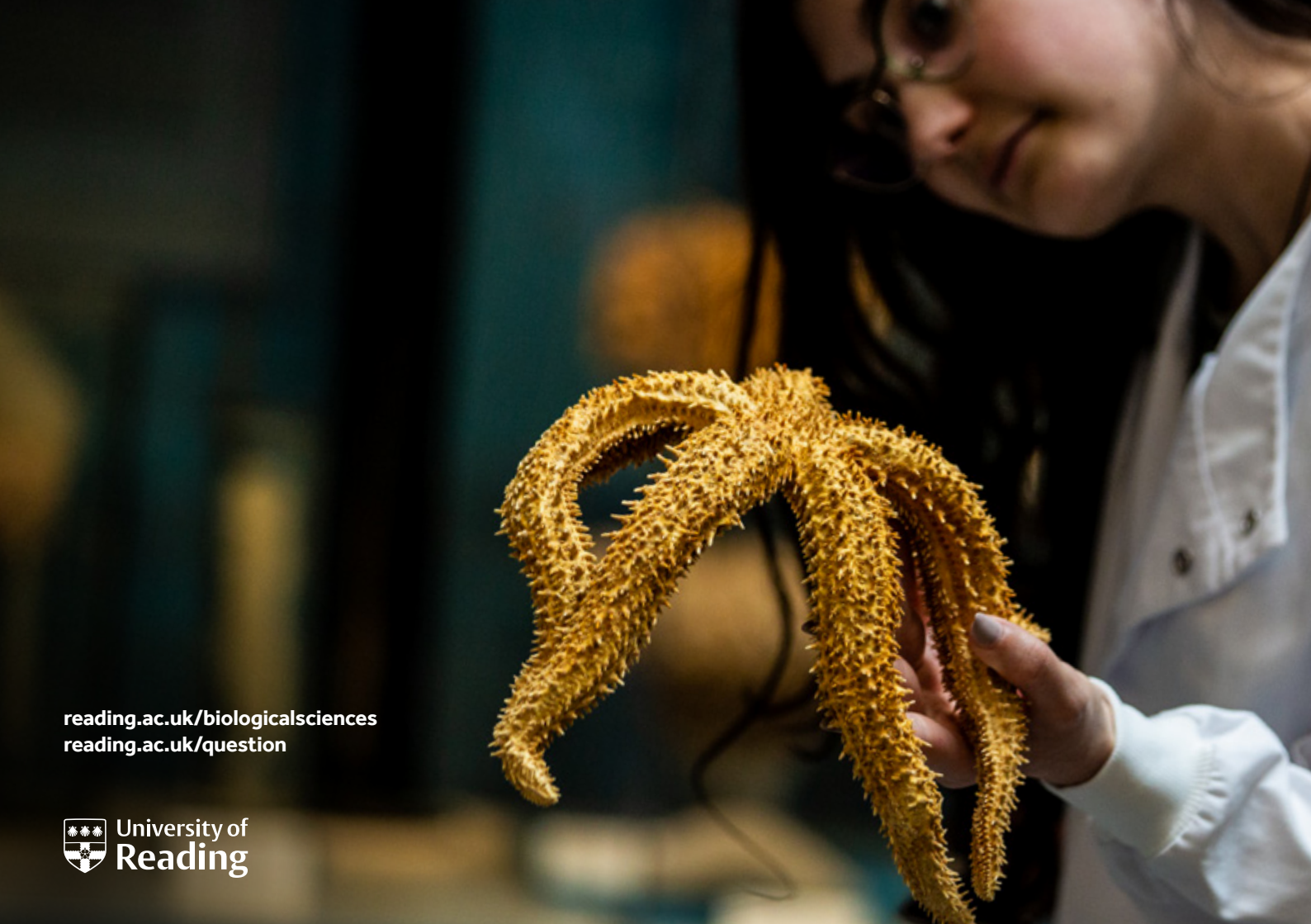
> “One of the main reasons I applied to Reading is because of the Cole Museum, I hoped to be able to volunteer there for three years. It's really difficult to get object handling experience outside of that kind of environment. As a student volunteer, it's a great opportunity to get object handling skills, it really strengthened my knowledge of taxonomy.”

In his second year Rob was introduced to Entomology. He found a real passion for the field that grew throughout his time at Reading, becoming the focus of his studies. This combined with his museum experience formed the ideal starting platform for a long-term career.

Rob combined his interests in insects and substantial museum experience to secure his current role as collections manager at Oxford University Museum of Natural history, where he manages the Diptera (fly) collection, along with the small orders collection, and Aves collection. Rob also runs the Integrated Pest Management Program.

He credits the experience he gained at Reading for providing him with the skills to succeed and progress in such a competitive industry. As part of his role, he advocates to current University students the importance of utilising facilities while studying, and gaining the experience that will be invaluable when looking for a job.

> “If you want to work for museums, I cannot recommend volunteering enough as a first step, it's the thing I tell everyone to do. I wouldn't have got that first job, without the Museum Collection experience I gained at Reading.”



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