Gavin Broad

Senior Curator of Hymenoptera, Natural History Museum

Curator of wasps learned taxonomy skills from NERC PhD

Gavin Broad, Senior Curator of Hymenoptera (wasps) at the Natural History Museum, always wanted to be a taxonomist, and his NERC-funded PhD has helped him to fulfil this ambition.

Gavin's job is managing the museum's collection of wasps, which includes 75,000 described species, and many more specimens not yet identified. Dealing with such large numbers of insects is one of the things Gavin most enjoys about the job. "The thing that might put a lot of people off is the scale of the collections," he says, "but that's what I like. You can start on a drawer and you never know what you're going to find in there."

Gavin's specialist knowledge of wasps, gained during his PhD, is essential to his work and makes him a great asset to the museum. "Otherwise there would probably be nobody else here looking at this group [of wasps] that comprises 200,000 species around the world," he explains, "This is a very important collection."

Collections like this one play an important role in our understanding of the natural world. "I think one of the major benefits for the environment, for instance, is knowing what's out there on the planet," says Gavin, "We have a very limited knowledge of some groups of insects. We need people actually looking at things like this to make sense of the world."

Gavin was interested in taxonomy from a young age, and as an undergraduate he developed a particular interest in wasps. "I'm one of these people who really wanted to know a group of organisms in huge depth," he says.

"Blue skies" research funding from NERC allowed Gavin and his supervisor to develop a PhD project based around his interests. "We were very lucky because Donald Quicke, who was my supervisor, had the opportunity to apply for one of the studentships that was being handed out to the Centre for Population Biology at Imperial College, so we came up with a project."

This focused on parasitoid wasps. These gruesome creatures lay their eggs in or on a host insect, for example a caterpillar. The wasp's egg then hatches into a larva, which develops in or on the host until it eventually matures and eats the host insect alive, invariably killing it. Part of Gavin's research involved studying particular parasitoid wasps that find a host by tapping on wood with tiny hammers on the ends of their antennae and using the echoes to detect insects living inside.

Gavin relished the intellectual atmosphere that studying for a PhD provided. "You had coffee with people whose papers you were reading," he says. He enjoyed being challenged by the scientists he met and worked with, and believes this taught him to think scientifically – an essential skill in his role as curator. He has also found the contacts he made to be very useful, and has since formed collaborations with scientists he met at conferences during his studies.

After completing his PhD in 2001, Gavin worked for two years on a NERC-funded postdoctoral research grant, before moving to NERC's Centre for Ecology & Hydrology, where he worked for three years in the Biological Records Centre. It was there that he began to appreciate the importance of collecting data on the characteristics and distribution of different species, which led him to his current role. In 2006 he was offered a post as Curator of Hymenoptera at the Natural History Museum, and has now been promoted to Senior Curator.

The ability to interact with people from different backgrounds that Gavin developed during his PhD is critical in his job. Scientists from all over the world visit the museum to use the collections for research. When Gavin is not busy looking after the collections, he works on research projects with other scientists. Because of his specialist knowledge, companies that rear wasps for pest control contact Gavin and ask him to determine the species of the wasps they have reared, to make sure they will target the correct type of insect.

Gavin also draws on his communication skills in his work with the public. He is on the advisory board for an arts programme and works with artists to develop and run public events in the museum. At one event, children had the chance to dress up as specimens and be displayed in human-sized cases. This is one of the aspects of his job that Gavin most enjoys, and he believes it is important for the public to understand what goes on behind the scenes.

"The interactions with the public are really rewarding," he says, "An amazing percentage of people who come into the museum don't know that we've got these huge collections and all these scientists behind the scenes. So trying to get some of that across, that we're an important science organisation as well as a big museum, should be core to what we're doing."