Research Placement at the John Krebs Field Station, Wytham

My placement at the John Krebs field station provided me with a unique and invaluable insight into the life of an active researcher, working both independently and within the framework of a research group. Over the course of my two-month placement, I was assigned to work under multiple teams, primarily in a lab concerned with assessing the nutritional needs of varied species of honeybees. I was further given the opportunity, however, to work with the neighboring Taste Lab, as well as with a series of postgraduates.

My original agreement was to spend the duration of my placement preparing bumblebee microcolonies under the supervision of Dr. Jennifer Scott – in truth, my time was spent on far more varied and interesting topics than this preliminary agreement would have allowed. Due to scheduling issues – and rather extreme weather conditions – it simply would not have been viable to solely prepare, breed and maintain these colonies for such a length of time. My principle focus therefore shifted to assisting Jennifer in her own ongoing research, concerning how honeybees differentially consumed solutions of variable combinations and concentrations of simple sugars. These artificial solutions were analogues of the nectars encountered by foragers. Jennifer was an incredibly accommodating supervisor, allowing me to be involved in all stages across this experiment, rather than simply delegating me the ‘grunt work’. As such, I assisted in the preparation and delivery of these solutions, the collection of the bees from local hives and the post-experimental data collection. In doing so, I was able to strengthen a myriad of skills, drawing from the existing groundwork provided by my course – animal husbandry, ethics and, fundamentally, good scientific practice throughout.

That is not to say that the microcolony experiment did not proceed in some capacity, albeit on a massively reduced scale. Collection of wild bumblebees from the nearby Wytham Woods allowed us to discover how bees of different origins would interact when confined to a new colony. Against expectations, they showed very little aggression towards each other – although not as paramount a concern as originally expected, this experiment nonetheless gave me the opportunity to experience a variety of the disciplines involved in research. Chief among these was field work, for the collection of the bees themselves, and the practical ‘R&D’ underpinning the experiment, for the construction of the colony skeletons. Most rewardingly, this was a project that I was trusted to undertake independently, monitoring the interactions, and drawing my own conclusions; surprisingly, all deaths occurred by natural means, with no conflict between members. In a similar vein, I was responsible for caring for bumblebee colonies whilst their researcher was absent – this simply involved routine care and feeding but was highly rewarding in the sense of the trust and independence I was afforded.

The field station was also host to a number of post-graduates, divided between MBiol and PhD projects. I was able to work with a number of these, all of whom were performing feeding assays with a varied number of chemical classes. Investigations with aromatic compounds yielded insight into the memory capability and learning processes of honeybees, whereas those with amino acids revealed truths of their nutritional demands. This was where I began to develop niche entomological skills, ones I may myself rely upon during my own postgraduate career – perhaps more importantly, it gave me a critical oversight of postgraduate life, allowing me to plan my own academic trajectory with informed reason.

As all experiments are currently ongoing, I cannot comment on the results obtained, and the potential implications of these in their corresponding fields. Nonetheless, my participation alone was of greater academic value to me than I thought could be possible. I have developed specialist skills, have a greater understanding of the academic world, and have forged invaluable relationships which will continue to be of great benefit throughout my ongoing studies.