

# JAMES RENNIE BEQUEST

## REPORT ON EXPEDITION/PROJECT/CONFERENCE

**Expedition/Project/Conference Title:** The affect of artificial flowers on the feeding behaviour of Rufuos Hummingbirds.....

**Travel Dates:** 26/05/2008 to 10/07/2008.....

**Location:** Westcastle, Calgay, Alberta, Canada.....

**Group Member(s):** Sandra Goded and Jenny Sturgeon .....

**Aims:** Investigating the affect of artificial flowers in feeding behaviour of Rufous hummingbirds as well as knowing the differences in behaviour of the hummingbirds depending on the concentartion of sucrose used and the amount offered.....

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### OUTCOME (not less than 300 words):-

Rufuous hummingbirds are very charismatic and attractive birds so people always want to see them and look at the funny way how they feed. That is why in Canada, where this species of hummingbird migrate during spring and early summer, people use to put artificial feeders along their tents when they go camping to see how these birds feed close to them. Aparently, this practice seems beneficial for the birds as they have food constantly and can save them from starvation in case there is bad weather and the flowers are inaccessible (which they indeed do). But apart from this advantage, artificial feeding could affect the behaviour of these wild birds and could indeed develop into a decrease in numbers of birds that migrate every year. This process is studied by Ida Bacon as her thesis for the Department of Evolutionay Biology in Ashworth Building, with the supervision of both Sue Healy (University of Edinburgh) and Andrew Hurly (University of Lethbridge, Alberta, Canada). The field work of Ida's PhD is a huge project, as she has to study the behaviour of around 35 males of Rufuous hummingbird and take an enormous amount of data to analyse in only the 6 weeks that the birds spend in Canada. So the need for assistants in her proyect is inevitable.

Me and Jenny Sturgeon we both really wanted to go to canada to help her because we wanted to have experience in doing field work before we finish our undergraduate this year and also we wanted to go and visit that amazing part of the world that form the Canadian Rockies, in addition to, of course, have the opportunity to see incredible animals such as hummingbirds, bald eagles, bears, moose, cougars or the red-winged blackbird!!

Now when I write this report, I have already been in Canada and I feel so lucky that I have done this field trip and I have learnt so much from it. And I feel also lucky because I could do it thanks to the great help that the James Rennie Bequest gave me. Without it we could not have gone and we would have missed one of the best six weeks of our lives.

Thanks to the awards we recieved we could go and at the end of May, just after our exams, we started our trip to the Rockies. The trip was very long and tiring but we lived a lot of adventures on the way. At the beginning when we arrived there everything was so new that we could not stop looking at the landscape which is amazing (see pictures 1 and 2). But soon the work started and we were quickly taking data around feeders where territorial males had already established their territories, feeding every 10 minutes from them and providing us with the amazing view of them performing courtship flights every time a female was around. We spend around 2 weeks taking data from 10 males of the time spent in every perch around the feeder and the distance from the perch to the feeder depending on the concentration of sucrose provided. We quickly realised that they fed more regularly when the nectar had a lower concentration of sucrose (14%) than when it had a higher one (25%). We recorded the amount of sucrose drank in every feed with capillary tubes and a syrxinx. We also recorded the presence of intruders and their sex in order to know if artificial

feeders attract more intruders than flowers and if that could affect the population of territorial males. This was the time when we took most of the pictures from hummingbirds (see Pictures 3 and 4). The results of this experiment are not yet known as Ida is doing now the stats with the data we obtained.



After those 2 weeks, the next experiment we did was the largest one and probably the most difficult to measure. We were trying to see if the birds could relate a colour of flower with a concentration of sucrose and if they fed more on one concentration than another. To do this, we built some transparent pannels with 20 wells on them and we covered 10 wells of each pannel with a paper of a different colour. We put the two different percentages of sucrose and a constant or variable volume in each well depending on the colour, and record if the birds drank more from one colour than another or randomly. Some wells were not completely emptied so we recorded the volume of sucrose left with capillary tubes. We did this study with 3 birds each one of us. The results of this experiment are not yet known aswell but we could easily see that the birds have a different feeding behaviour when the concentration of sucrose in the nectar changes, so we predicted that the birds feed differently depending on the flower they feed on. We also collected pollen samples from the bills of the birds (while we marked them and band them) to see from which flowers they feed on. And we collected and analyse the % of sucrose from the main flowers used to feed. We could see that many of the flowers they normally feed on have a much higher concentration of sucrose than the nectar artificially provided.



With all this we learnt a lot about about field work and how to do research in the field, the difficulties of field work, the necessity of working even it the weather is not great, the experience of having the animals so close to you and of living with the same people for 6 weeks in a small place.

I am very motivated now to do my own research in the future, and I am very glar that I had this oppportunity to do it now and feel that I can do something like this, and also meet people that could maybe help me in my own research in the future. It was a great way of making things clear about what I want to do. I am really pleased that I had the James Rennie Bequest and I could go to one of the best trips of my life. Thank you very much indeed and I hope many more students are helped by you and can make some of their dreams come true with your help.