

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole
Grants Director

Grant Recipient Details	
Your name	Adriana Inés Zapata
Project title	Regal and Hawk moths (Saturniids and Sphingids) of the "serrano" forest in eastern slopes of the "Sierras Chicas" of Cordoba, Argentina.
RSG reference	24.09.06
Reporting period	February 2007- April 2008
Amount of grant	£ 5000
Your email address	adrzapata@yahoo.com.ar
Date of this report	24/07/2008

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To know richness, distribution and conservation status of Saturniids and Sphingids in "Serrano" Forests			X	A total of 19 species were collected in the study area: 12 Sphingidae and 7 Saturniidae. Eleven species were found the 1 st time in the sampling area and 1 was found the 1 st time in Argentina.
To make reference collections which allow comparative studies considering geographical and temporal variability.			X	We compiled a reference collection consisting of 300 individuals belonging to 19 species of the two families named above. They represent the Lepidoptera fauna of these families, which is found monthly during the yearly flight season in the "Serrano" forest.
To make an image database of the species present in the area			X	All the collected and widespread specimens were photographed for making the image database.
To contribute to the formation of skilled people capable to work with these groups of insects			X	Eight students were involved in different aspects and development steps of the project. With 4 of them we founded GICLA (Grupo de Investigación y Conservación de Lepidópteros de Argentina, Argentina's Lepidoptera Research and Conservation Team). Two of them have realized their final works (graduate theses) with Lepidopterous and a third one will finish it during the next year. All three students expect continuing working with these groups of insects.
To offer to the community (scientist and general public) field guides for local species		X		We designed two field guides in brochure format. Additionally, we performed two workshops and talks in schools, and 2 additional workshops and talks are planned for the next

recognition			semester. In next months we will present our results on four scientific and educative meetings, together with the developed field guides' and didactic activities. Three scientific publications are going to be submitted for publication in the next months.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

The low temperatures of May did not allow the collection of moths, since these are not active at temperatures below 13°C. Therefore, this month was not included in our study.

3. Briefly describe the three most important outcomes of your project.

Research:

This is the first systematic sampling program of moths of Córdoba's "Serrano" forest representing, therefore, the baseline regarding the species diversity of these organisms in this region.

Twelve Spingidae species were found. In the last 40 years, 15 species belonging to this family have been cited for the whole province and only 4 for this area. Three species were commonly found, while 3 others were sampled only in one occasion.

Seven species of Saturniidae were collected; three of them are new records for the area, and one for the country. Only one species was sampled in more than two occasions.

For the families surveyed, the species recorded in our study represent 8% of the fauna already found in Argentina. The specimen collection made and archived at the National University of Córdoba, as well as the database and the corresponding image database, will allow comparative studies considering different geographical regions and time.

It was surprising to find a higher variety and abundance of moths outside than inside the natural reserve sampled. Based on these findings, the protection of the forests surrounding the reserve could be proposed as a buffer area, which would help to maintain the biodiversity of, at least, these moth species.

Education / Communication Difusión:

Teacher, school classes, university students and general public could now refer to a field guide who will allow them to identify easily Regal and Hawk moths of our "serrano" forest. In these field guides, they will also find information about the importance of these insects. Based on the information now available, projects contributing to preserve the biodiversity of the "Serrano" forest could be better designed. Through presentations in congresses and the publication of our results in peer reviews journals we expect to spread this new knowledge in the scientific community.

Formation of human resources:

With this project I contributed to the formation of students, in particular regarding field and laboratory work for studying Lepidoptera (systematic and ecology). With 4 of these students we founded GICLA (Argentina's Lepidoptera Research and Conservation Team). Two of these students realized his final works with Lepidoptera and an additional one will realize it during the next year. All expect to continue working with these insect groups.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

Knowledge regarding biodiversity available in particular to authorities, legislators and general public, leads to a stronger support for actions and decision making with respect to conservation. Now, teacher and school classes in the area of our studies, as well as environmental authorities could refer to field guides and information about the importance of Regal and Hawk moths in the "Serrano" forests. With these available information they will be able to better design projects that contribute to preserve biodiversity in these environments.

In addition, we signed a research agreement with the private "serrano" forest reserve "Campo los Hornillos" http://www.campoloshornillos.com.ar/res_convenios.htm

5. Are there any plans to continue this work?

Yes. Our team (GICLA) plans to continue with the research of lepidopterous fauna in our province and our country, to participate in scientific events, and to carry out other educational activities with children and general public.

6. How do you plan to share the results of your work with others?

We made two field guides (brochures) and we carried out two workshops and talks in schools. Two additional ones are planned for the next semester.

Also, we will present our scientific results and our didactic material production at:

- III Congreso Argentino de Conservación de la Biodiversidad (Buenos Aires, 11-14/08/2008), <http://www.dbbe.fcen.uba.ar/cnb3>
- II Foro de Extensión Universitaria (Córdoba, 2-3/10/08) foroextension08@seu.unc.edu.ar
- IV Congreso Iberoamericano de Ambiente y Calidad de Vida 5to Congreso de Ambiente y Calidad de Vida. Educational line and Cientific line (Catamarca, 22-26/09/08) <http://www.exactas.unca.edu.ar>
- VII Congreso Argentino de Entomología (Huerta Grande, Córdoba, 21-24/10/08) http://www.sea.org.ar/VII_cae

The list of species found was presented to the Environmental State Department of the Province of Córdoba for inclusion in the provincial biodiversity database.

We will submit the following manuscripts for publication in peer reviewed journals during the next months:

- ***Psilopygida crispula* (Dognin 1905): biología y descripción de los estados inmaduros (Lepidoptera: Saturniidae: Ceratocampinae).** Zapata, A.; Zarco, A.; Beccacece, H. & N.Villafañe.
- **Regal and Hawkmoths (Saturniids and Sphingids) of the “serrano” forest in eastern slopes of the “Sierras Chicas” of Córdoba, Argentina.** Zapata, A.; Beccacece, H.; Villafañe, N.; Zarco, A.; Cherini, M.P. & A. Cuchiatti.
- **Descripción de los estados de huevo y larva de *Molippa strigosa* (Maassen adn Weyding 1885) (Lepidoptera: Saturniidae: Hemileucinae).** Zapata, A.; Beccacece, H.; Villafañe, N. & A. Zarco.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

We had planned to realize the fieldwork from November 2006 to May 2007. However, we could only start when the funds were available in February 2007. Because of the natural season and weather conditions, and for allowing a complete field work, we decided to sample the complete cycle November 2007 - April 2008. Therefore, the project took a bit longer than foreseen. All the collected material has been processed, but the writing and printing of the publications was a bit delayed.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. 1£ = \$6.035

Item	Budgeted Amount	Actual Amount	Difference	Comments
Equipment				
Generator unit	270	426	-156	The Generator unit and the Insect storage cabinet were more expensive than originally budgeted. The Photograph camera was less expensive. Insects' nets, spreading boards and drying box were constructed by us.
Light traps	50	50	0	
Insect nets	90	50	+40	
Spreading boards	65	50	+15	
Insect storage drawers	165	170	- 5	
Drying box	50	20	+30	
Insect storage Cabinet	120	200	- 80	
Polyethylene Foam	30	30	0	
Dissecting Tools	70	70	0	
Digital photograph camera	500	414	+86	
TOTAL	1410	1480	- 70	
Fuel and Materials				
Gasoline and lubricant	200	155	+45	Less fuel was used with respect to the calculated. We have needed more insect pins to widespread the specimens.
Insect collecting and preserving chemic	100	75	+25	
insect pins	50	140	-90	
lamps	50	50	0	
lamps	150	120	+30	
glass and plastic materials	60	60	0	
stationery (office paper, ink, CDs, etc.)	610	600	+10	

TOTAL				
Field collecting	1400	1200	+200	We realized 9 monthly field trips of two days each, but not all the collaborators could participate in all the field trips.
Car maintenance	280	480	-200	The car transmission had to be repaired.
Diffusion activities	200	200	0	
Bibliography and photocopies	500	520	-20	We buy one book more than originally budgeted
Sending costs	100	100	0	
Guide Edition	500	300	+200	Brochure format was less expensive than mini book format.
		120	-120	In this point we include the participation in scientific events and manuscripts publication costs, which were originally not accounted for in the budget
TOTAL	5000	5000		

9. Looking ahead, what do you feel are the important next steps?

To determine Saturniids and Sphingids diversity in others environments of the province of Córdoba, to make reference collections of the areas where there is no information available yet, to elaborate illustrated field guides for species identification, to start researching the diversity of others Lepidoptera (moths and butterflies) present in the province of Cordoba.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes, we already used the RSGF logo on two field guides. The posters that will be exposed at scientific congresses in the future also will display the logo, as well as a guide for teacher and activity books for school classes.

11. Any other comments?

We studied the life cycle of two Regal moths species under laboratory conditions. This allowed us to identify the corresponding immature stages and, as a consequence, to generate new scientific information. This activity was not contemplated in the original project.

Additionally, we are producing some educational materials:

- a) A guide for teacher
- b) Activity books for students of different levels and
- c) Visual presentations (PowerPoint) that can be used for activities at schools.

We are grateful for the support to RSG to our project.